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Data Encoding Specification of i-Urban Revitalization

- Urban Planning ADE -

ver.3.1

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Introduction

Urban planning has been contributing to the formation of healthy urban environments, preventing disorganized urban sprawl and encouraging infrastructure development in Japan. However, urban areas in Japan, which is facing depopulation and aging society, are at a big turning point. New social issues such as a rapid increase of empty apartments and lands, and non-universal design of facilities lie heavily on their sustainable development, especially regional area. Efficient urban management is required, and municipalities recognize the significance and importance of compact urban development from the perspective of administrative costs.

From this kind of circumstance, the Japanese government strongly promotes i) formation of a high-quality urban revitalization project for regional hub cities, ii) consensus building among those concerned, and iii) investor's understanding, according to the concepts "*Selection and Concentration*" and "*Respect for Local Intention*".

Recently, the investment climate has changed dramatically with the expansion of the Internet and the development of information communication technologies such as "Fin-Tech". Information-intensive activities are very important to call for investment.

The "i-UR" is an information infrastructure for urban revitalization. It allows people to analyse and to visualize the situation and problems of urban areas according to the future vision of each area using geospatial information and virtual reality technologies. The quantitative analysis and visualization clearly show the cash-flow and spatial plan of the city and promotes understanding and encourages consensus building among relevant players, e.g. investors, citizens, and developers.

This document defines the encoding specification of the data for i-UR (which is called "i-UR Data"), and aims to assist the formation of social agreement and to improve the quality of urban investment in order to contribute to urban revitalization.

The i-UR Data is the combination of following data:

- a) 3-dimensional city objects and city model
- b) Detailed information of city objects
e.g. building structure
- c) Constraints/conditions (e.g. regulation) related to urban revitalization
e.g. inundation hazardous areas
- d) Statistical grid data for global analysis and visualization
- e) Public transit information to consider urban function accumulation in regional planning
e.g. population distribution (height) and public transit types (color) on national or worldwide scale

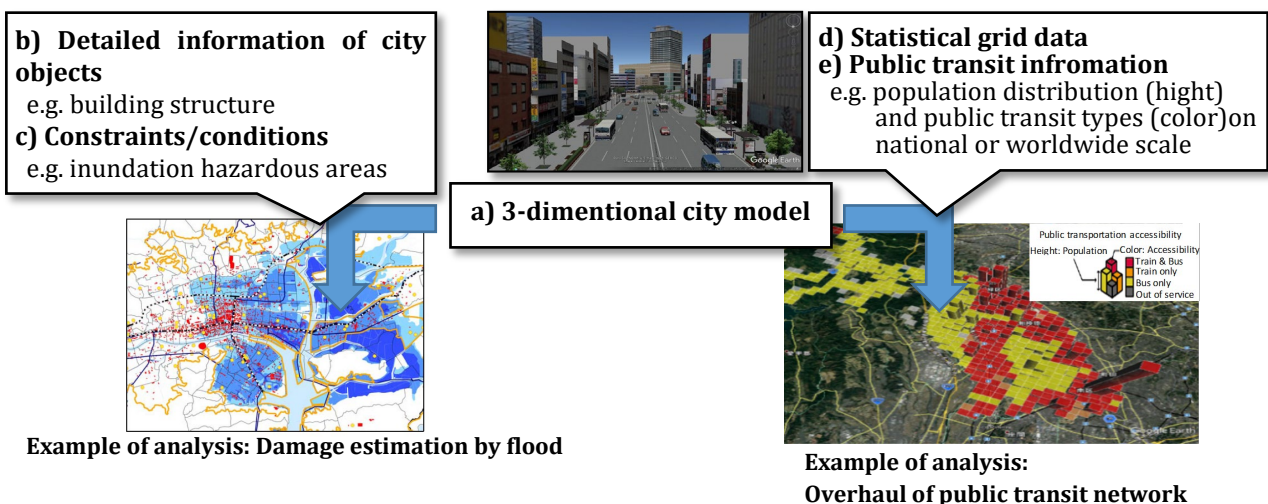


Figure 1 Structure of i-UR Data

The i-UR Data Encoding Specification targets on b) to e) data, as a) is already defined in City Geography Markup Language (CityGML). CityGML is an XML/GML based 3D data standard developed by Open

Geospatial Consortium (OGC) for the representation, storage and exchange of 3D city models and is widely used in the application fields related to urban areas.

This document is composed of four parts listed below. Each encoding specification is tied up with each component and is an extension of CityGML according to the rules of the Application Domain Extensions (ADE) to ensure data interoperability. Thus i-UR Data aims to be utilized in various application fields, such as disaster prevention, tourism and to carry out urban revitalization.

Part 1: Urban Object Data Encoding Specification

This part targets on *b) Detailed information of city objects for analysis* and defines them as properties of CityGML object.

Part 2: Urban Function Data Encoding Specification

This part targets on *c) Constraints/conditions related to urban revitalization* and defines constraints and conditions as subclasses of the root class in CityGML.

Part 3: Statistical Grid Data Encoding Specification

This part targets on *d) Statistical grid data for global analysis and visualization*, and defines a statistical grid as subclasses of the root class in CityGML to describe rough city models with a unified unit among cities.

Part 4: Public Transit Data Encoding Specification

This part targets on *e) Public transit information* to consider urban function accumulation in regional planning, and defines a public transit (e.g. bus route, train route) as subclasses of the root class in CityGML.

Figure 2 shows the conceptual structure of the i-UR Data model. The package “UrbanPlanning ADE” is a collection of four modules which are defined in each part of this encoding specification mentioned above.

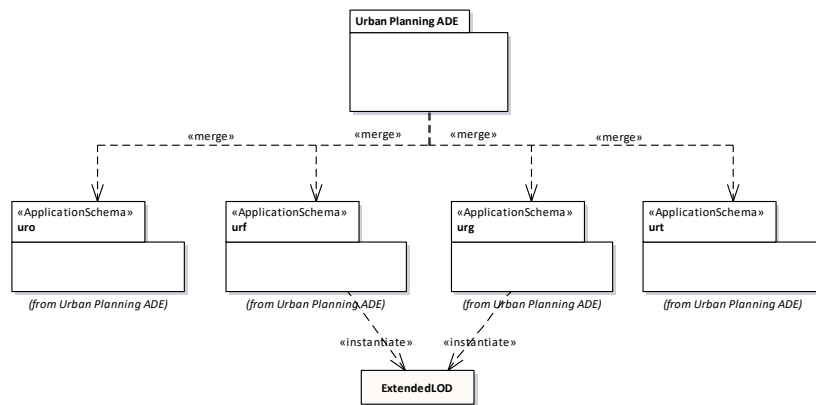


Figure 2 Conceptual structure of i-UR Data model

Furthermore, this document defines new Levels of Detail (LOD) for a broad description of city models. These extended LODs enable user to describe rough city models which do not have to be detailed but should be necessary regional or national planning. This ExtendedLOD concept is commonly applied to related modules, and the details of ExtendedLOD is described in Part 2 and Part 3 of this document where this concept is instantiated.

The i-UR Data Encoding Specification has been updated based on the results of Project PLATEAU led by Ministry of Land, Infrastructure, Transportation and Tourism of Japan. In this project, CityGML with the Urban Planning ADE is applied as the data model and encoding format. It is strongly expected that the 3D city model will be used not only for urban planning but also for various other purposes as a social information infrastructure.

Part 1. Urban Object Data Encoding Specification

1. Scope

Detailed information of buildings, roads, and other objects which constitute urban areas are necessary for the quantitative assessment of the current situation and problems in urban areas.

This document defines additional information of urban objects which is necessary for urban assessment as attributes of urban objects and specifies the encoding format of the information.

2. Normative references

Followings are normative references of this document.

- OpenGIS® OGC City Geography Markup Language (CityGML) Encoding Standard, Version 2.0, OGC document 12-019

3. Conventions

3.1 Terms and definitions

No terms and definitions are listed in this document.

3.2 Abbreviated terms

ADE Application Domain Extensions

CityGML City Geography Markup Language

GML Geography Markup Language

LOD Levels Of Detail

OGC Open Geospatial Consortium

UML Unified Modeling Language

4. Urban Object Data Encoding

4.1 Overview

The Urban Object Data Encoding is an extension of CityGML. This document defines the elements and types according to the rules of the Application Domain Extensions (ADE) which are necessary for urban assessment and planning, but not defined in CityGML. Those already defined in CityGML are imported without any inconsistency.

Figure1-1 shows the structure of Urban Object Data. The Urban Object module imports all thematic modules defined in CityGML 2.0.

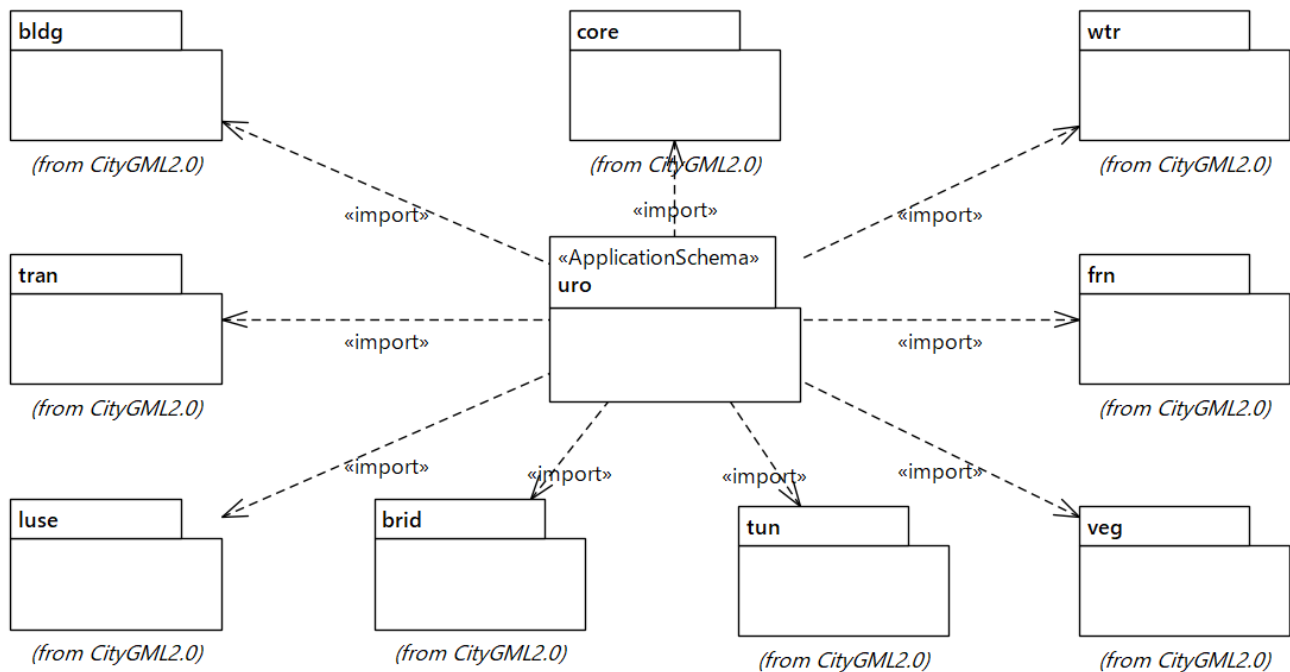


Figure1-1 Package diagram of Urban Object Data

Module name	Urban Object
XML namespace identifier	https://www.geospatial.jp/iur/uro/3.1
XMLSchema location	https://www.geospatial.jp/iur/schemas/uro/3.1/urbanObject.xsd
Recommended namespace prefix	uro
Description	This module defines additional thematic aspects of city objects which enables users to examine and to analyse current situation and issues of urban areas. This module is the extension of the existing modules for city objects such as <i>building</i> , <i>land use</i> and <i>transportation</i> .

4.2 Object definition

4.2.1 Extended properties of Building

This module defines groups of thematic attributes for a building, which are used as types of building properties. Each building property extended in this module is declared as a member of the general property of *bldg::AbstractBuilding*.

4.2.1.1 Building properties for urban planning

Groups of thematic attributes shown in Figure1-2 are the building characteristics useful for urban planning.

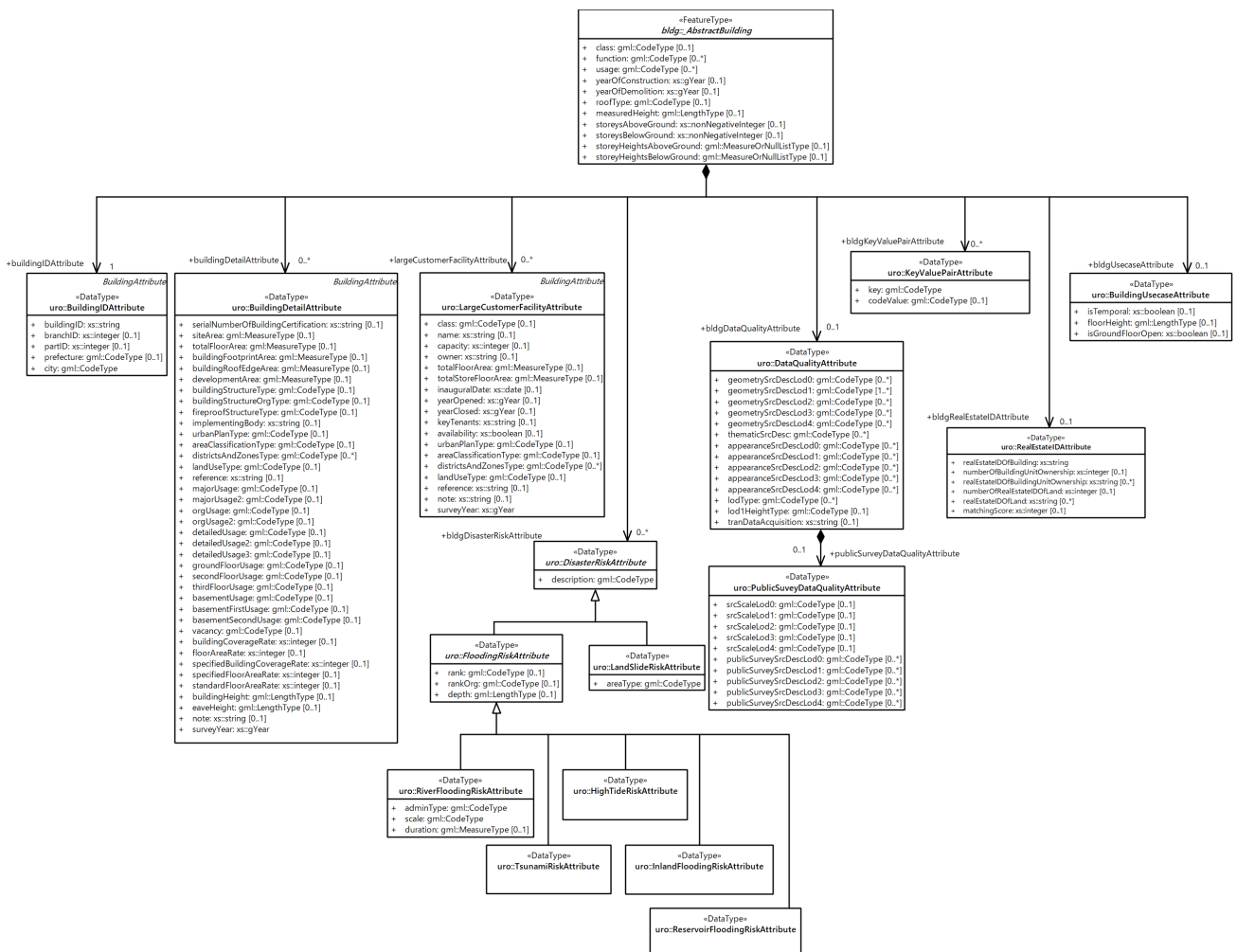


Figure1-2 UML diagram of extended properties of AbstractBuilding

Extended properties of *_AbstractBuilding*

Property	Definition
buildingIDAttribute	Building identification information.
buildingDetailAttribute	Detailed descriptions of the building, e.g. building structure and total floor area.
largeCustomerFacilityAttribute	Current status of the building when if the building is a large customer facility.
bldgRealEstateIDAttribute	Information for linking to rael estate registration data.
bldgDisasterRiskAttribute	Natural disaster risk based on the location of the building.

bldgKeyValuePairAttribute	Additional code attribute for describing attribute which is not covered by other attributes defined by i-UR and CityGML.
bldgDataQualityAttribute	Metadata information about data creation such as positional accuracy and the source documents.
bldgUsecaseAttribute	Use-case specific attributes.

```
<xs:element name="buildingIDAttribute" type="uro:BuildingIDAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="buildingDetailAttribute" type="uro:BuildingDetailAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="largeCustomerFacilityAttribute" type="uro:LargeCustomerFacilityAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgRealEstateIDAttribute" type="uro:BuildingDataQualityAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgDisasterRiskAttribute" type="uro:DisasterRiskAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgDataQualityAttribute" type="uro:DataQualityAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgUsecaseAttribute" type="uro:BuildingUsecaseAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
```

A *uro::buildingIDAttribute* contains identification information of a building. A *uro::buildingDetailAttribute* contains detailed information of a building. A *uro::largeCustomerFacilities* contains detailed information for large customer facilities, such as shopping malls, hospitals and universities. A *uro:bldgRealEstateIDAttribute* contains real estate ID information to connect to real estate registration data. A *uro::bldgStructureDetailAttribute* contains detailed information on building structure. A *uro::bldgKeyValuePairAttribute* can describe detailed information of a building which is not defined in this module and CityGML Building module (See 4.2.15). A *uro::bldgDisasterRiskAttribute* contains hazards of the building's location caused by natural disaster (see 4.2.14). A *uro::bldgDataQualityAttribute* contains metadata information about data creation, such as the source document and map scale. A *uro::bldgUsecaseAttribute* contains attributes for specific use-cases to ensure extensibility.

BuildingIDAttribute, BuildingIDAttributeType

Type	Definition
uro::BuildingIDAttribute	Identification information of a building.
Property	Definition
buildingID	Unique building ID in the municipality.
branchID	Branch ID for Warehouses and sheds associated with the main building.
partID	Building area of a footprint polygon.
prefecture	Prefecture name of the building location.
city	City name of the building location.

```
<xs:element name="BuildingIDAttribute" type="uro:BuildingIDAttributeType"
substitutionGroup="uro:BuildingAttribute"/>
</xs:element>
<xs:complexType name="BuildingIDAttributeType">
<xs:complexContent>
<xs:extension base="uro:BuildingAttributeType">
<xs:sequence>
<xs:element name="buildingID" type="xs:string"/>
<xs:element name="branchID" type="xs:integer" minOccurs="0"/>
<xs:element name="partID" type="xs:integer" minOccurs="0"/>
<xs:element name="prefecture" type="gml:CodeType" minOccurs="0"/>
```

```

<xs:element name="city" type="gml:CodeType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

BuildingDetailAttribute, BuildingDetailAttributeType

Type	Definition
uro::BuildingDetailAttribute	Detailed information of a building.
Property	Definition
serialNumberOfBuildingCertification	Serial number of the building certification.
siteArea	Site area of a building.
totalFloorArea	Total floor area.
buildingFootprintArea	Area of the wall outline of the building.
buildingRoofEdgeArea	Area of the roof outline of the building.
developmentArea	Area of development.
buildingStructureType	Building structure type based on standard codes.
buildingStructureOrgType	Building structure type based on the code set by the municipality.
fireproofStructureType	Fireproof structure type of the building.
implementingBody	Implement body of the building.
urbanPlanType	Type of the building location designated by Urban Plan.
areaClassificationType	Type of the building location designated by Area classification.
districtsAndZonesType	Type of the building location designated by Districts and Zones.
landUseType	Type of the building location designated by Land Use Plan.
reference	Reference information of the building.
majorUsage	Major classification of building usage based on the code set by the municipality.
majorUsage2	Major classification of building usage 2 based on the code set by the municipality.
orgUsage	Building usage based on the code set by the municipality.
orgUsage2	Building usage 2 based on the code set by the municipality.
detailedUsage	Building detailed usage based on the code set by the municipality.
detailedUsage2	Building detailed usage 2 based on the code set by the municipality.
detailedUsage3	Building detailed usage 3 based on the code set by the municipality.
groundFloorUsage	Usage of the ground floor of the building.
secondFloorUsage	Usage of the second floor of the building.
thirdFloorUsage	Usage of the third floor of the building.
basementUsage	Usage of the basement floor of the building.
basementFirstUsage	Usage of the first basement floor of the building.
basementSecondUsage	Usage of the second basement floor of the building.
vacancy	Classification of whether a building is vacant or not.
buildingCoverageRate	The ratio of the Building area divided by the land (site) area.
floorAreaRate	The ratio of Total floor area divided by Land (site) area.
specifiedBuildingCoverageRate	BuildingCoverageRate limits set by city planning.
specifiedFloorAreaRate	Maximum floor-area ratio limits set by city planning.
standardFloorAreaRate	Floor-area ratio calculated according to various provisions of the Building Standards Law.
buildingHeight	Height of the building.

eaveHeight	Vertical distance between the floor level and the eave line.
note	Additional information of the building.
surveyYear	The fiscal year in which the Basic Surveys Concerning City Planning was conducted.

```

<xs:element name="BuildingDetailAttribute" type="uro:BuildingDetailAttributeType"
substitutionGroup="uro:BuildingAttribute"/>
</xs:element>
<xs:complexType name="BuildingDetailAttributeType">
<xs:complexContent>
<xs:extension base="uro:BuildingAttributeType">
<xs:sequence>
<xs:element name="serialNumberOfBuildingCertification" type="xs:string" minOccurs="0"/>
<xs:element name="siteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="buildingFootprintArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="buildingRoofEdgeArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="developmentArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="buildingStructureType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="buildingStructureOrgType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="fireproofStructureType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="implementingBody" type="xs:string" minOccurs="0"/>
<xs:element name="urbanPlanType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="areaClassificationType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="districtsAndZonesType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="landUseType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="reference" type="xs:string" minOccurs="0"/>
<xs:element name="majorUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="majorUsage2" type="gml:CodeType" minOccurs="0"/>
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<xs:element name="detailedUsage3" type="gml:CodeType" minOccurs="0"/>
<xs:element name="groundFloorUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="secondFloorUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="thirdFloorUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="basementUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="basementFirstUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="basementSecondUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="vacancy" type="gml:CodeType" minOccurs="0"/>
<xs:element name="buildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="floorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="specifiedBuildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="specifiedFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="standardFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="buildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="eaveHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0"/>
<xs:element name="surveyYear" type="xs:gYear"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

LargeCustomerFacilityAttribute, LargeCustomerFacilityAttributeType

Type	Definition
------	------------

LargeCustomerFacilityAttribute	Detailed information of large-scale facilities which draw attention of customers.
Property	Definition
class	Type of the facilities.
name	Name of the facilities.
capacity	Capacity of the facilities.
owner	Name of the facilities' owner.
totalFloorArea	Total floor area.
totalStoreFloorArea	Total store floor area.
inauguralDate	Inaugural date of the facilities.
keyTenants	Name of the key tenants in the facilities.
availability	Service availability of the facilities.
urbanPlanType	Type of the facilities location designated by Urban Plan.
areaClassificationType	Type of the facilities location designated by Area classification.
districtAndZoneType	Type of the facilities location designated by Districts and Zones.
landUseType	Type of the facilities location designated by Land Use Plan.
reference	Reference information of the building.
note	Additional information of the building.
surveyYear	Year of the survey.

```

<xs:element name="LargeCustomerFacilityAttribute" type="uro:LargeCustomerFacilityAttributeType"
substitutionGroup="uro:BuildingAttribute"/>
<xs:complexType name="LargeCustomerFacilityAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:BuildingAttributeType">
      <xs:sequence>
        <xs:element name="class" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="name" type="xs:string" minOccurs="0"/>
        <xs:element name="capacity" type="xs:integer" minOccurs="0"/>
        <xs:element name="owner" type="xs:string" minOccurs="0"/>
        <xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="totalStoreFloorArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="inauguralDate" type="xs:date" minOccurs="0"/>
        <xs:element name="keyTenants" type="xs:string" minOccurs="0"/>
        <xs:element name="availability" type="xs:boolean" minOccurs="0"/>
        <xs:element name="urbanPlanType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="areaClassificationType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="districtsAndZonesType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="landUseType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="reference" type="xs:string" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
        <xs:element name="surveyYear" type="xs:gYear"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

RealEstateIDAttributeType, RealEstateIDAttribute

Type	Definition
RealEstateIDAttribute	Identifier information for real estate.
Property	Definition
realEstateIDOfBuilding	Real estate identifier assigned for building.
numberOfBuildingUnitOwnership	Number of compartmentalized owners of the building.

realEstateIDOfBuildingUnitOwnership	Real estate identifiers of each compartmentalized owner of the building.
numberOfRealEstateIDOfLand	Number of compartmentalized of the land where this building is located.
realEstateIDOfLand	Real estate identifier assigned for the land where this building is located.
matchingScore	Certainty of the association between the real estate id and the building.

```

<xs:element name="RealEstateIDAttribute" type="uro:RealEstateIDAttributeType"
substitutionGroup="uro:BuildingAttribute"/>
<xs:complexType name="RealEstateIDAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:BuildingAttributeType">
      <xs:sequence>
        <xs:element name="realEstateIDOfBuilding" type="xs:string"/>
        <xs:element name="numberOfBuildingUnitOwnership" type="xs:integer" minOccurs="0"/>
        <xs:element name="realEstateIDOfBuildingUnitOwnership" type="xs:string" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="numberOfRealEstateIDOfLand" type="xs:integer" minOccurs="0"/>
        <xs:element name="realEstateIDOfLand" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="matchingScore" type="xs:integer"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

BuildingUsecaseAttributeType, BuildingUsecaseAttribute

Type	Definition
BuildingUsecaseAttribute	Data type for adding use case-specific attributes
Property	Definition
isTemporal	Classification of temporary or not temporary building.
floorHeight	Floor height. Used to determine the risk of flooding, etc.
isGroundFloorOpen	Classification of whether the ground floor of a building is vaulted or not. This information is used to determine the risk of landslides and other hazards

```

<xs:element name="BuildingUsecaseAttribute" type="uro:BuildingUsecaseAttributeType"
substitutionGroup="uro:BuildingAttribute"/>
<xs:complexType name="BuildingUsecaseAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:BuildingAttributeType">
      <xs:sequence>
        <xs:element name="isTemporal" type="xs:boolean" minOccurs="0"/>
        <xs:element name="floorHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="isGroundFloorOpen" type="xs:boolean" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.1.2 Building properties for facility management

While the data types shown in Figure1-2 describe general characteristics for buildings, the data types shown in Figure1-3 describe characteristics used for facility management in specific domains, such as river management or port management. These data types are not specific to buildings but are applicable to other structures such as bridges, tunnels and other city objects. `uro::FacilityAttribute` is a root class of detailed information for facility management and see 4.2.16 for each subtypes.

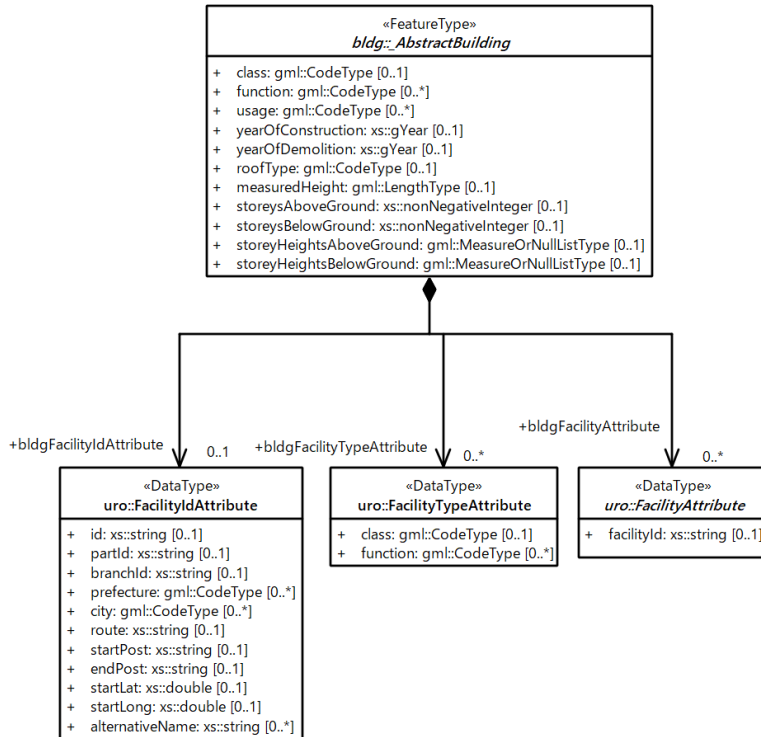


Figure1-3 UML diagram of extended properties of AbstractBuilding for facility management

Extended properties of *_AbstractBuilding*

Property	Definition
bldgFacilityIdAttribute	Identification information for facility management specific to the domain.
bldgFacilityTypeAttribute	Domain information of the facility.
bldgFacilityAttribute	Information stored for facility management.

```

<xs:element name="bldgFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgFacilityAttribute" type="uro:FacilityAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
  
```

4.2.1.3 Building properties for data conversion

Figure1-4 shows data types for data conversion. *uro::DmAttribute* is a data type for data conversion with 2D maps, *uro::IfcAttribute* is a data type for data conversion with IFC building model and *uro::IndoorAttribute* is a data type for data conversion with indoor maps. These data types are defined based on the existing standards or data product specifications. See 0 through 0 for details of data types for data conversion.

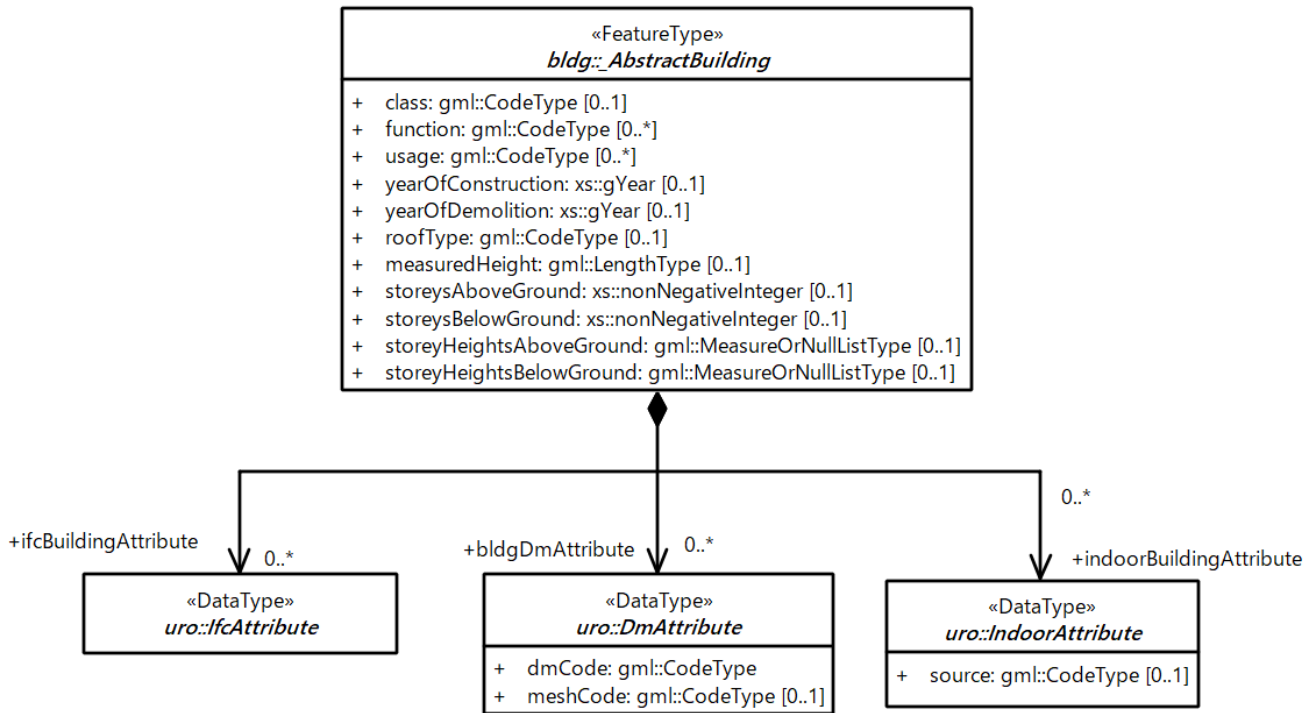


Figure1-4 UML diagram of extended properties of AbstractBuilding for data conversion

Extended properties of *_AbstractBuilding*

Property	Definition
bldgDmAttribute	Information contained in Digital Mapping Data.
ifcBuildingAttribute	Information contained in IFC Building Model.
inforBuildingAttribute	Information contained in indoor map.

```

<xs:element name="bldgDmAttribute" type="uro:DmAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="ifcBuildingAttribute" type="uro:IfcAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="indoorBuildingAttribute" type="uro:IndoorAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
  
```

4.2.2 Extended properties of Tunnel

This module defines groups of thematic attributes for a tunnel, which are used as types of tunnel properties. Each tunnel property extended in this module is declared as a member of the general property of *tun::_AbstractTunnel*. Groups of thematic attributes for a tunnel are shown in Figure1-5.

See 4.2.12 and 4.2.14 through 0 for details of common data types describing construction characteristics, disaster risk, facility management information and 2D maps.

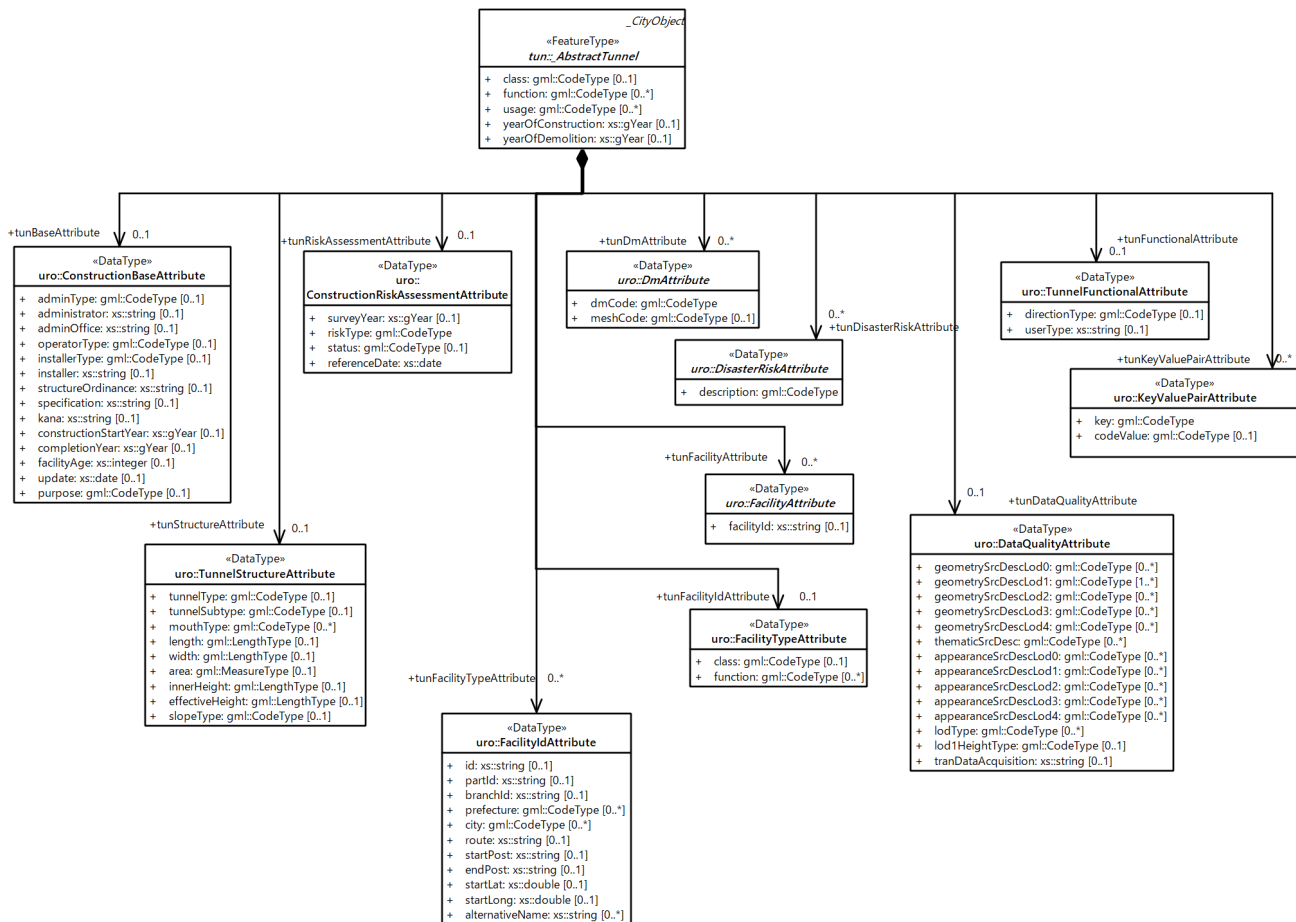


Figure1-5 UML diagram of extended properties of AbstractTunnel

Extended properties of _AbstractTunnel

Property	Definition
tunBaseAttribute	Properties containing basic information of the tunnel.
tunStructureAttribute	Properties regarding tunnel structure.
tunFunctionalAttribute	Properties regarding tunnel function and usage.
tunRiskAssessmentAttribute	Properties regarding the result of tunnel risk assessment.
tunDisasterRiskAttribute	Properties regarding disaster risk based on the location.
tunDmAttribute	Properties for 2D map conversion.
tunDataQualityAttribute	Data quality properties including data resources.
tunFacilityIdAttribute	Properties regarding tunnel identification .
tunFacilityTypeAttribute	Properties regarding facility management.
tunFacilityAttribute	Detailed properties for facility management
tunKeyValuePairAttribute	Additional code attribute for describing attribute which is not covered by other attributes defined by i-UR and CityGML.

```

<xs:element name="tunBaseAttribute" type="uro:ConstructionBaseAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunStructureAttribute" type="uro:TunnelStructureAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunFunctionalAttribute" type="uro:TunnelFunctionalAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunRiskAssessmentAttribute" type="uro:ConstructionRiskAssessmentAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunDisasterRiskAttribute" type="uro:DisasterRiskAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
  
```

```

<xs:element name="tunDmAttribute" type="uro:DmAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunDataQualityAttribute" type="uro:DataQualityAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunFacilityAttribute" type="uro:FacilityAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType"
substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>

```

TunnelStructureAttributeType, TunnelStructureAttribute

Type	Definition
TunnelFunctionalAttribute	Properties regarding tunnel structure.
Property	Definition
tunnelType	Type of tunnel.
tunnelSubtype	Detail type of tunnel.
mouthType	Mouth type of tunnel.
length	Tunnel length.
width	Tunnel Width
area	Area of tunnel.
innerHeight	Inner height of tunnel.
effectiveHeight	Effective height of tunnel.
slopeType	Slope type.

```

<xs:complexType name="TunnelStructureAttributeType">
<xs:sequence>
<xs:element name="tunnelType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="tunnelSubtype" type="gml:CodeType" minOccurs="0"/>
<xs:element name="mouthType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/></xs:element>
<xs:element name="length" type="gml:LengthType" minOccurs="0"/>
<xs:element name="width" type="gml:LengthType" minOccurs="0"/>
<xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="innerHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="effectiveHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="slopeType" type="gml:CodeType" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
<xs:element name="TunnelFunctionalAttribute" type="uro:TunnelFunctionalAttributeType"/>

```

TunnelFunctionalAttributeType, TunnelFunctionalAttribute

Type	Definition
TunnelFunctionalAttribute	Properties regarding tunnel function and usage.
Property	Definition
directionType	Available passage direction
userType	Type of tunnel users.

```

<xs:complexType name="TunnelFunctionalAttributeType">
<xs:sequence>
<xs:element name="directionType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="userType" type="gml:CodeType" minOccurs="0"/>

```

```

</xs:sequence>
</xs:complexType>
<xs:element name="FacilityAttribute" type="uro:FacilityAttributeType" abstract="true"/>

```

4.2.3 Extended properties of Bridge

This module defines groups of thematic attributes for a bridge, which are used as types of bridge properties. Each bridge property extended in this module is declared as a member of the general property of *brid::_AbstractBridge*. Groups of thematic attributes for a bridge are shown in Figure1-5.

See 4.2.12 and 4.2.14 through 0 for details of common data types describing construction characteristics, disaster risk, facility management information and 2D maps.

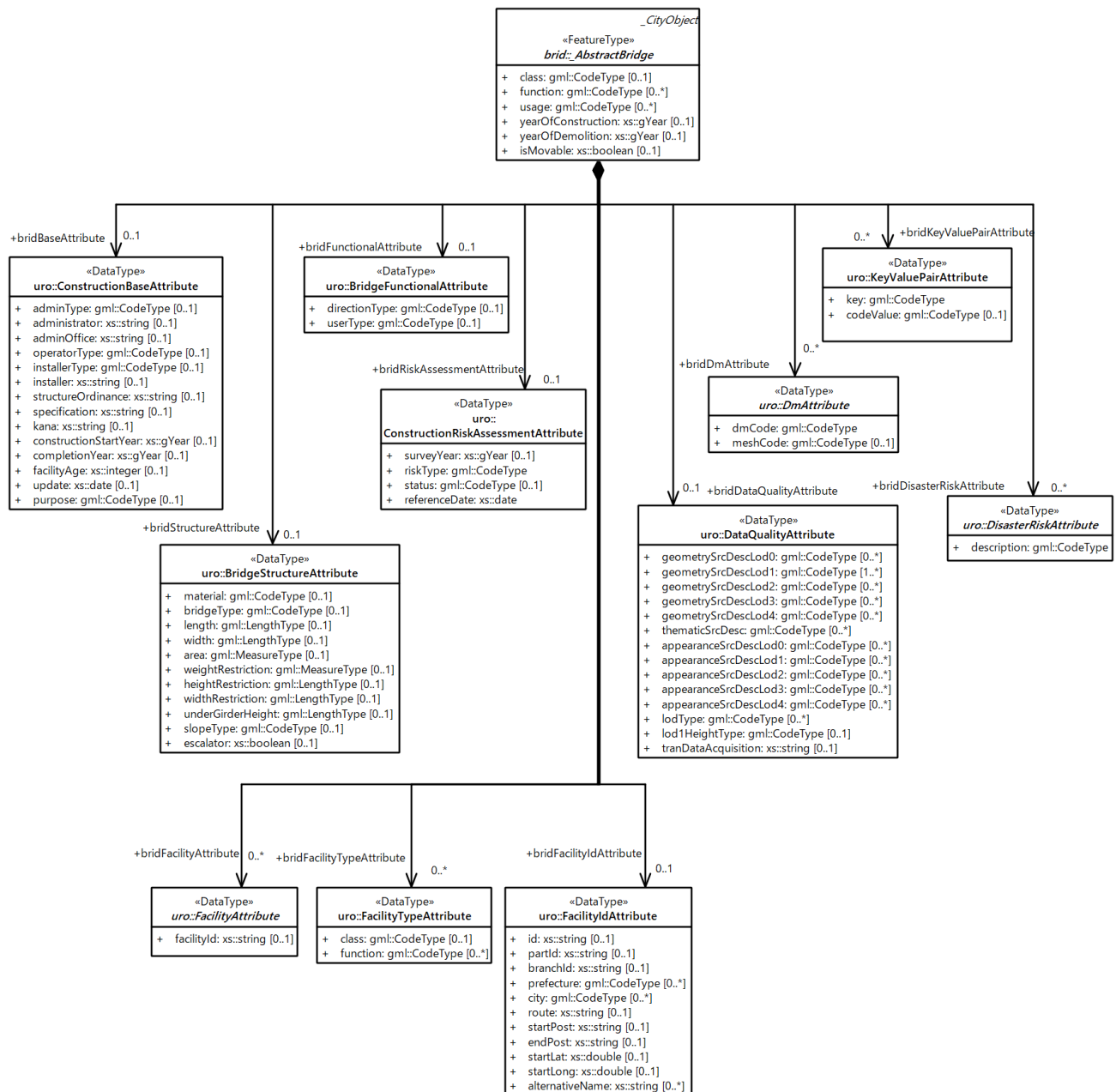


Figure1-6 UML diagram of extended properties of AbstractBridge

Extended properties of *_AbstractBridge*

Property	Definition
bridBaseAttribute	Properties containing basic information of the bridge.
bridStructureAttribute	Properties regarding bridge structure.
bridFunctionalAttribute	Properties regarding bridge function and usage.
bridRiskAssessmentAttribute	Properties regarding the result of tunnel risk assessment.
bridDisasterRiskAttribute	Properties regarding disaster risk based on the location.
bridDmAttribute	Properties for 2D map conversion.
bridDataQualityAttribute	Data quality properties including data resources.
bridFacilityIdAttribute	Properties regarding bridge identification .
bridFacilityTypeAttribute	Properties regarding facility management.
bridFacilityAttribute	Detailed properties for facility management
bridKeyValuePairAttribute	Additional code attribute for describing attribute which is not covered by other attributes defined by i-UR and CityGML.

```

<xs:element name="bridBaseAttribute" type="uro:ConstructionBaseAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />
<xs:element name="bridFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />
<xs:element name="bridFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />
<xs:element name="bridFacilityAttribute" type="uro:FacilityAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />
<xs:element name="bridStructureAttribute" type="uro:BridgeStructureAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />
<xs:element name="bridFunctionalAttribute" type="uro:BridgeFunctionalAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />
<xs:element name="bridRiskAssessmentAttribute" type="uro:ConstructionRiskAssessmentAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />
<xs:element name="bridDisasterRiskAttribute" type="uro:DisasterRiskAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />
<xs:element name="bridDmAttribute" type="uro:DmAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />
<xs:element name="bridDataQualityAttribute" type="uro:DataQualityAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />
<xs:element name="bridKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType"
substitutionGroup="brid: _GenericApplicationPropertyOfAbstractBridge" />

```

BridgeStructureAttributeType, BridgeStructureAttribute

Type	Definition
BridgeFunctionalAttribute	Properties regarding bridge structure.
Property	Definition
material	Main material of the bridge.
bridgeType	Type of bridge.
bridgeSubtype	Detail type of tunnel.
length	Bridge length.
width	Bridge Width
area	Area of bridge.
weightRestriction	Weight restriction for vehicles.
heightRestriction	Height restriction for vehicles.
widthRestriction	Width restriction for vehicles.
underGirderHeight	Vehicle height restriction for under girder.
slopeType	Slope type.
escalator	Availability of lifting equipment.

```

<xs:complexType name="BridgeStructureAttributeType">
  <xs:sequence>
    <xs:element name="material" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="bridgeType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
    <xs:element name="weightRestriction" type="gml:MeasureType" minOccurs="0"/>
    <xs:element name="heightRestriction" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="widthRestriction" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="underGirderHeight" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="slopeType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="escalator" type="xs:boolean" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="BridgeFunctionalAttribute" type="uro:BridgeFunctionalAttributeType"/>

```

BridgeFunctionalAttributeType, BridgeFunctionalAttribute

Type	Definition
BridgeFunctionalAttribute	Properties regarding bridge function and usage.
Property	Definition
directionType	Available passage direction
userType	Type of tunnel users.

```

<xs:complexType name="BridgeFunctionalAttributeType">
  <xs:sequence>
    <xs:element name="directionType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="userType" type="gml:CodeType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="TunnelStructureAttribute" type="uro:TunnelStructureAttributeType"/>

```

4.2.4 Extended properties of WaterBody

This module defines groups of thematic attributes for a waterbody, which are used as types of waterbody properties. Each waterbody property extended in this module is declared as a member of the general property of *wtr::WaterBody*. Groups of thematic attributes for a waterbody are shown in Figure1-5.

See 4.2.12 and 4.2.14 through 0 for details of common data types describing construction characteristics, disaster risk, facility management information and 2D maps.

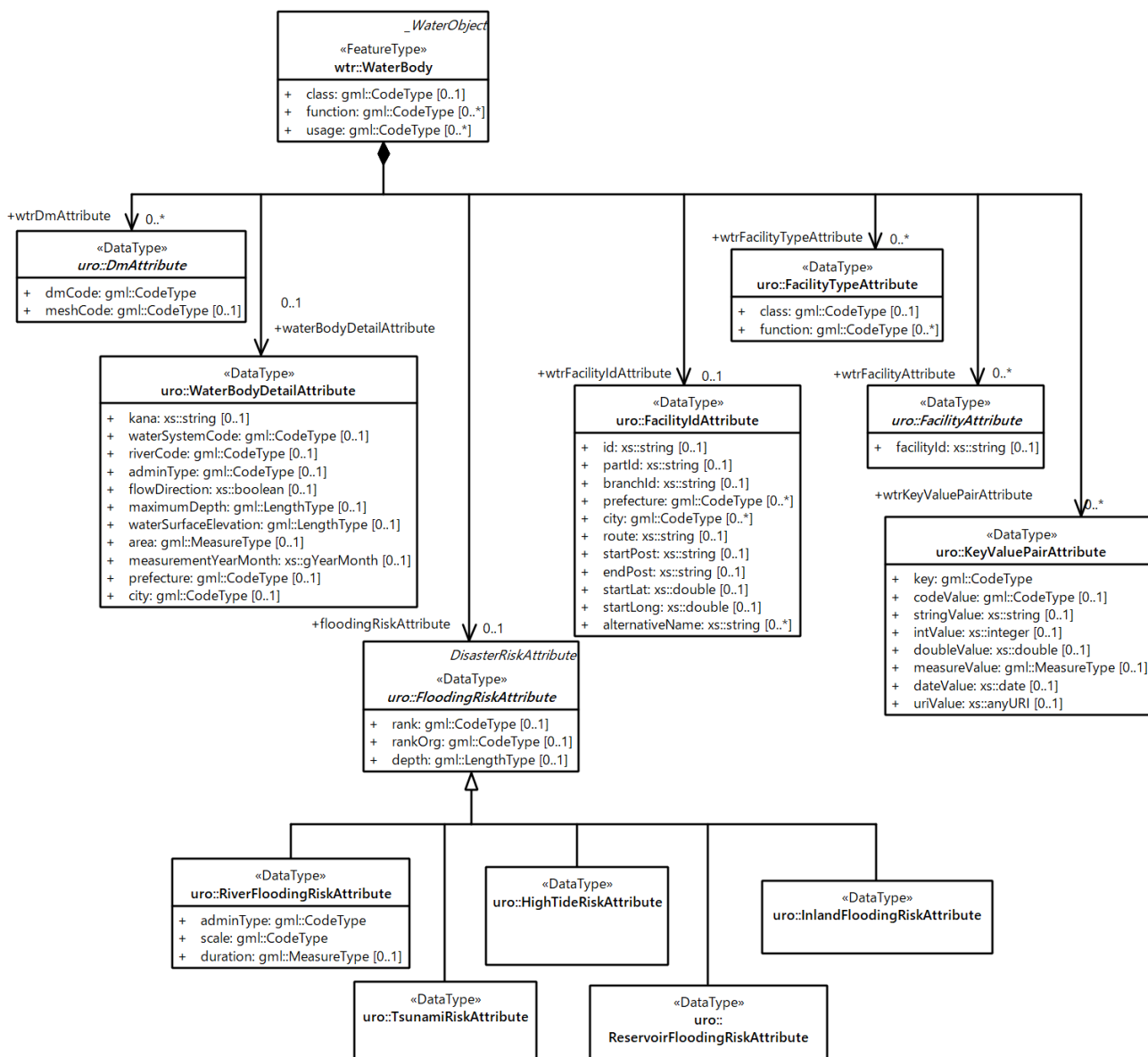


Figure1-7 UML diagram of extended properties of WaterBody

Extended properties of WaterBody

Property	Definition
waterBodyDetailAttribute	Detailed information on waterbody.
floodingRiskAttribute	Properties of flooded waterbody.
wtrFacilityIdAttribute	Properties regarding waterbody identification .
wtrFacilityTypeAttribute	Properties regarding facility management.
wtrFacilityAttribute	Detailed properties for facility management
wtrDmAttribute	Properties for 2D map conversion.


```

<xs:element name="waterBodyDetailAttribute" type="uro:WaterBodyDetailAttributePropertyType"
substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody"/>
<xs:element name="floodingRiskAttribute" type="uro:WaterBodyFloodingRiskAttributePropertyType"
substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody"/>
<xs:element name="wtrFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType"
substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody"/>
<xs:element name="wtrFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType"
substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody"/>
<xs:element name="wtrFacilityAttribute" type="uro:FacilityAttributePropertyType"
substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody"/>
<xs:element name="wtrDmAttribute" type="uro:DmAttributePropertyType"
substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody"/>

```

uro::WaterBodyDetailAttribute contains information about rivers, lakes and other waterbodies.

WaterBodyDetailAttributeType, WaterBodyDetailAttribute

Type	Definition
WaterBodyDetailAttribute	Detailed information on waterbody.
Property	Definition
kana	Name in kana.
waterSystemCode	Code of water system.
riverCode	Code of the river.
adminType	Type of river administrator.
flowDirection	Direction of the river flow.
maximumDepth	Maximum depth.
waterSurfaceElevation	Water surface elevation.
area	River area.
measurementYearMonth	Date of water surface elevation measurement.
prefecture	Prefectures through which the river passes.
city	Cities through which the river passes.

```

<xs:element name="WaterBodyDetailAttribute" type="uro:WaterBodyDetailAttributeType"/>
<xs:sequence>
  <xs:element name="kana" type="xs:string" minOccurs="0"/>
  <xs:element name="waterSystemCode" type="gml:CodeType" minOccurs="0"/>
  <xs:element name="riverCode" type="gml:CodeType" minOccurs="0"/>
  <xs:element name="adminType" type="gml:CodeType" minOccurs="0"/>
  <xs:element name="flowDirection" type="xs:boolean" minOccurs="0"/>
  <xs:element name="maximumDepth" type="gml:LengthType" minOccurs="0"/>
  <xs:element name="waterSurfaceElevation" type="gml:LengthType" minOccurs="0"/>
  <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
  <xs:element name="measurementYearMonth" type="xs:gYearMonth" minOccurs="0"/>
  <xs:element name="prefecture" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
  <xs:element name="city" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>

```

A uro::WaterBodyFloodingRiskAttribute contains flood hazards. Floods are caused by a variety of natural phenomena. The i-UR defines an abstract data type for describing flood hazards and four subtypes for specific flood type.

WaterBodyFloodingRiskAttributeType, WaterBodyFloodingRiskAttribute

Type	Definition
WaterBodyFloodingRiskAttribute	Abstract data type for describing the risk of inundation by floods.
Property	Definition
description	Description of disaster risks.
rank	Classification of the degree of inundation based on standardized codes.
rankOrg	Classification of the degree of inundation based on the codes set by municipality.
depth	Classification of the degree of inundation based on standardized codes.

```
<xs:element name="WaterBodyFloodingRiskAttribute" type="uro:WaterBodyFloodingRiskAttributeType" abstract="true"
substitutionGroup="uro:WaterBodyAttribute"/>
<xs:complexType name="WaterBodyFloodingRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:WaterBodyAttributeType">
      <xs:sequence>
        <xs:element name="description" type="gml:CodeType"/>
        <xs:element name="rank" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="rankOrg" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

WaterBodyRiverFloodingRiskAttributeType, WaterBodyRiverFloodingRiskAttribute

Type	Definition
WaterBodyRiverFloodingRiskAttribute	Data type for describing the degree of inundation when the inundation area is a river flood.
Property	Definition
adminType	Type of organization that designated the expected inundation area.
scale	Type of simulation conditions.
duration	Expected duration of inundation.

```
<xs:element name="WaterBodyRiverFloodingRiskAttribute" type="uro:WaterBodyRiverFloodingRiskAttributeType"
substitutionGroup="uro:WaterBodyFloodingRiskAttribute"/>
<xs:complexType name="WaterBodyRiverFloodingRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:WaterBodyFloodingRiskAttributeType">
      <xs:sequence>
        <xs:element name="admin" type="gml:CodeType"/>
        <xs:element name="scale" type="gml:CodeType"/>
        <xs:element name="duration" type="gml:MeasureType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

WaterBodyTsunamiFloodingRiskAttributeType, WaterBodyTsunamiFloodingRiskAttribute

Type	Definition
------	------------

WaterBodyTsunamiFloodingRiskAttribute	Data type for describing the degree of inundation when the inundation area is a flood caused by a tsunami.
---------------------------------------	--

```
<xs:element name="WaterBodyTsunamiFloodingRiskAttribute" type="uro:WaterBodyTsunamiFloodingRiskAttributeType"
substitutionGroup="uro:WaterBodyFloodingRiskAttribute">
</xs:element>
<xs:complexType name="WaterBodyTsunamiFloodingRiskAttributeType">
<xs:complexContent>
<xs:extension base="uro:WaterBodyFloodingRiskAttributeType"/>
</xs:complexContent>
</xs:complexType>
```

WaterBodyHighTideFloodingRiskAttributeType, WaterBodyHighTideFloodingRiskAttribute

Type	Definition
WaterBodyHighTideFloodingRiskAttribute	Data type for describing the degree of inundation when the inundation area is a flood caused by a high tide.

```
<xs:element name="WaterBodyHighTideFloodingRiskAttribute" type="uro:WaterBodyHighTideFloodingRiskAttributeType"
substitutionGroup="uro:WaterBodyFloodingRiskAttribute">
</xs:element>
<xs:complexType name="WaterBodyHighTideFloodingRiskAttributeType">
<xs:complexContent>
<xs:extension base="uro:WaterBodyFloodingRiskAttributeType"/>
</xs:complexContent>
</xs:complexType>
```

WaterBodyInlandFloodingRiskAttributeType, WaterBodyInlandFloodingRiskAttribute

Type	Definition
WaterBodyInlandFloodingRiskAttributeType	Data type for describing the degree of inundation when the inundation area is an inland flood.

```
<xs:element name="WaterBodyInlandFloodingRiskAttribute" type="uro:WaterBodyInlandFloodingRiskAttributeType"
substitutionGroup="uro:WaterBodyFloodingRiskAttribute"/>
<xs:complexType name="WaterBodyInlandFloodingRiskAttributeType">
<xs:complexContent>
<xs:extension base="uro:WaterBodyFloodingRiskAttributeType"/>
</xs:complexContent>
</xs:complexType>
```

4.2.5 Extended properties of Transportation Object

This module defines groups of thematic attributes for a transportation object, which are used as types of transportation object properties. Each transportation object property extended in this module is declared as a member of the general property of *tran::_TransportationObject* or its subtypes. Groups of thematic attributes for a transportation object are shown in Figure 1-8.

See 4.2.16 and 0 for details of common data types describing facility management information and 2D maps.

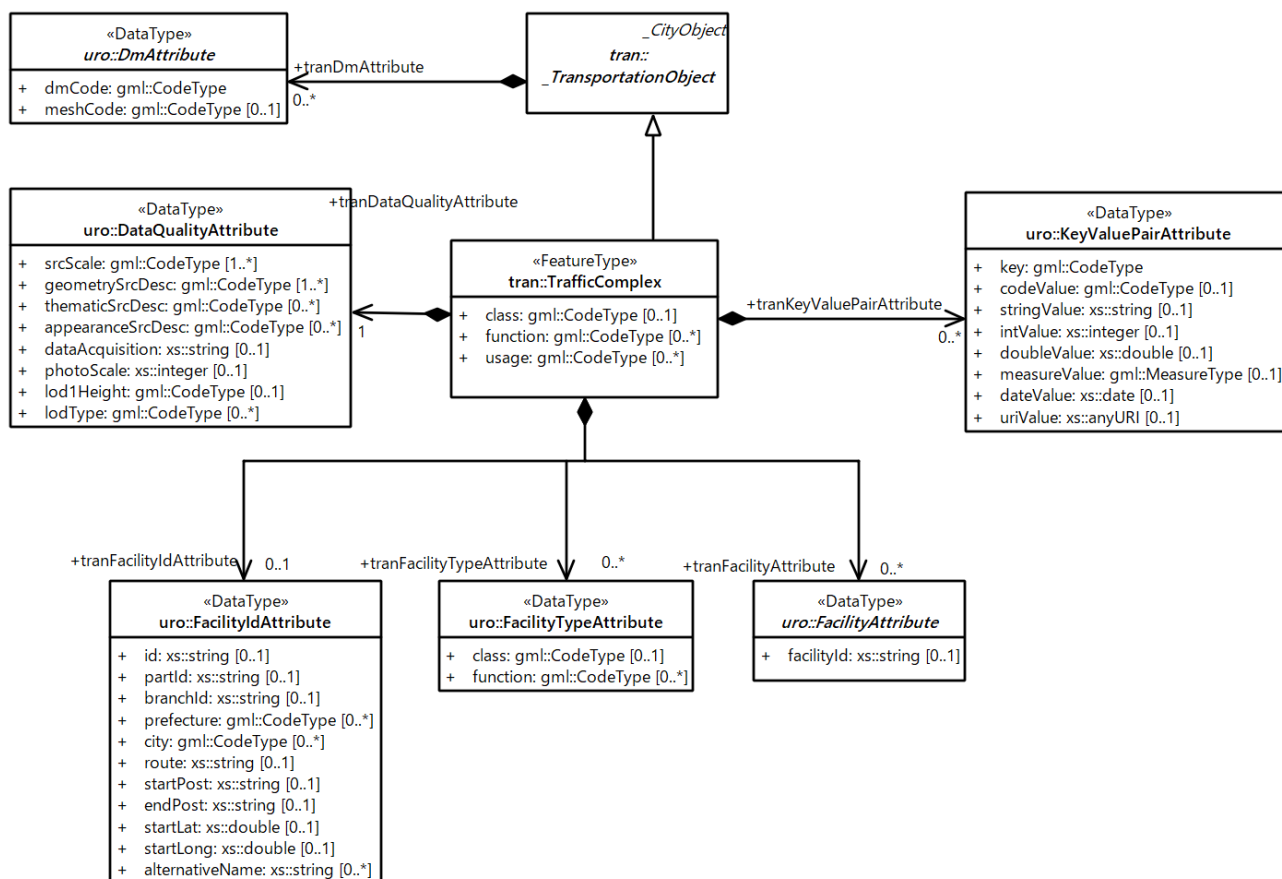


Figure 1-8 UML diagram of extended properties of TransportationObject and TransportationComplex

Extended properties of *_TransportationObject*

Property	Definition
tranDmAttribute	Information contained in Digital Mapping Data.

```

<xs:element name="tranDmAttribute" type="uro:DmAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfTransportationObject"/>

```

Extended properties of *TrafficComplex*

Property	Definition
tranDataQualityAttribute	Data quality properties including data resources.
tranFacilityIdAttribute	Properties regarding object identification .
tranFacilityTypeAttribute	Properties regarding facility management.
tranFacilityAttribute	Detailed properties for facility management

```

<xs:element name="tranFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfTransportationComplex"/>
<xs:element name="tranFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfTransportationComplex"/>
<xs:element name="tranFacilityAttribute" type="uro:FacilityAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfTransportationComplex"/>
<xs:element name="tranDataQualityAttribute" type="uro:TransportationDataQualityAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfTransportationComplex"/>

```

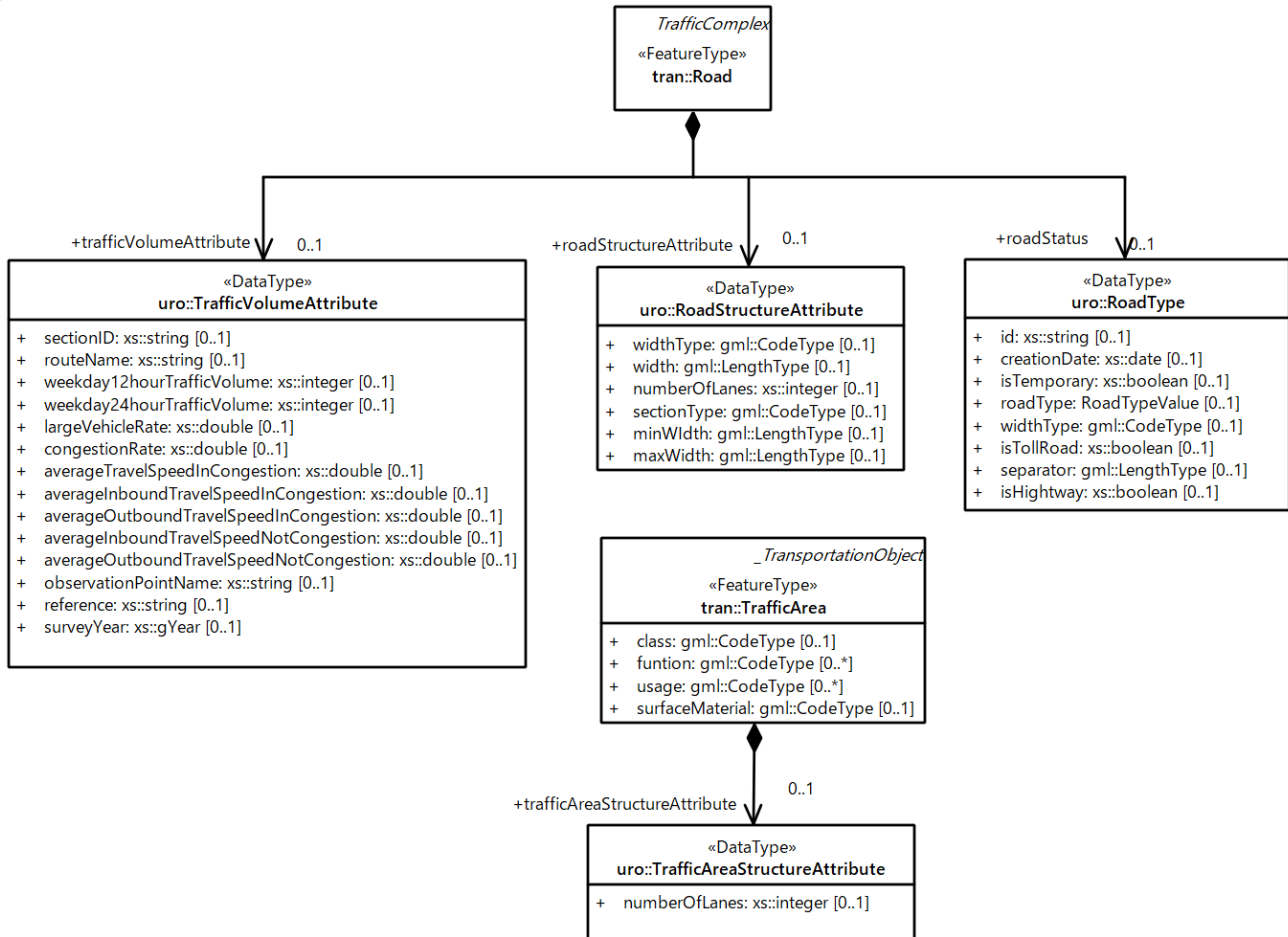


Figure1-9 UML diagram of extended properties of Road

Extended Properties of Road

Property	Definition
trafficVolumeAttribute	Information on traffic volume on roads.
roadStructureAttribute	Information on road structure.
roadStatus	Information on road status.

```

<xs:element name="trafficVolumeAttribute" type="uro:TrafficVolumeAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfRoad"/>
<xs:element name="roadStructureAttribute" type="uro:RoadStructureAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfRoad"/>
<xs:element name="roadStatus" type="uro:RoadTypePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfRoad"/>

```

A *uro::trafficVolumeAttribute* contains information on traffic volume.

TrafficVolumeAttributeType, TrafficVolumeAttribute

Type	Definition
TrafficVolumeAttribute	The number of vehicles crossing a section of road per unit time .
Property	Definition
sectionID	A number assigned to the section, which is the unit of the survey in the Basic Traffic Survey.
weekday12hourTrafficVolume	The number of vehicles crossing a section of road per 12 hours on average weekday.
weekday24hourTrafficVolume	The number of vehicles crossing a section of road per 24 hours on average weekday.
largeVehicleRate	The percentage of the number of large vehicles within the total traffic volume.
congestionRate	The ratio of 24-hour traffic volume to the design criteria.
averageTravelSpeedInCongestion	Average travel speed in the morning rush hour traffic and the evening rush hour traffic.
averageInboundTravelSpeedInCongestion	Average inbound travel speed in the morning rush hour traffic and the evening rush hour traffic.
averageOutboundTravelSpeedInCongestion	Average outbound travel speed during the congestion period.
observationPointName	Name of the observation location.
reference	Reference information of the observation point.
surveyYear	The year when the traffic survey was performed.

```

<xs:element name="TrafficVolumeAttribute" type="uro:TrafficVolumeAttributeType"
substitutionGroup="uro:RoadAttribute"/>
<xs:complexType name="TrafficVolumeAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:RoadAttributeType">
      <xs:sequence>
        <xs:element name="sectionID" type="xs:string" minOccurs="0"/>
        <xs:element name="weekday12hourTrafficVolume" type="xs:integer" minOccurs="0"/>
        <xs:element name="weekday24hourTrafficVolume" type="xs:integer" minOccurs="0"/>
        <xs:element name="largeVehicleRate" type="xs:double" minOccurs="0"/>
        <xs:element name="congestionRate" type="xs:double" minOccurs="0"/>
        <xs:element name="averageTravelSpeedInCongestion" type="xs:double" minOccurs="0"/>
        <xs:element name="averageInboundTravelSpeedInCongestion" type="xs:double" minOccurs="0"/>
        <xs:element name="averageOutboundTravelSpeedInCongestion" type="xs:double" minOccurs="0"/>
        <xs:element name="observationPointName" type="xs:string" minOccurs="0"/>
        <xs:element name="reference" type="xs:string" minOccurs="0"/>
        <xs:element name="surveyYear" type="xs:gYear" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

A *uro::roadStructureAttribute* contains structural features of the road such as width and a number of Lanes. This property enables users to perform more advanced traffic analysis with LOD 1 model in which geometries are simplified.

RoadStructureAttributeType, RoadStructureAttribute

Type	Definition
RoadStructureAttribute	Attributes related to road structure.
Property	Definition
widthType	Classification divided by the width of the road.
width	The width of a road. The width of the entire road structure, including not only the roadway and sidewalk, but also shoulders, tree planting zones, median zones, etc.

numberOfLanes	Total number of lanes in the road.
sectionType	Classification by road structure: section, intersection, tunnel, bridge, etc.

```
<xs:element name="RoadStructureAttribute" type="uro:RoadStructureAttributeType"
substitutionGroup="uro:RoadAttribute"/>
<xs:complexType name="RoadStructureAttributeType">
<xs:complexContent>
<xs:extension base="uro:RoadAttributeType">
<xs:sequence>
<xs:element name="widthType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="width" type="gml:LengthType" minOccurs="0"/>
<xs:element name="numberOfLanes" type="xs:integer" minOccurs="0"/>
<xs:element name="sectionType" type="gml:CodeType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

uro::RoadType is a data type class for describing road situation.

RoadTypeType, RoadType

Type	Definition
RoadType	Data type for describing road situation.
Property	Definition
id	Object identification of the road.
creationDate	Date of creation
isTemporary	Flag whether the road is temporary or not.
roadType	Type of the road.
widthType	Width range of the road.
isTollRoad	Flag whether the road is toll road or not.
separator	Width range of separator
isHighway	Flag whether the road is highway or not.

```
<xs:element name="RoadType" type="uro:RoadTypeType"/>
<xs:complexType name="RoadTypeType">
<xs:sequence>
<xs:element name="id" type="xs:string" minOccurs="0"/>
<xs:element name="creationDate" type="xs:date" minOccurs="0"/>
<xs:element name="isTemporary" type="xs:boolean" minOccurs="0"/>
<xs:element name="roadType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="widthType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="isTollRoad" type="xs:boolean" minOccurs="0"/>
<xs:element name="separator" type="gml:LengthType" minOccurs="0"/>
<xs:element name="isHighWay" type="xs:boolean" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
```

Extended Properties of TrafficArea

Property	Definition
trafficAreaStructureAttribute	Information on traffic area structure.

```
<xs:element name="trafficAreaStructureAttribute" type="uro:TrafficAreaStructureAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfTrafficArea"/>
```

TrafficAreaStructureAttributeType, TrafficAreaStructureAttribute

Type	Definition
TrafficAreaStructureAttribute	Attributes related to road structure of traffic area.
Property	Definition
numberOfLanes	Total number of lanes in the traffic area.

```
<xs:element name="TrafficAreaStructureAttribute" type="uro:TrafficAreaStructureAttributeType"
substitutionGroup="uro:TrafficAreaAttribute"/>
<xs:complexType name="TrafficAreaStructureAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:TrafficAreaAttributeType">
      <xs:sequence>
        <xs:element name="numberOfLanes" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

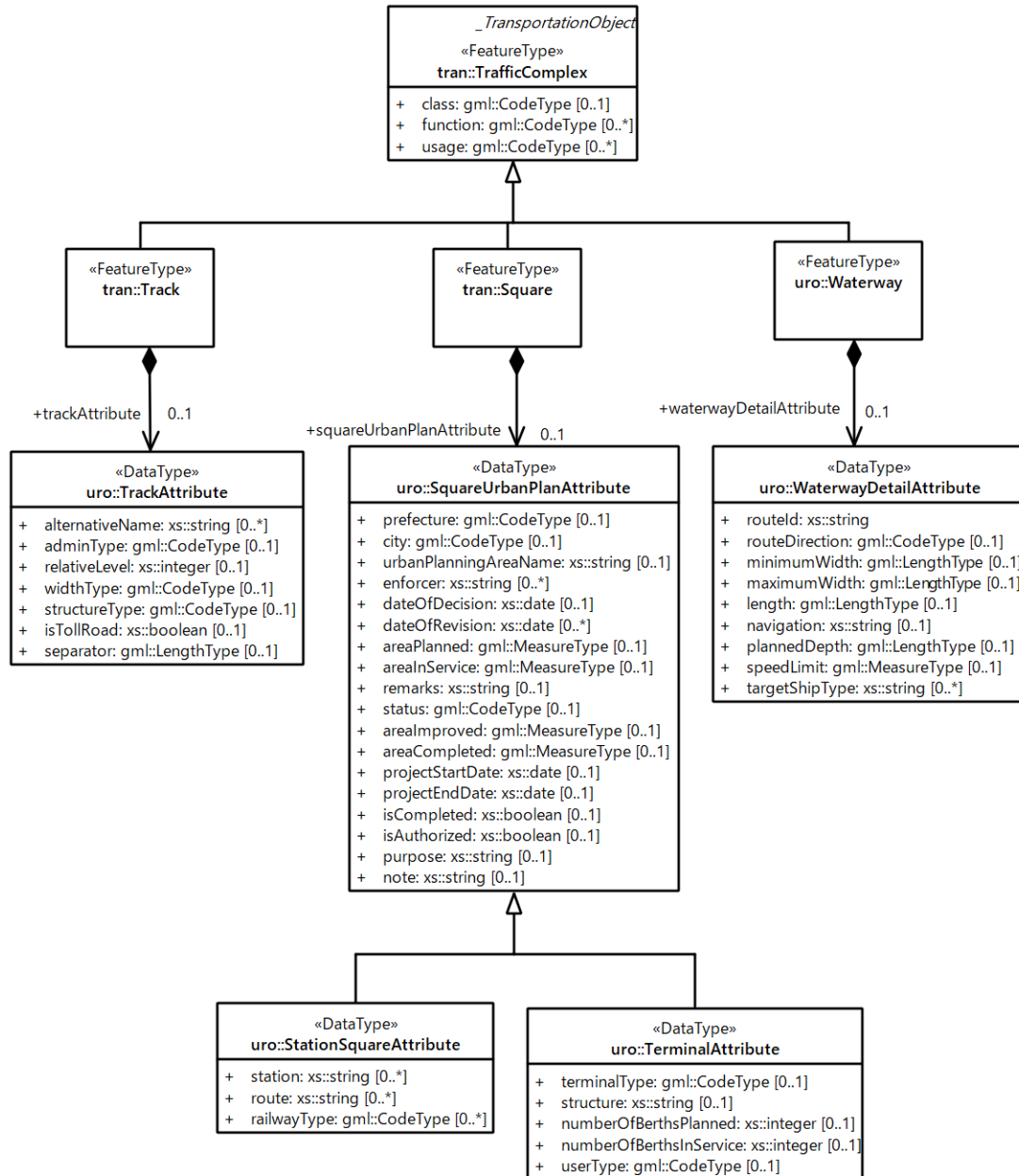



Figure1-10 UML diagram of extended properties of Other Transportation Object

Extended properties of Track

Property	Definition
trackAttribute	Detailed properties of track object.

```
<xs:element name="trackAttribute" type="uro:TrackAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfTrack"/>
```

TrackAttributeType, TrackAttribute

Type	Definition
TrackAttribute	Detailed properties of track object.
Property	Definition
alternativeName	Alternative names.
adminType	Type of the administrator.

relativeLevel	Relative level of the track.
widthType	Width range of the track.
structureType	Type of track structure.
isTollRoad	Flag whether the track is toll road or not.
separatorType	Width range of separator

```
<xs:element name="TrackAttribute" type="uro:TrackAttributeType"/>
<xs:complexType name="TrackAttributeType">
  <xs:sequence>
    <xs:element name="alternativeName" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="adminType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="relativeLevel" type="xs:integer" minOccurs="0"/>
    <xs:element name="widthType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="structureType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="isTollRoad" type="xs:boolean" minOccurs="0"/>
    <xs:element name="separator" type="gml:LengthType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

Extended properties of Square

Property	Definition
squareUrbanPlanAttribute	Detailed properties of square object regarding urban plan.

```
<xs:element name="squareUrbanPlanAttribute" type="uro:SquareUrbanPlanAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfSquare"/>
```

SquareUrbanPlanAttributeType, SquareUrbanPlanAttribute

Type	Definition
SquareUrbanPlanAttribute	Detailed properties of square object regarding urban plan.
Property	Definition
prefecture	Prefecture name where the square is located.
city	City name where the square is located.
urbanPlanningAreaName	Name of urbai1 planning area.
enforcer	Name of enforcer.
dateOfDecision	Urbai1 planning decision date.
dateOfRevision	Urbai1 planning revision date.
areaPlanned	Planned area.
areaInService	Area in service.
remarks	Remarks on urban plan.
status	Status of urban plan
areaImproved	Area improved.
areaCompleted	Area completed.
projectStartDate	The day the project began.
projectEndDate	The day the project ended.
isCompleted	Flag whether the project is complete or not
isAuthorized	Flag whether the project is authorized
purpose	Purpose of the square
note	Other notes.

```
<xs:element name="SquareUrbanPlanAttribute" type="uro:SquareUrbanPlanAttributeType"/>
<xs:complexType name="SquareUrbanPlanAttributeType">
```

```

<xs:sequence>
  <xs:element name="prefecture" type="gml:CodeType" minOccurs="0"/>
  <xs:element name="city" type="gml:CodeType" minOccurs="0"/>
  <xs:element name="urbanPlanningAreaName" type="xs:string" minOccurs="0"/>
  <xs:element name="enforcer" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
  <xs:element name="dateOfDecision" type="xs:date" minOccurs="0"/>
  <xs:element name="dateOfRevision" type="xs:date" minOccurs="0"/>
  <xs:element name="areaPlanned" type="gml:MeasureType" minOccurs="0"/>
  <xs:element name="areaInService" type="gml:MeasureType" minOccurs="0"/>
  <xs:element name="remarks" type="xs:string" minOccurs="0"/>
  <xs:element name="status" type="gml:CodeType" minOccurs="0"/>
  <xs:element name="areaImproved" type="gml:MeasureType" minOccurs="0"/>
  <xs:element name="areaCompleted" type="gml:MeasureType" minOccurs="0"/>
  <xs:element name="projectStartDate" type="xs:date" minOccurs="0"/>
  <xs:element name="projectEndDate" type="xs:date" minOccurs="0"/>
  <xs:element name="isCompleted" type="xs:boolean" minOccurs="0"/>
  <xs:element name="isAuthorized" type="xs:boolean" minOccurs="0"/>
  <xs:element name="purpose" type="xs:string" minOccurs="0"/>
  <xs:element name="note" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

StationSquareAttributeType, StationSquareAttribute

Type	Definition
StationSquareAttribute	Detailed properties of station square object regarding urban plan.
Property	Definition
station	Station name.
route	Name of railway routes.
railwayType	Types of railways.

```

<xs:element name="StationSquareAttribute" type="uro:StationSquareAttributeType"
substitutionGroup="uro:SquareUrbanPlanAttribute"/>
<xs:complexType name="StationSquareAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:StationSquareAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="StationSquareAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:SquareUrbanPlanAttributeType">
      <xs:sequence>
        <xs:element name="station" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="route" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="railwayType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

TerminalAttributeType, TerminalAttribute

Type	Definition
TerminalAttribute	Detailed properties of vehicle terminal object regarding urban plan.
Property	Definition
terminalType	Type of the vehicle terminal.

structure	Structure type of the vehicle terminal.
numberOfBerthsPlanned	Number of berths planned.
numberOfBerthsInService	Number of berths in service.
userType	Vehicle type of terminal users.

```

<xs:element name="TerminalAttribute" type="uro:TerminalAttributeType"
substitutionGroup="uro:SquareUrbanPlanAttribute"/>
<xs:complexType name="TerminalAttributeType">
<xs:complexContent>
<xs:extension base="uro:SquareUrbanPlanAttributeType">
<xs:sequence>
<xs:element name="terminalType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="structure" type="xs:string" minOccurs="0"/>
<xs:element name="numberOfBerthsPlanned" type="xs:integer" minOccurs="0"/>
<xs:element name="numberOfBerthsInService" type="xs:integer" minOccurs="0"/>
<xs:element name="userType" type="gml:CodeType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

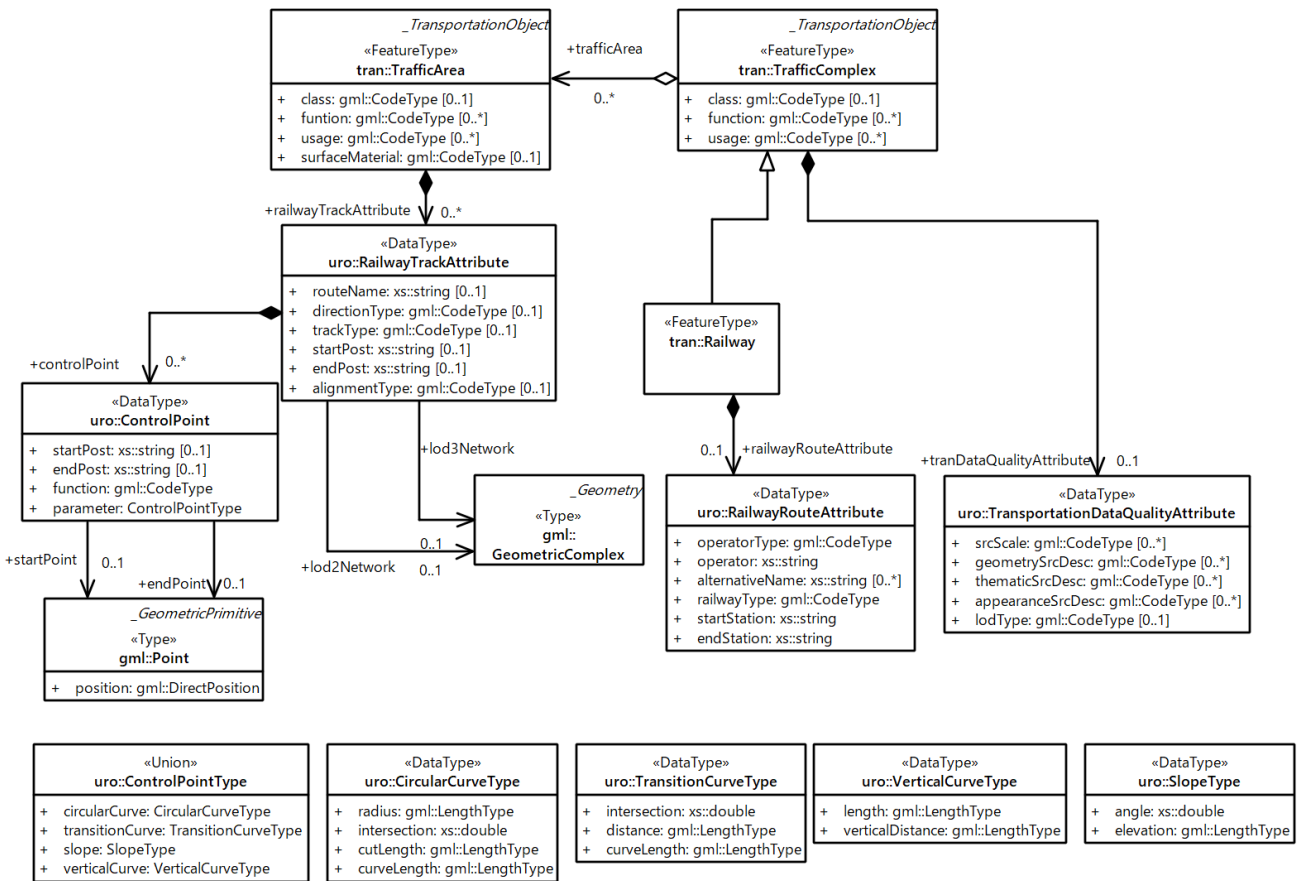


Figure1-11 UML diagram of extended properties of Railway

Extended properties of Railway

Property	Definition
railwayRouteAttribute	Detailed properties of railway.

```
<xs:element name="railwayRouteAttribute" type="uro:RailwayRouteAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfRailway"/>
```

RailwayRouteAttributeType, RailwayRouteAttribute

Type	Definition
StationSquareAttribute	Detailed properties of station square object regarding urban plan.
Property	Definition
station	Station name.
route	Name of railway routes.
railwayType	Types of railways.

```
<xs:element name="RailwayRouteAttribute" type="uro:RailwayRouteAttributeType"/>
<xs:complexType name="RailwayRouteAttributeType">
  <xs:sequence>
    <xs:element name="operatorType" type="gml:CodeType"/>
    <xs:element name="operator" type="xs:string"/>
    <xs:element name="alternativeName" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="railwayType" type="gml:CodeType"/>
    <xs:element name="startStation" type="xs:string"/>
    <xs:element name="endStation" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
```

Extended properties of TrafficArea

Property	Definition
railwayTrackAttribute	Detailed properties of railway track.

```
<xs:element name="railwayTrackAttribute" type="uro:RailwayTrackAttributePropertyType"
substitutionGroup="tran:_GenericApplicationPropertyOfTrafficArea"/>
```

RailwayTrackAttributeType, RailwayTrackAttribute

Type	Definition
StationSquareAttribute	Detailed properties of station square object regarding urban plan.
Property	Definition
routeName	Name of the route.
directionType	Type of direction.
trackType	Type of track.
startPost	Start post location.
endPost	End post location.
aligiumentType	Type of alignment.
lod2Network	Track alignment without height.
lod3Network	Track alignment with height.
controlPoint	Control points of this track.

```
<xs:element name="RailwayTrackAttribute" type="uro:RailwayTrackAttributeType"/>
<xs:complexType name="RailwayTrackAttributeType">
  <xs:sequence>
    <xs:element name="routeName" type="xs:string" minOccurs="0"/>
    <xs:element name="directionType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="trackType" type="gml:CodeType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

```

<xs:element name="startPost" type="xs:string" minOccurs="0"/>
<xs:element name="endPost" type="xs:string" minOccurs="0"/>
<xs:element name="alignmentType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="lod2Network" type="gml:GeometricComplexPropertyType" minOccurs="0"/>
<xs:element name="lod3Network" type="gml:GeometricComplexPropertyType" minOccurs="0"/>
<xs:element name="controlPoint" type="uro:ControlPointPropertyType" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>

```

ControlPointType, ControlPoint

Type	Definition
ControlPoint	Alignment information of the railway track.
Property	Definition
startPost	Start post location.
endPost	End post location.
function	Type of the control point.
parameter	Alignment parameters.
startPoint	Start control point position.
endPoint	End control point position.

```

<xs:element name="ControlPoint" type="uro:ControlPointType"/>
<xs:complexType name="ControlPointType">
<xs:sequence>
<xs:element name="startPost" type="xs:string" minOccurs="0"/>
<xs:element name="endPost" type="xs:string" minOccurs="0"/>
<xs:element name="function" type="gml:CodeType"/>
<xs:element name="parameter" type="uro:ControlPointType"/>
<xs:element name="startPoint" type="gml:PointPropertyType" minOccurs="0"/>
<xs:element name="endPoint" type="gml:PointPropertyType" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

ControlPointTypeType, ControlPointType

Type	Definition
ControlPointType	Alignment information of the control point.
Property	Definition
circularCurve	Circular curve.
transitionCurve	Transition curve.
slopeType	Slope.
verticalCurve	Vertical curve.

```

<xs:element name="ControlPointType" type="uro:ControlPointTypeType"/>
<xs:complexType name="ControlPointTypeType">
<xs:choice>
<xs:element name="circularCurve" type="uro:CircularCurveTypePropertyType"/>
<xs:element name="transitionCurve" type="uro:TransitionCurveTypePropertyType"/>
<xs:element name="slopeType" type="uro:SlopeTypePropertyType"/>
<xs:element name="verticalCurve" type="uro:VerticalCurveTypePropertyType"/>
</xs:choice>
</xs:complexType>

```

CircularCurveTypeType, CircularCurveType

Type	Definition
CircularCurveType	Parameters of circular curve.
Property	Definition
radius	Radius of the curve.
intersection	Angle of intersection.
cutLength	Cut length of the curve.
curveLength	Length of the curve

```
<xs:element name="CircularCurveType" type="uro:CircularCurveTypeType"/>
<xs:complexType name="CircularCurveTypeType">
  <xs:sequence>
    <xs:element name="radius" type="gml:LengthType"/>
    <xs:element name="intersection" type="xs:double"/>
    <xs:element name="cutLength" type="gml:LengthType"/>
    <xs:element name="curveLength" type="gml:LengthType"/>
  </xs:sequence>
</xs:complexType>
```

TransitionCurveTypeType, TransitionCurveType

Type	Definition
TransitionCurveType	Parameters of transition curve.
Property	Definition
intersection	Angle of the intersection.
distance	Distance of the transition curve.
curveLength	Length of the transition curve

```
<xs:element name="TransitionCurveType" type="uro:TransitionCurveTypeType"/>
<xs:complexType name="TransitionCurveTypeType">
  <xs:sequence>
    <xs:element name="intersection" type="gml:LengthType"/>
    <xs:element name="distance" type="gml:LengthType"/>
    <xs:element name="curveLength" type="gml:LengthType"/>
  </xs:sequence>
</xs:complexType>
```

VerticalCurveTypeType, VerticalCurveType

Type	Definition
VerticalCurveType	Parameters of vertical curve.
Property	Definition
length	Length of the vertical curve.
verticalDistance	Vertical distance of the vertical curve.

```
<xs:element name="VerticalCurveType" type="uro:VerticalCurveTypeType"/>
<xs:complexType name="VerticalCurveTypeType">
  <xs:sequence>
    <xs:element name="length" type="gml:LengthType"/>
    <xs:element name="verticalDistance" type="gml:LengthType"/>
  </xs:sequence>
</xs:complexType>
```

SlopeTypeType, SlopeType

Type	Definition
SlopeType	Parameters of slope.
Property	Definition
slope	Angle of the slope.
elevation	Elevation at the point of gradient change.

```

<xs:element name="SlopeType" type="uro:SlopeTypeType"/>
<xs:complexType name="SlopeTypeType">
  <xs:sequence>
    <xs:element name="angle" type="xs:double"/>
    <xs:element name="elevation" type="gml:LengthType"/>
  </xs:sequence>
</xs:complexType>

```


4.2.6 Extended properties of Vegetation

This module defines groups of thematic attributes for a vegetation object, which are used as types of vegetation object properties. Each property extended in this module is declared as a member of the general property of *veg::_VegetationObject*. Groups of thematic attributes for a vegetation object are shown in Figure1-12

See 4.2.16 and 0 for details of common data types describing c facility management information and 2D maps.

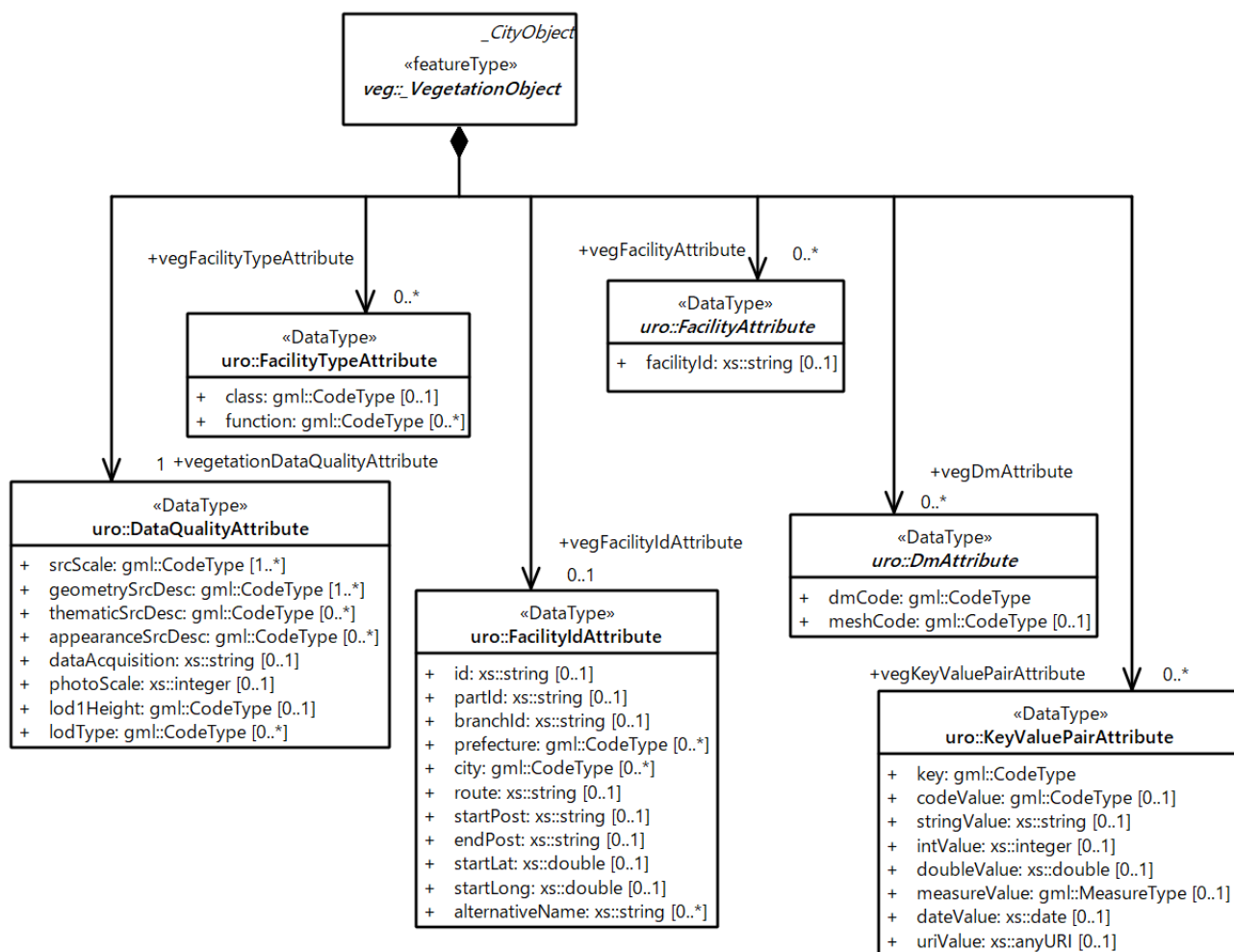


Figure1-12 UML diagram of extended properties of Vegetation

Extended properties of *_VegetationObject*

Property	Definition
vegDmAttribute	Information contained in Digital Mapping Data.
vegDataQualityAttribute	Data quality properties including data resources.
vegFacilityIdAttribute	Properties regarding object identification .
vegFacilityTypeAttribute	Properties regarding facility management.
vegFacilityAttribute	Detailed properties for facility management

```

<xs:element name="vegFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType"
substitutionGroup="veg:_GenericApplicationPropertyOfVegetationObject"/>
<xs:element name="vegFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType"
substitutionGroup="veg:_GenericApplicationPropertyOfVegetationObject"/>

```

```

<xs:element name="vegFacilityAttribute" type="uro:FacilityAttributePropertyType"
substitutionGroup="veg:_GenericApplicationPropertyOfVegetationObject"/>
<xs:element name="vegDmAttribute" type="uro:DmAttributePropertyType"
substitutionGroup="veg:_GenericApplicationPropertyOfVegetationObject"/>

```

VegetationDataQualityAttributeType, VegetationDataQualityAttribute

Type	Definition
VegetationDataQualityAttribute	lineage information when creating data. This is “not” Vegetation object property. To ensure the schema validation, i-UR defines metadata property for feature instance.
Property	Definition
srcScale	Map scale applied this instance.
geometrySrcDesc	Type of resources for geometric attribute of this instance.
thematicSrcDesc	Type of resources for thematic attribute of this instance.
appearanceSrcDesc	Type of resources for texture appearance of this instance.
lodType	Detailed LOD type for this instance.

```

<xs:element name="VegetationDataQualityAttribute" type="uro:VegetationDataQualityAttributeType"
substitutionGroup="uro:VegetationAttribute"></xs:element>
<xs:complexType name="VegetationDataQualityAttributeType">
<xs:complexContent>
<xs:extension base="uro:VegetationAttributeType">
<xs:sequence>
<xs:element name="srcScale" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="geometrySrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="thematicSrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="appearanceSrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.7 Extended properties of CityFurniture

This module defines groups of thematic attributes for a city furniture, which are used as types of city furniture properties. Each city furniture property extended in this module is declared as a member of the general property of *frn::CityFurniture*. Groups of thematic attributes for a city furniture are shown in Figure 1-13.

See 4.2.16 and 0 for details of common data types describing facility management information and 2D maps.

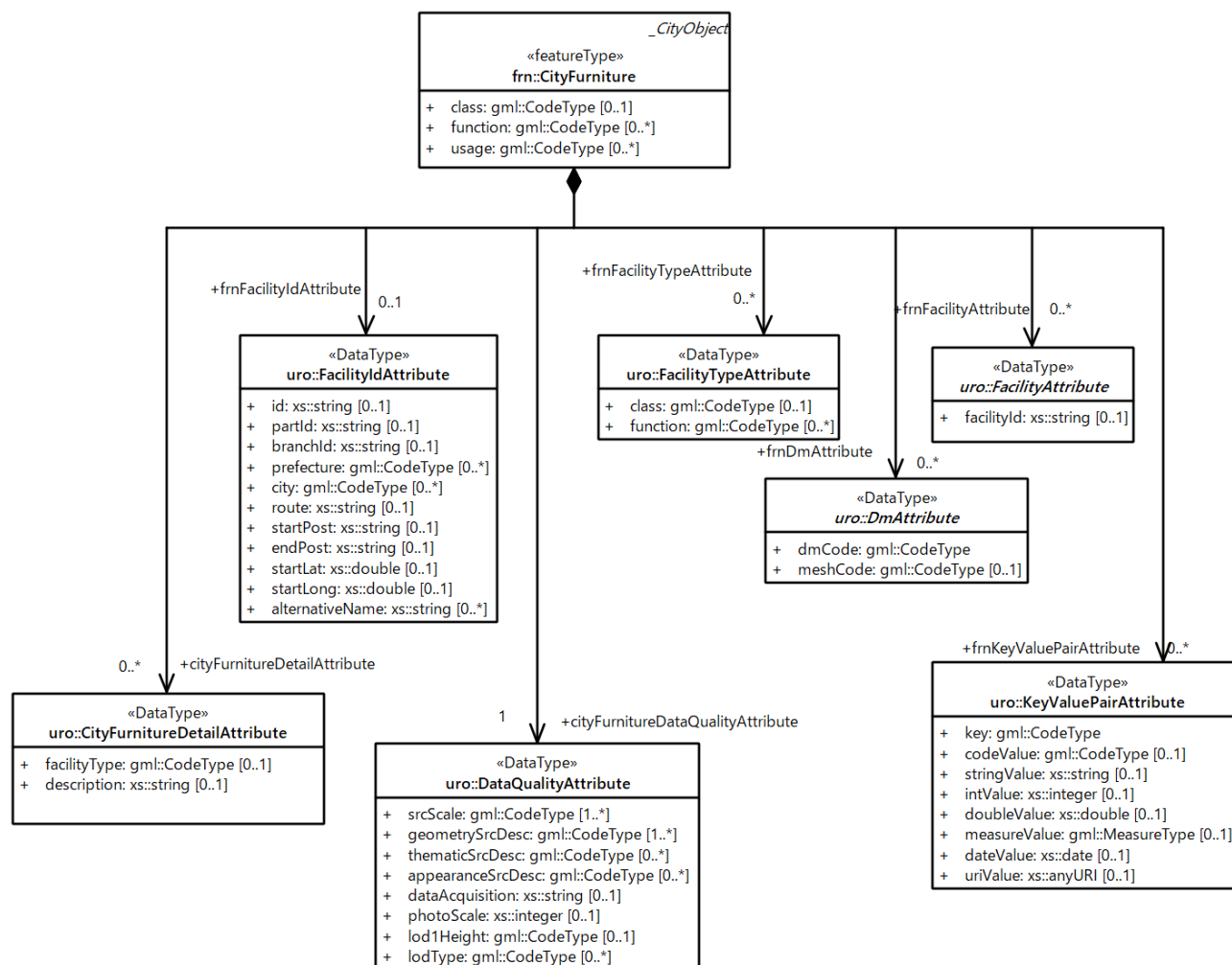


Figure 1-13 UML diagram of extended properties of CityFurniture

Extended properties of CityFurniture

Property	Definition
cityFurnitureDetailAttribute	Detailed description of the city furniture.
cityFurnitureDataQualityAttribute	Data quality properties including data resources.
frnDmAttribute	Information contained in Digital Mapping Data.
frnFacilityIdAttribute	Properties regarding object identification .
frnFacilityTypeAttribute	Properties regarding facility management.
frnFacilityAttribute	Detailed properties for facility management

```

<xs:element name="cityFurnitureDetailAttribute" type="uro:CityFurnitureDetailAttributePropertyType"
substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/>

```

```

<xs:element name="cityFurnitureDataQualityAttribute" type="uro:CityFurnitureDataQualityAttributePropertyType"
substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/><xs:element name="frnFacilityIdAttribute"
type="uro:FacilityIdAttributePropertyType" substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/>
<xs:element name="frnFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType"
substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/>
<xs:element name="frnFacilityAttribute" type="uro:FacilityAttributePropertyType"
substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/>
<xs:element name="frnDmAttribute" type="uro:DmAttributePropertyType"
substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/>

```

CityFurnitureDataQualityAttributeType, CityFurnitureDataQualityAttribute

Type	Definition
CityFurnitureDetailAttribute	Data type for describing detailed information of a city furniture.
Property	Definition
facilityType	Detailed classification for the city furniture.
description	Descriptive information for the city furniture, e.g., contents of road signs and markings.

```

<xs:element name="CityFurnitureDetailAttribute" type="uro:CityFurnitureDetailAttributeType"
substitutionGroup="uro:CityFurnitureAttribute"> </xs:element>
<xs:complexType name="CityFurnitureDetailAttributeType">
<xs:complexContent>
<xs:extension base="uro:CityFurnitureAttributeType">
<xs:sequence>
<xs:element name="facilityType" type="gml:CodeType" minOccurs="0"/></xs:element>
<xs:element name="description" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

CityFurnitureDataQualityAttributeType, CityFurnitureDataQualityAttribute

Type	Definition
CityFurnitureDataQualityAttribute	lineage information when creating data. This is "not" city furniture property. To ensure the schema validation, i-UR defines metadata property for feature instance.
Property	Definition
srcScale	Map scale applied this instance.
geometrySrcDesc	Type of resources for geometric attribute of this instance.
thematicSrcDesc	Type of resources for thematic attribute of this instance.
appearanceSrcDesc	Type of resources for texture appearance of this instance.
lodType	Detailed LOD type for this instance.

```

<xs:element name="CityFurnitureDataQualityAttribute" type="uro:CityFurnitureDataQualityAttributeType"
substitutionGroup="uro:CityFurnitureAttribute"> </xs:element>
<xs:complexType name="CityFurnitureDataQualityAttributeType">
<xs:complexContent>
<xs:extension base="uro:CityFurnitureAttributeType">
<xs:sequence>
<xs:element name="srcScale" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="geometrySrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="thematicSrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="appearanceSrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="lodType" type="uro:CityFurnitureLODType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

```

</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.8 Extended properties of LandUse

This module defines groups of thematic attributes for a landuse, which are used as types of landuse properties. Each bridge property extended in this module is declared as a member of the general property of *luse::LandUse*. Groups of thematic attributes for a landuse are shown in Figure 1-14.

See 0 for details of common data types describing, facility management information.

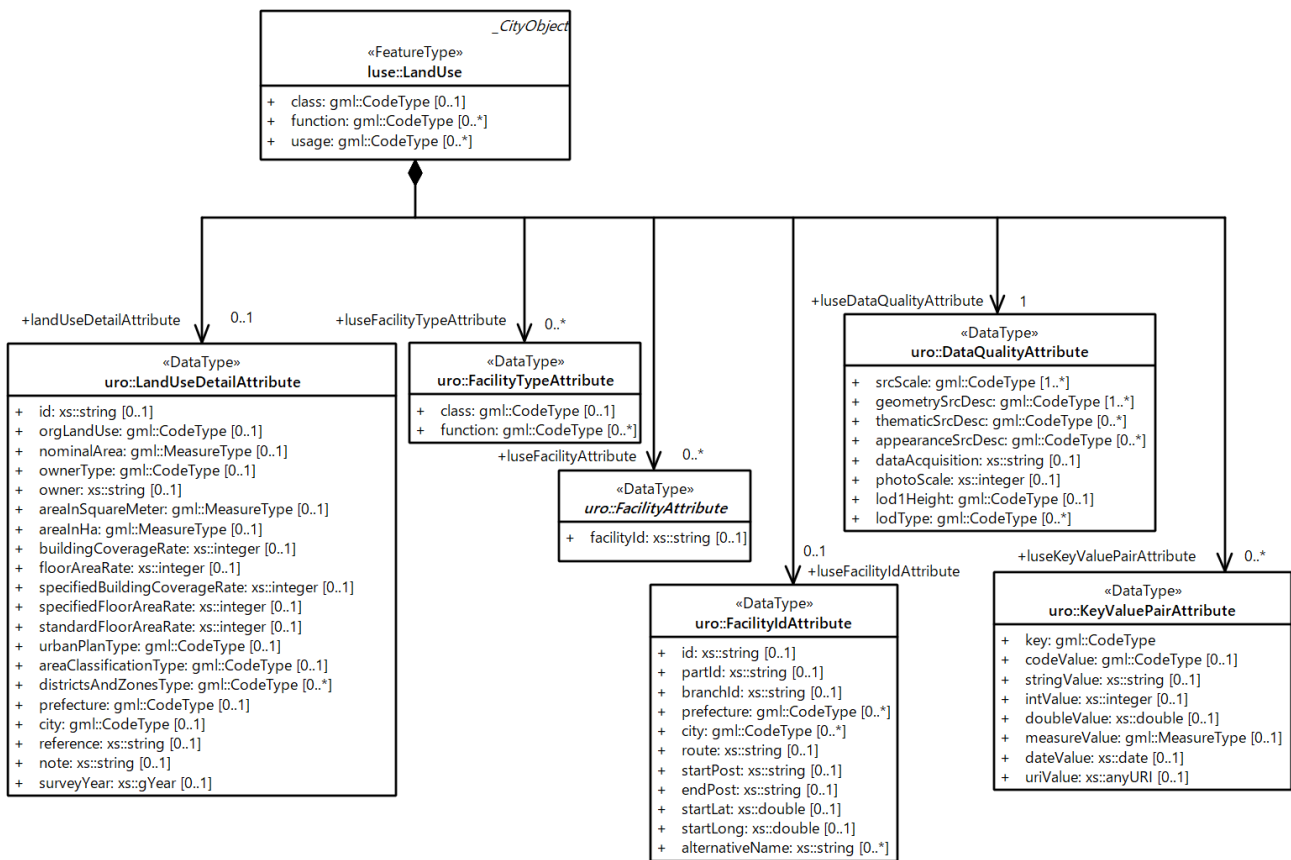


Figure 1-14 UML diagram of extended properties of LandUse

Extended properties of LandUse

Property	Definition
landUseDetailAttribute	Detailed description of the landuse.
luseDataQualityAttribute	Data quality properties including data resources.
luseDmAttribute	Information contained in Digital Mapping Data.
luseFacilityIdAttribute	Properties regarding object identification .
luseFacilityTypeAttribute	Properties regarding facility management.
luseFacilityAttribute	Detailed properties for facility management

```

<xs:element name="landUseDetailAttribute" type="uro:LandUseDetailAttributePropertyType"
substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>
<xs:element name="luseFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType"
substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>

```

```

<xs:element name="luseFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType"
substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>
<xs:element name="luseFacilityAttribute" type="uro:FacilityAttributePropertyType"
substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>
<xs:element name="luseDmAttribute" type="uro:DmAttributePropertyType"
substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>
<xs:element name="luseDataQualityAttribute" type="uro:LandUseDataQualityAttributePropertyType"
substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>

```

LandUseDetailAttributeType, LandUseDetailAttributeAttribute

Type	Definition
LandUseDataQualityAttribute	Data type for describing detailed information of a landuse.
Property	Definition
id	Object identification of the landuse.
orgLandUse	Land use type based on the code set by the municipality.
nominalArea	Nominal area of the land.
ownerType	Type of the land owner.
owner	Name of the land owner.
areaInSquareMeter	Area of the land (m2).
areaInHa	Area of the land (ha).
buildingCoverageRate	The ratio of the Building area divided by the land (site) area.
floorAreaRate	The ratio of Total floor area divided by Land (site) area.
specifiedBuildingCoverageRate	BuildingCoverageRate limits set by city planning.
specifiedFloorAreaRate	Maximum floor-area ratio limits set by city planning.
standardFloorAreaRate	Floor-area ratio calculated according to various provisions of the Building Standards Law.
urbanPlanType	Type of the land location designated by Urban Plan.
areaClassificationType	Type of the land location designated by Area classification.
districtAndZoneType	Type of the land location designated by Districts and Zones.
prefecture	Prefecture name of the land location.
city	City name of the land location.
reference	Reference information of the landuse
note	Additional information of the land
surveyYear	Fiscal year of the Land use status survey conducted.

```

<xs:element name="LandUseDetailAttribute" type="uro:LandUseDetailAttributeType"
substitutionGroup="uro:LandUseAttribute"/>
<xs:complexType name="LandUseDetailAttributeType">
<xs:complexContent>
<xs:extension base="uro:LandUseAttributeType">
<xs:sequence>
<xs:element name="orgLandUse" type="gml:CodeType" minOccurs="0"/>
<xs:element name="nominalArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="ownerType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="owner" type="xs:string" minOccurs="0"/>
<xs:element name="areaInSquareMeter" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="areaInHa" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="buildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="floorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="specifiedBuildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="specifiedFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="standardFloorAreaRate" type="xs:double" minOccurs="0"/>

```

```

<xs:element name="urbanPlanType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="areaClassificationType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="districtsAndZonesType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="prefecture" type="gml:CodeType" minOccurs="0"/>
<xs:element name="city" type="gml:CodeType" minOccurs="0"/>
<xs:element name="reference" type="xs:string" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0"/>
<xs:element name="surveyYear" type="xs:gYear" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

LandUseDataQualityAttributeType, LandUseDataQualityAttribute

Type	Definition
LandUseDataQualityAttribute	lineage information when creating data. This is "not" land use property. To ensure the schema validation, i-UR defines metadata property for feature instance.
Property	Definition
srcScale	Map scale applied this instance.
geometrySrcDesc	Type of resources for geometric attribute of this instance.
thematicSrcDesc	Type of resources for thematic attribute of this instance.

```

<xs:element name="LandUseDataQualityAttribute" type="uro:LandUseDataQualityAttributeType"/>
<xs:complexType name="LandUseDataQualityAttributePropertyType">
<xs:sequence>
<xs:element ref="uro:LandUseDataQualityAttribute"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="LandUseDataQualityAttributeType">
<xs:sequence>
<xs:element name="srcScale" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="geometrySrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="thematicSrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>

```

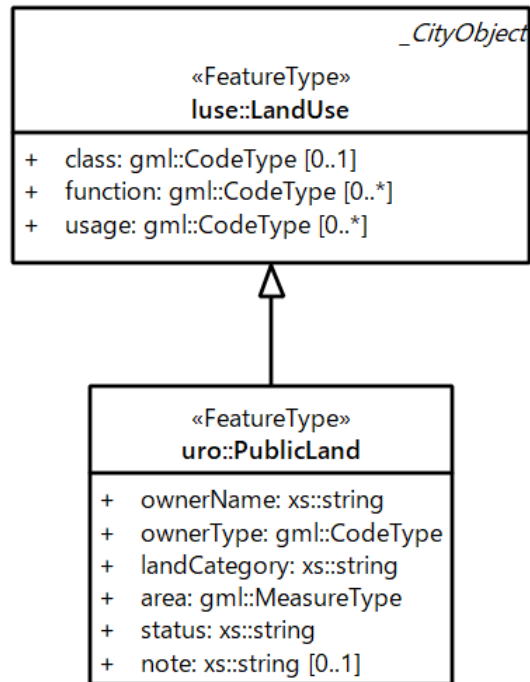


Figure1-15 UML diagram of PublicLand

PublicLandType, PublicLand

Type	Definition
PublicLand	Landuse status owned by public authority.
Property	Definition
ownerName	Name of the land owner.
ownerType	Type of the land owner.
landCategory	Cadastral category of the landuse.
area	Area of the land.
status	Status of the land
note	Additional information of the landuse.

```

<xs:element name="PublicLand" type="uro:PublicLandType" substitutionGroup="luse:LandUse"/>
<xs:complexType name="PublicLandType">
  <xs:complexContent>
    <xs:extension base="luse:LandUseType">
      <xs:sequence>
        <xs:element name="ownerName" type="xs:string" minOccurs="0"/>
        <xs:element name="ownerType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="landCategory" type="xs:string" minOccurs="0"/>
        <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="status" type="xs:string" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
  
```


4.2.9 Extended properties of CityObjectGroup

CityObjectGroups are defined as special *CityObjects* and aggregate *CityObjects* as shown in Figure 1-16. A *grp::CityObjectGroup* inherits attributes from the parent class *core::_CityObject*.

The *groupMember* property of *grp::CityObjectGroup* may contain a *core::_CityObject* element inline or an XLink reference to a remote *core::_CityObject* element, therefore extended city objects defined in this module may also be contained in or referred from a *grp::CityObjectGroup*. XLink reference prevents data duplication and enables multiple use of the *CityObjects*. The attribute *grp::usage* which is inherited from *grp::CityObjectGroup* can represent that this object group is for the use of urban planning.

See 4.2.19 and 0 for details of common data types describing IFC data and facility management information.

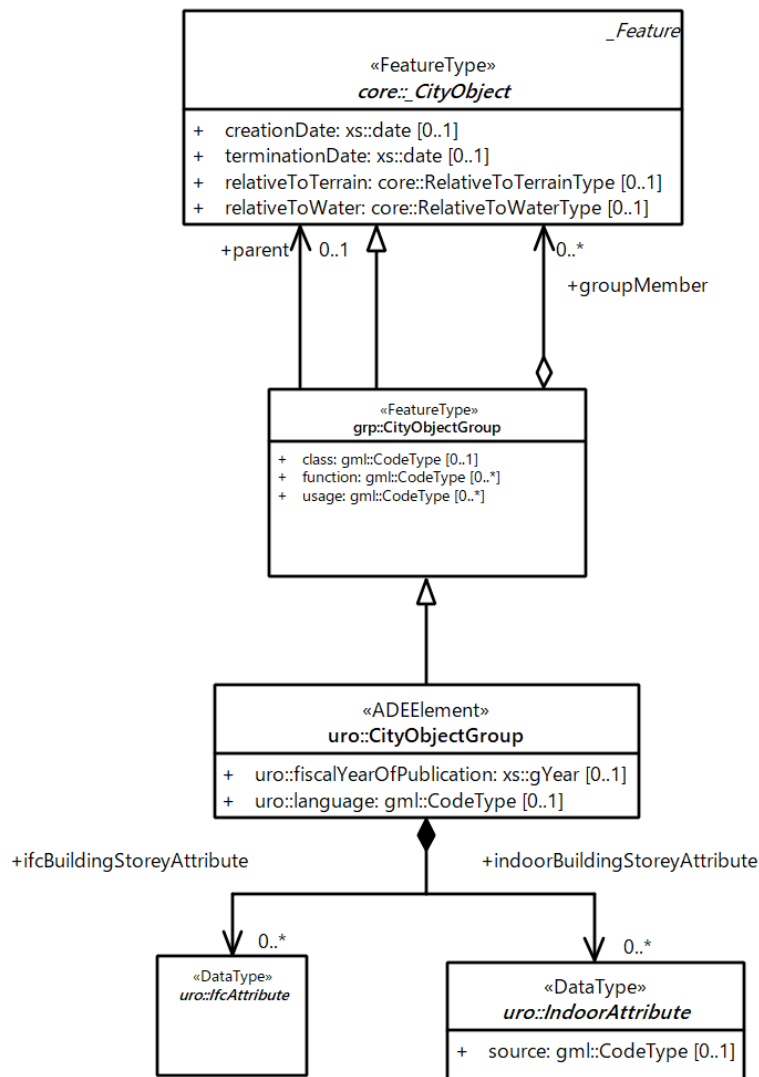


Figure 1-16 UML diagram of extended properties of City Object Group

Extended properties of CityObjectGroup

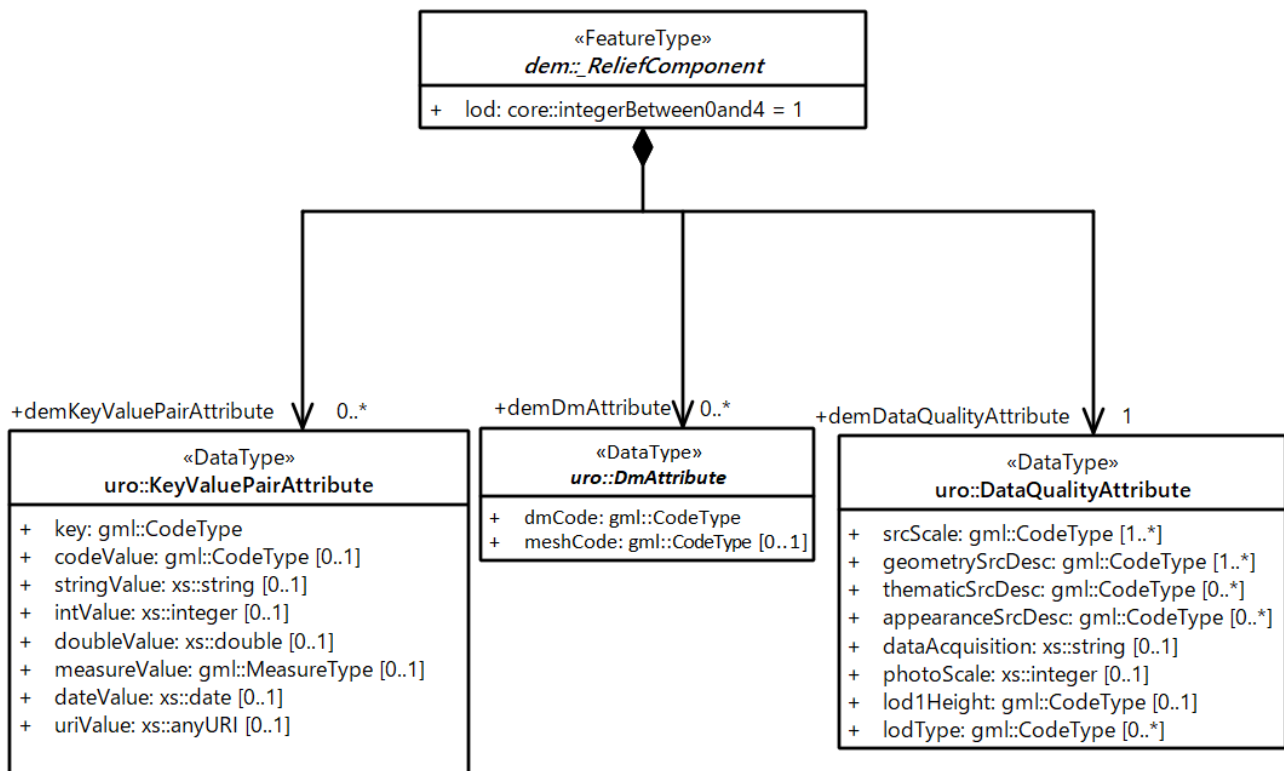
Property	Definition
fiscalYearOfPublication	Fiscal year when the group has been published
language	Language used in the group
ifcBuildingAttribute	Information contained in IFC Building Model.

```

<xs:element name="fiscalYearOfPublication" type="xs:gYear"
substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>
<xs:element name="language" type="gml:CodeType"
substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/> <xs:element
name="ifcBuildingStoreyAttribute" type="uro:IfcAttributePropertyType"
substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>
<xs:element name="indoorStoreyAttribute" type="uro:IndoorAttributePropertyType"
substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>

```

4.2.10 Extended properties of ReliefFeature



4.2.11 UndergroundBuilding

Underground building is a underground space and includes underground shopping mall and parking, built in front of stations, plazas, and subway stations in large cities. Underground building excluded basements of buildings.

Underground buildings can be considered a sort of building in terms of human activity, so that this module defines underground building as a subtype of *bldg::_AbstractBuilding* as shown in Figure1-17 This inheritance relationship allows *uro::UndergroundBuilding* to have indoor space features such as *bldg::Room* and *bldg::IntBuildingInstallation*, and enables users to seamlessly represent from indoor building to the underground building.

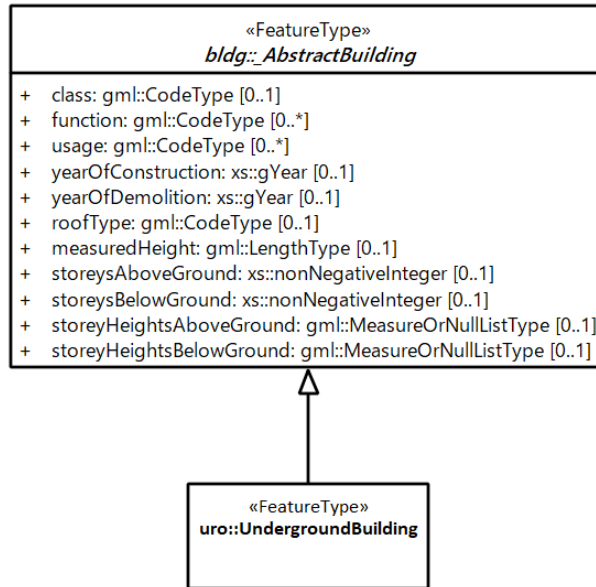


Figure1-17 UML diagram of UndergroundBuilding

UndergroundBuildingType, UndergroundBuilding

Type	Definition
UndergroundBuilding	An underground facility that is used by an unspecified large number of people. Or an underground facility that combines an underground passageway and a facility used by an unspecified large number of people. Including underground stations and underground parking lots. Basements of buildings are not included.

```

<xs:element name="UndergroundBuilding" type="uro:UndergroundBuildingType"
substitutionGroup="bldg:_AbstractBuilding"/>
<xs:complexType name="UndergroundBuildingType">
  <xs:complexContent>
    <xs:extension base="bldg:AbstractBuildingType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
  
```

4.2.12 Construction

Constructions are objects that are manufactured by humans from construction materials, are connected to earth, and are intended to be permanent CityGML 3.0 defines the new module "Construction" and this module focuses on as-built representations of constructions and integrates all concepts that are similar over different types of constructions, in particular buildings, bridges, and tunnels. In addition, for representing man-made structures that are neither buildings, nor bridges, nor tunnels so-called other constructions (e.g., large chimneys or city walls) can be defined.

The *uro::_AbstractConstruction* and other related classes are defined for describing constructions in CityGML 2.0.

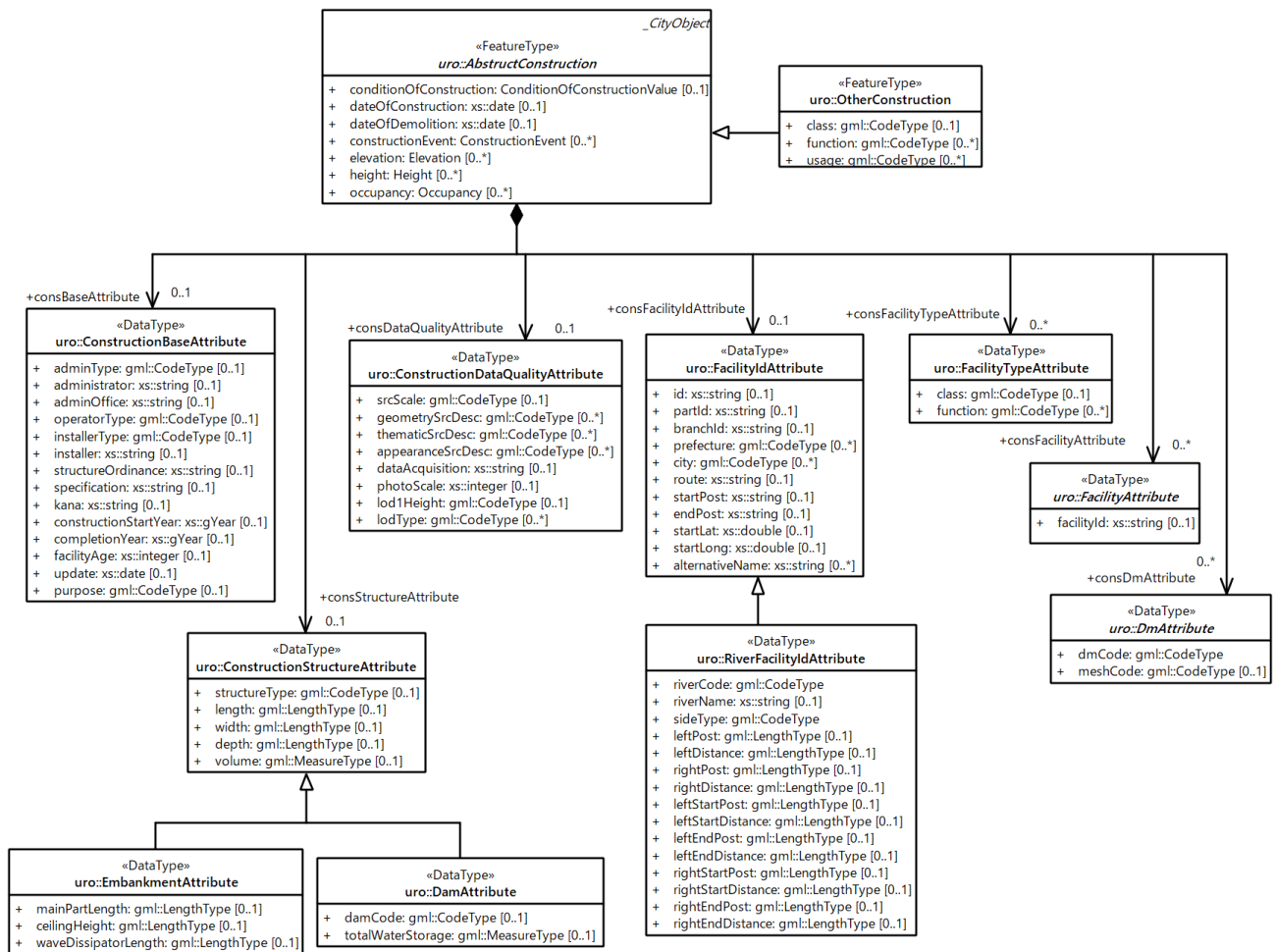


Figure1-19 UML diagram of properties of Other Construction

AbstractConstructionType, _AbstractConstruction

Type	Definition
AstractConstruction	AbstractConstruction is the abstract superclass for objects that are manufactured by humans from construction materials, are connected to earth, and are intended to be permanent. A connection with the ground also exists when the construction rests by its own weight on the ground or is moveable limited on stationary rails or if the construction is intended to be used mainly stationary.
Property	Definition
conditionOfConstruction	Indicates the life-cycle status of the construction. -declined -demolished -functional -projected -underConstruction
constructionEvent	Indicates the life-cycle status of the construction.
dateOfConstruction	Indicates the date at which the construction was completed.
dateOfDemolition	Indicates the date at which the construction was demolished.
elevation	Specifies qualified elevations of the construction in relation to a well-defined surface which is commonly taken as origin (e.g. geoid or water level)
height	Specifies qualified heights of the construction above ground or below ground.

occupancy	Provides qualified information on the residency of persons, animals, or other moveable objects in the construction.
lod0Geometry	3D geometry that represents the object in LOD0.
lod1Geometry	3D geometry that represents the object in LOD1.
lod2Geometry	3D geometry that represents the object in LOD2.
lod3Geometry	3D geometry that represents the object in LOD3.
constructionInstallation	Installation objects of a construction.
boundedBy	Boundary surfaces of the construction.
consBaseAttribute	Properties containing basic information of the construction.
consStructureAttribute	Properties regarding construction structure.
consDataQualityAttribute	Data quality properties including data resources.
consFacilityIdAttribute	Properties regarding object identification .
consFacilityTypeAttribute	Properties regarding facility management.
consFacilityAttribute	Detailed properties for facility management.
consDmAttribute	Information contained in Digital Mapping Data.

```

<xs:element name="AbstractConstruction" type="uro:AbstractConstructionType"
substitutionGroup="core:_CityObject"/>
<xs:complexType name="AbstractConstructionPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:AbstractConstruction"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="AbstractConstructionType">
  <xs:complexContent>
    <xs:extension base="core:AbstractCityObjectType">
      <xs:sequence>
        <xs:element name="conditionOfConstruction" type="uro:ConditionOfConstructionValue" minOccurs="0"/>
        <xs:element name="dateOfConstruction" type="xs:date" minOccurs="0"/>
        <xs:element name="dateOfDemolition" type="xs:date" minOccurs="0"/>
        <xs:element name="constructionEvent" type="uro:ConstructionEventPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="elevation" type="uro:ElevationPropertyType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="height" type="uro:HeightPropertyType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="occupancy" type="uro:OccupancyPropertyType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="consFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="consFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType" minOccurs="0"/>
        <xs:element name="consFacilityAttribute" type="uro:FacilityAttributePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="consBaseAttribute" type="uro:ConstructionBaseAttributePropertyType" minOccurs="0"/>
        <xs:element name="consStructureAttribute" type="uro:ConstructionStructureAttributePropertyType"
minOccurs="0"/>
        <xs:element name="consDisasterRiskAttribute" type="uro:DisasterRiskAttributePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="consDmAttribute" type="uro:DmAttributePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="consDataQualityAttribute" type="uro:ConstructionDataQualityAttributePropertyType"
minOccurs="0"/>
        <xs:element name="lod0Geometry" type="gml:GeometryPropertyType" minOccurs="0"/>
        <xs:element name="lod1Geometry" type="gml:GeometryPropertyType" minOccurs="0"/>
        <xs:element name="lod2Geometry" type="gml:GeometryPropertyType" minOccurs="0"/>
        <xs:element name="lod3Geometry" type="gml:GeometryPropertyType" minOccurs="0"/>
        <xs:element name="lod4Geometry" type="gml:GeometryPropertyType" minOccurs="0"/>

```

```

<xs:element name="boundedBy" type="uro:_BoundarySurfacePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
<xs:element name="constructionInstallation" type="uro:ConstructionInstallationPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

OtherConstructionType, OtherConstruction

Type	Definition
OtherConstruction	An OtherConstruction is a construction that is not covered by any of the other subclasses of AbstractConstruction.
Property	Definition
class	Indicates the specific type of the OtherConstruction.
function	Specifies the intended purposes of the OtherConstruction.
usage	Specifies the actual uses of the OtherConstruction

```

<xs:element name="OtherConstruction" type="uro:OtherConstructionType"
substitutionGroup="uro:AbstractConstruction"></xs:element>
<xs:complexType name="OtherConstructionType">
<xs:complexContent>
<xs:extension base="uro:AbstractConstructionType">
<xs:sequence>
<xs:element name="class" type="gml:CodeType" minOccurs="0"/>
<xs:element name="function" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="usage" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

AbstractBoundarySurfaceType, _BoundarySurface

Type	Definition
_BoundarySurface	The abstract superclass for all kinds of thematic surfaces bounding a construction.
Property	Definition
lod2Geometry	3D geometry that represents the object in LOD2.
lod3Geometry	3D geometry that represents the object in LOD3.

```

<xs:element name="_BoundarySurface" type="uro:_BoundarySurfaceType" abstract="true"
substitutionGroup="core:_CityObject"/>
<xs:complexType name="_BoundarySurfaceType" abstract="true">
<xs:complexContent>
<xs:extension base="core:AbstractCityObjectType">
<xs:sequence>
<xs:element name="lod2MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
<xs:element name="lod3MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

OuterCeilingSurfaceType, OuterCeilingSurface

Type	Definition
OuterCeilingSurface	An outerCeilingSurface is a surface that belongs to the outer construction shell with the orientation pointing downwards.

```
<xs:element name="OuterCeilingSurface" type="uro:OuterCeilingSurfaceType"
substitutionGroup="uro:_BoundarySurface"/>
<xs:complexType name="OuterCeilingSurfaceType">
  <xs:complexContent>
    <xs:extension base="uro:_BoundarySurfaceType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

OuterFloorSurfaceType, OuterFloorSurface

Type	Definition
OuterFloorSurface	An OuterFloorSurface is a surface that belongs to the outer construction shell with the orientation pointing upwards.

```
<xs:element name="OuterFloorSurface" type="uro:OuterFloorSurfaceType" substitutionGroup="uro:_BoundarySurface"/>
<xs:complexType name="OuterFloorSurfaceType">
  <xs:complexContent>
    <xs:extension base="uro:_BoundarySurfaceType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

RoofSurfaceType, RoofSurface

Type	Definition
RoofSurface	A RoofSurface is a surface that delimits major roof parts of a construction.

```
<xs:element name="RoofSurface" type="uro:RoofSurfaceType" substitutionGroup="uro:_BoundarySurface"/>
<xs:complexType name="RoofSurfaceType">
  <xs:complexContent>
    <xs:extension base="uro:_BoundarySurfaceType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

WallSurfaceType, WallSurfaceSurface

Type	Definition
WallSurfaceSurface	A WallSurface is a surface that is part of the construction facade visible from the outside.

```
<xs:element name="WallSurface" type="uro:WallSurfaceType" substitutionGroup="uro:_BoundarySurface"/>
<xs:complexType name="WallSurfaceType">
  <xs:complexContent>
    <xs:extension base="uro:_BoundarySurfaceType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```



```
</xs:complexContent>
</xs:complexType>
```

GroundSurfaceType, GroundSurface

Type	Definition
GroundSurface	A GroundSurface is a surface that represents the ground plate of a construction. The polygon defining the ground plate is congruent with the footprint of the construction.

```
<xs:element name="GroundSurface" type="uro:GroundSurfaceType" substitutionGroup="uro:_BoundarySurface"/>
<xs:complexType name="GroundSurfaceType">
  <xs:complexContent>
    <xs:extension base="uro:_BoundarySurfaceType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

ClosureSurfaceType, ClosureSurface

Type	Definition
ClosureSurface	ClosureSurface is a special type of thematic surface used to close holes in volumetric objects. Closure surfaces are virtual (non-physical) surfaces.

```
<xs:element name="ClosureSurface" type="uro:ClosureSurfaceType" substitutionGroup="uro:_BoundarySurface"/>
<xs:complexType name="ClosureSurfaceType">
  <xs:complexContent>
    <xs:extension base="uro:_BoundarySurfaceType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

ConstructionInstallationType, ConstructionInstallation

Type	Definition
ConstructionInstallation	Installation objects of a construction.
Property	Definition
class	Indicates the specific type of the Installation objects of a construction.
function	Specifies the intended purposes of the Installation objects of a construction.
usage	Specifies the actual uses of the Installation objects of a construction.
lod2Geometry	3D geometry that represents the object in LOD2.
lod3Geometry	3D geometry that represents the object in LOD3.

```
<xs:element name="ConstructionInstallation" type="uro:ConstructionInstallationType"
substitutionGroup="core:_CityObject"/>
<xs:complexType name="ConstructionInstallationType">
  <xs:complexContent>
    <xs:extension base="core:AbstractCityObjectType">
      <xs:sequence>
        <xs:element name="class" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="function" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="usage" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="lod2Geometry" type="gml:GeometryPropertyType" minOccurs="0"/>
        <xs:element name="lod3Geometry" type="gml:GeometryPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

```
</xs:complexContent>
</xs:complexType>
```

ElevationType, Elevation

Type	Definition
Elevation	A data type that includes the elevation value itself and information on how this elevation was measured.
Property	Definition
elevationRefernce	that includes the elevation value itself and information on how this elevation was measured.
elavationValue	Specifies the value of the elevation.

```
<xs:element name="Elevation" type="uro:ElevationType"/>
<xs:complexType name="ElevationType">
  <xs:sequence>
    <xs:element name="elevationReference" type="gml:CodeType"/>
    <xs:element name="elevationValue" type="gml:DirectPositionType"/>
  </xs:sequence>
</xs:complexType>
```

ConstructionEventType, ConstructionEvent

Type	Definition
ConstructionEvent	A data type used to describe a specific event that is associated with a construction. Examples are the issuing of a building permit or the renovation of a building
Property	Definition
event	Indicates the specific event type.
dateOfEvent	Specifies the date at which the event took or will take place.
description	Provides additional information on the event.

```
<xs:element name="ConstructionEvent" type="uro:ConstructionEventType"/>
<xs:complexType name="ConstructionEventType">
  <xs:sequence>
    <xs:element name="event" type="gml:CodeType"/>
    <xs:element name="dateOfEvent" type="xs:date"/>
    <xs:element name="description" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

HeightType, Height

Type	Definition
Height	A vertical distance (measured or estimated) between a low reference and a high reference.
Property	Definition
highReference	Indicates the high point used to calucurate the value of the height.
lowReference	Indicates the low point used to calucurate the value of the height.
status	Indicates the way the height has been captured.
value	Specifies the value of the above or below ground.

```
<xs:element name="Height" type="uro:HeightType"/>
<xs:complexType name="HeightType">
  <xs:sequence>
    <xs:element name="highReference" type="gml:CodeType"/>
```

```

<xs:element name="lowReference" type="gml:CodeType"/>
<xs:element name="status" type="uro:HeightStatusValue"/>
<xs:element name="value" type="gml:LengthType"/>
</xs:sequence>
</xs:complexType>
<xs:simpleType name="HeightStatusValue">
<xs:restriction base="xs:string">
<xs:enumeration value="estimated"/>
<xs:enumeration value="measured"/>
</xs:restriction>
</xs:simpleType>

```

OccupancyType, Occupancy

Type	Definition
Occupancy	An application-dependent indication of what is contained by a feature.
Property	Definition
interval	indicates the time period the occupants are contained by a feature.
numberOfOccupants	Indicated the number of occupants contained by a feature.
occupantType	Indicates the specific type of the occupants that are contained by a feature.

```

<xs:element name="Occupancy" type="uro:OccupancyType"/>
<xs:complexType name="OccupancyType">
<xs:sequence>
<xs:element name="interval" type="gml:CodeType" minOccurs="0"/>
<xs:element name="numberOfOccupants" type="xs:integer"/>
<xs:element name="occupantType" type="gml:CodeType" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

ConstructionBaseAttributeType, ConstructionBaseAttribute

Type	Definition
ConstructionBaseAttribute	Basic information of a construction.
Property	Definition
adminType	Type of administrator.
administrator	Name of the administrator.
adminOffice	Address of the administrator office.
operatorType	Type of construction operator.
installerType	Type of construction installaer.
installer	Name of constmction installaer.
structureOrdinance	Name of the structure ordinance applied.
specification	Name of the structure specification applied.
kana	Kana over or beside kanji to indicate pronunciation
constructionStartYear	Start year of construction.
completionYear	Construction completion year.
facilityAge	Facility age of this construction.
update	Update date.
purpose	Purpose of this construction.

```

<xs:element name="ConstructionBaseAttribute" type="uro:ConstructionBaseAttributeType"/>
<xs:complexType name="ConstructionBaseAttributeType">
<xs:sequence>
<xs:element name="adminType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="administrator" type="xs:string" minOccurs="0"/>
<xs:element name="adminOffice" type="xs:string" minOccurs="0"/>

```

```

<xs:element name="operatorType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="installerType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="installer" type="xs:string" minOccurs="0"/>
<xs:element name="structureOrdinance" type="xs:string" minOccurs="0"/>
<xs:element name="specification" type="xs:string" minOccurs="0"/>
<xs:element name="kana" type="xs:string" minOccurs="0"/>
<xs:element name="constructionStartYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="completionYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="facilityAge" type="xs:integer" minOccurs="0"/>
<xs:element name="update" type="xs:date" minOccurs="0"/>
<xs:element name="purpose" type="gml:CodeType" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

ConstructionStructureAttributeType, ConstructionStructureAttribute

Type	Definition
ConstructionStructureAttribute	Basic information on construction structure.
Property	Definition
structureType	Structure type of the construction
length	Length of the construction.
width	Width of the construction.
depth	Depth of the construction.
volume	Volume of the construction.

```

<xs:element name="ConstructionStructureAttribute" type="uro:ConstructionStructureAttributeType"/>
<xs:complexType name="ConstructionStructureAttributeType">
<xs:sequence>
<xs:element name="structureType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="length" type="gml:LengthType" minOccurs="0"/>
<xs:element name="width" type="gml:LengthType" minOccurs="0"/>
<xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="volume" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

EmbankmentAttributeType, EmbankmentAttribute

Type	Definition
EmbankmentAttribute	Basic information on embankment.
Property	Definition
mainPartLength	Length of the main part of the embankment.
ceilingHeight	Ceiling height of the embankment.
waveDissipatorLength	Length of the wavedissipator of the embankment.

```

<xs:element name="EmbankmentAttribute" type="uro:EmbankmentAttributeType"
substitutionGroup="uro:ConstructionStructureAttribute"/>
<xs:complexType name="EmbankmentAttributeType">
<xs:complexContent>
<xs:extension base="uro:ConstructionStructureAttributeType">
<xs:sequence>
<xs:element name="mainPartLength" type="gml:LengthType" minOccurs="0"/>
<xs:element name="ceilingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="waveDissipatorLength" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>

```

```
</xs:complexType>
```

DamAttributeType, DamAttribute

Type	Definition
DamAttribute	Basic information on dam
Property	Definition
dainCode	Code for the dam.
tora!WaterStorage	Toral water storage volume of the dam.

```
<xs:element name="DamAttribute" type="uro:DamAttributeType"
substitutionGroup="uro:ConstructionStructureAttribute"/>
<xs:complexType name="DamAttributeType">
<xs:complexContent>
<xs:extension base="uro:ConstructionStructureAttribute">
<xs:sequence>
<xs:element name="damCode" type="gml:CodeType" minOccurs="0"/>
<xs:element name="totalWaterStorage" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

ConstructionDataQualityAttributeType, ConstructionDataQualityAttribute

Type	Definition
ConstructionDataQualityAttribute	lineage information when creating data. This is "not" construction property. To ensure the schema validation, i-UR defines metadata property for feature instance.
Property	Definition
srcScale	Map scale applied this instance.
geometrySrcDesc	Type of resources for geometric attribute of this instance.
thematicSrcDesc	Type of resources for thematic attribute of this instance.
appearanceSrcDesc	Type of resources for texture appearance of this instance.
dataAcquisition	Method of data acquisition.
photoScale	Scale of photo when the data acquisition method is photogrammetry
lodHeightType	Type of the height applied to LOD1 geometry(block model).
lodType	Detailed LOD type for this instance.

```
<xs:element name="ConstructionDataQualityAttribute" type="uro:ConstructionDataQualityAttributeType"/>
<xs:complexType name="ConstructionDataQualityAttributeType">
<xs:sequence>
<xs:element name="srcScale" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="geometrySrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="thematicSrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="appearanceSrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="dataAcquisition" type="xs:string" minOccurs="0"/>
<xs:element name="photoScale" type="xs:integer" minOccurs="0"/>
<xs:element name="lod1HeightType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="lodType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>
```

ConstructionRiskAssesmentAttributeType, ConstructionRiskAssesmentAttribute

Type	Definition
ConstructionRiskAssesmentAttribute	Results of damage assessment based on structural inspection results.
Property	Definition
surveyYear	Year in which the inspection was conducted.
riskType	Degree of damage.
status	Status of maintenance.
referenceDate	Date of data reference.

```

<xs:element name="ConstructionRiskAssessmentAttribute" type="uro:ConstructionRiskAssessmentAttributeType"/>
<xs:complexType name="ConstructionRiskAssessmentAttributeType">
  <xs:sequence>
    <xs:element name="surveyYear" type="xs:gYear" minOccurs="0"/>
    <xs:element name="riskType" type="gml:CodeType"/>
    <xs:element name="status" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="referenceDate" type="xs:date"/>
  </xs:sequence>
</xs:complexType>

```

4.2.13 UtilityNetwork

Utility networks include network facilities such as water, sewer, electricity, gas, and telecommunications and also include underground and overed facilities. In particular, underground facilities are invisible in the real world and are expected to be represented in 3Dcity models. Figure1-20 shows the structure of the utility network model. The root class *uro::UtilityNetworkElement* inherits from *frn::CityFurniture*.

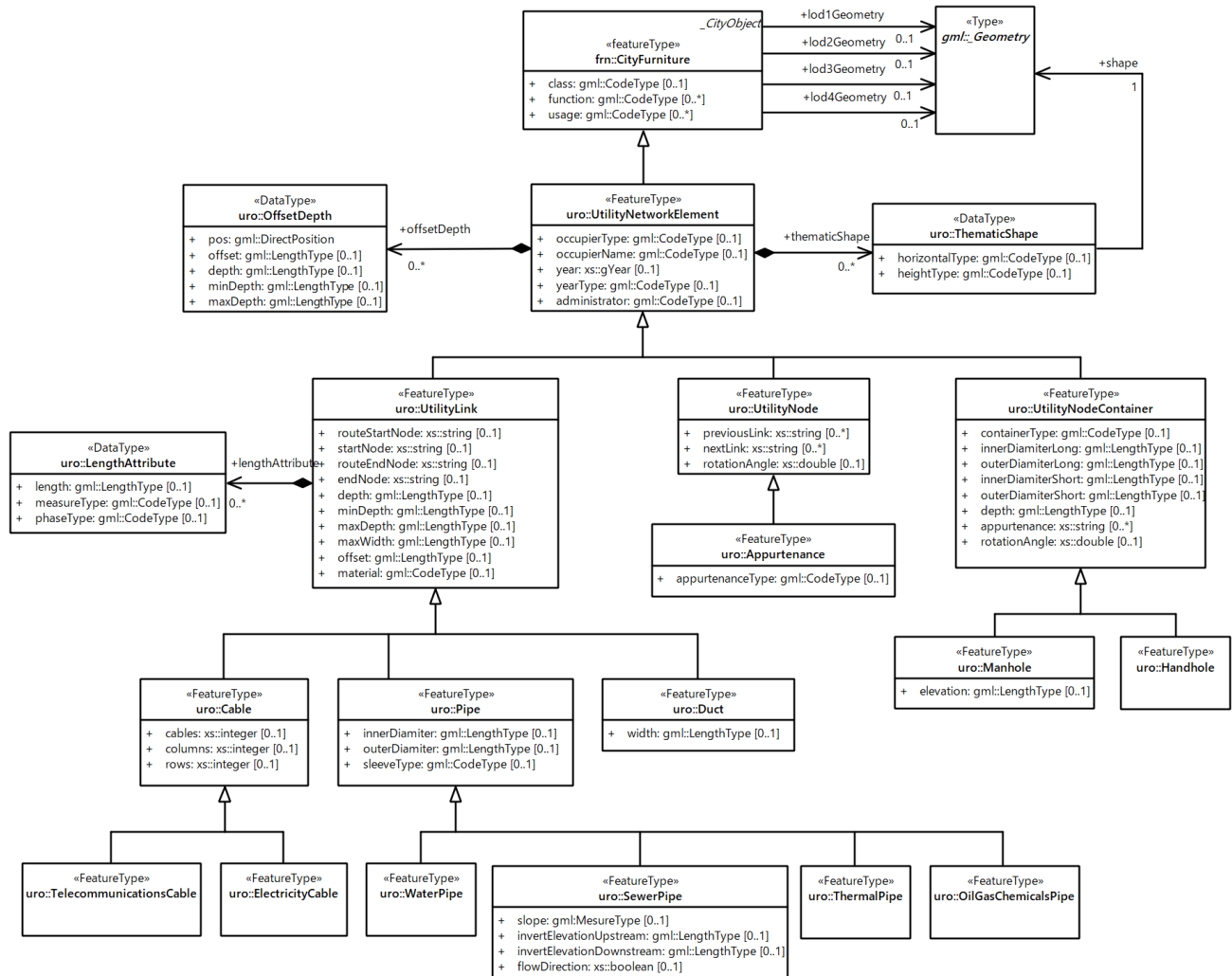


Figure1-20 UML diagram for Utility Network Objects

UtilityNetworkElement, UtilityNetworkElement

Type	Definition
UtilityNetworkElement	The root class of network facilities such as water, sewer, electricity, gas and telecommunications and also include underground and overed facilities.
Property	Definition
occupiesType	Type of the occupiers of the facility put under of over road.
occupierName	Name of the occupiers of the facility.
year	Construction year.
yearType	Certainty of the construction year.
administrator	Administrator of this utility facility.
offsetDepth	Offset and depth of the location of buried utility network facility.

thematicShape	Thematic shape of the utility network element.
---------------	--

```
<xs:element name="UtilityNetworkElement" type="uro:UtilityNetworkElementType" abstract="true"
substitutionGroup="frn:CityFurniture"/>
<xs:complexType name="UtilityNetworkElementType" abstract="true">
<xs:complexContent>
<xs:extension base="frn:CityFurnitureType">
<xs:sequence>
<xs:element name="occupierType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="occupierName" type="gml:CodeType" minOccurs="0"/>
<xs:element name="year" type="xs:gYear" minOccurs="0"/>
<xs:element name="yearType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="administrator" type="gml:CodeType" minOccurs="0"/>
<xs:element name="offsetDepth" type="uro:OffsetDepthPropertyType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="thematicShape" type="uro:ThematicShapePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

OffsetDepthType, OffsetDepth

Type	Definition
OffsetDepth	Information of the facility location using relative distance.
Property	Definition
pos	Position at which offset and depth is measured.
offset	Offset size from the road edge.
depth	Depth of the link.
minDepth	Maximum depth of the network link facility.
maxDepth	Minimum depth of the network link facility.

```
<xs:element name="OffsetDepth" type="uro:OffsetDepthType"/>
<xs:complexType name="OffsetDepthType">
<xs:sequence>
<xs:element name="pos" type="gml:DirectPositionType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="offset" type="gml:LengthType" minOccurs="0"/>
<xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minDepth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maxDepth" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
```

ThematicShapeType, ThematicShape

Type	Definition
ThematicShape	2 dimensional shape of a utility network Link.
Property	Definition
horizontalType	Horizontal location of the 2 dimensional shape.
heightType	Vertical location of the 2 dimensional shape.
shape	2 dimensional shape at the specific location.

```
<xs:element name="ThematicShape" type="uro:ThematicShapeType"/>
<xs:complexType name="ThematicShapeType">
<xs:sequence>
```



```

<xs:element name="horizontalType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="heightType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="shape" type="gml:GeometryPropertyType"/>
</xs:sequence>
</xs:complexType>

```

4.2.13.1 Utility network link

UtilityLinkType, UtilityLink

Type	Definition
UtilityLink	Network link of the utility facilities: cables, pipes and ducts.
Property	Definition
routeStartNode	Start node id of the route which includes this link.
startNode	Start node id.
routeEndNode	End node id of the route which includes this link.
endNode	End node id.
horizontalLength	Horizonatal length of the network link facility.
depth	Depth of the link.
maxDepth	Maximum depth of the network link facility.
minDepth	Minimum depth of the network link facility.
maxWidth	Maximum width of the network link facility.
offset	Offset size rom the road edge
material	Material of the network link facility.
lengthAttribute	Length of this link.

```

<xs:element name="UtilityLink" type="uro:UtilityLinkType" abstract="true"
substitutionGroup="uro:UtilityNetworkElement"/>
<xs:complexType name="UtilityLinkType" abstract="true">
<xs:complexContent>
<xs:extension base="uro:UtilityNetworkElementType">
<xs:sequence>
<xs:element name="routeStartNode" type="xs:string" minOccurs="0"/>
<xs:element name="startNode" type="xs:string" minOccurs="0"/>
<xs:element name="routeEndNode" type="xs:string" minOccurs="0"/>
<xs:element name="endNode" type="xs:string" minOccurs="0"/>
<xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minDepth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maxDepth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maxWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="offset" type="gml:LengthType" minOccurs="0"/>
<xs:element name="material" type="gml:CodeType" minOccurs="0"/>
<xs:element name="lengthAttribute" type="uro:LengthAttributePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

LengthAttributeType, LengthAttribute

Type	Definition
LengthAttribute	Data type to clarify the definition of the length of a utility network Link.
Property	Definition

length	Length of th network Link.
measureType	Measuring method.
phaseType	Phase of length measurement.

```
<xs:element name="LengthAttribute" type="uro:LengthAttributeType"/>
<xs:complexType name="LengthAttributeType">
  <xs:sequence>
    <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="measureType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="phaseType" type="gml:CodeType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

CableType, Cable

Type	Definition
Cable	Electric and other cables buried under ground.
Property	Definition
cables	Number of cables.
columns	Number of columns.
rows	Number of rows.

```
<xs:element name="Cable" type="uro:CableType" substitutionGroup="uro:UtilityLink"/>
<xs:complexType name="CableType">
  <xs:complexContent>
    <xs:extension base="uro:UtilityLinkType">
      <xs:sequence>
        <xs:element name="columns" type="xs:integer" minOccurs="0"/>
        <xs:element name="rows" type="xs:integer" minOccurs="0"/>
        <xs:element name="cables" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

PipeType, Pipe

Type	Definition
Pipe	Pipes for carrying water, oil, etc., and for placing lines for electricity, etc.
Property	Definition
innerDiameter	Inner diameter of the pipe.
outerDiameter	Outer diameter of the pipe.
sleeveType	Type of sheath tube

```
<xs:element name="Pipe" type="uro:PipeType" substitutionGroup="uro:UtilityLink"/>
<xs:complexType name="PipeType">
  <xs:complexContent>
    <xs:extension base="uro:UtilityLinkType">
      <xs:sequence>
        <xs:element name="innerDiameter" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="outerDiameter" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="sleeveType" type="gml:CodeType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

```
</xs:complexContent>
</xs:complexType>
```

DuctType, Duct

Type	Definition
Duct	A tube or passageway in a building or machine for air, liquid, cables, etc.
Property	Definition
width	Width of the duct.

```
<xs:element name="Duct" type="uro:DuctType" substitutionGroup="uro:UtilityLink"/>
<xs:complexType name="DuctType">
  <xs:complexContent>
    <xs:extension base="uro:UtilityLinkType">
      <xs:sequence>
        <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

TelecommunicationsCableType, TelecommunicationsCable

Type	Definition
TelecommunicationsCable	Cable for telecommunication.

```
<xs:element name="TelecommunicationsCable" type="uro:TelecommunicationsCableType"
substitutionGroup="uro:Cable"/>
<xs:complexType name="TelecommunicationsCableType">
  <xs:complexContent>
    <xs:extension base="uro:CableType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

ElectricityCableType, ElectricityCable

Type	Definition
ElectricityCable	Cable for electricity.

```
<xs:element name="ElectricityCable" type="uro:ElectricityCableType" substitutionGroup="uro:Cable"/>
<xs:complexType name="ElectricityCableType">
  <xs:complexContent>
    <xs:extension base="uro:CableType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

WaterPipeType, WaterPipe

Type	Definition
WaterPipe	Pipe for water supply.

```

<xs:element name="WaterPipe" type="uro:WaterPipeType" substitutionGroup="uro:Pipe"/>
<xs:complexType name="WaterPipeType">
  <xs:complexContent>
    <xs:extension base="uro:PipeType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

SewerPipeType, SewerPipe

Type	Definition
SewerPipe	Pipes for carrying waste water.
Property	Definition
slope	Inclination angle of pipeline.
invertElevationUpstream	Upstream height from the level reference surface to the bottom of the inner surface of the pipe.
invertElevationDownstream	Downstream height from the level reference surface to the bottom of the inner surface of the pipe.
flowDirection	Flow direction. True if the direction is the same as the direction of the line.

```

<xs:element name="SewerPipe" type="uro:SewerPipeType" substitutionGroup="uro:Pipe"/>
<xs:complexType name="SewerPipeType">
  <xs:complexContent>
    <xs:extension base="uro:PipeType">
      <xs:sequence>
        <xs:element name="slope" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="invertElevationUpstream" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="invertElevationDownstream" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="flowDirection" type="xs:boolean" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

ThermalPipeType, ThermalPipe

Type	Definition
ThermalPipe	Pipe for heat transfer

```

<xs:element name="ThermalPipe" type="uro:ThermalPipeType" substitutionGroup="uro:Pipe"/>
<xs:complexType name="ThermalPipeType">
  <xs:complexContent>
    <xs:extension base="uro:PipeType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

OilGasChemicalsPipeType, OilGasChemicalsPipe

Type	Definition
OilGasChemicalsPipe	Pipe for oil, gas or other chemicals transfer

```

<xs:element name="OilGasChemicalsPipe" type="uro:OilGasChemicalsPipeType" substitutionGroup="uro:Pipe"/>
<xs:complexType name="OilGasChemicalsPipeType">

```

```

<xs:complexContent>
  <xs:extension base="uro:PipeType">
    <xs:sequence/>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.13.2 Utility network node

UtilityNodeType, UtilityNode

Type	Definition
UtilityNode	Network node of the utility facilities: hydrant, curb cock etc.
Property	Definition
previousLink	Previous link id.
nextLink	Next link id.
rotationAngle	Rotation angle to display this facility icon on the 2D map.

```

<xs:element name="UtilityNode" type="uro:UtilityNodeType" abstract="true"
substitutionGroup="uro:UtilityNetworkElement"/>
<xs:complexType name="UtilityNodeType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:UtilityNetworkElementType">
      <xs:sequence>
        <xs:element name="previousLink" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="nextLink" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="rotationAngle" type="xs:double" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

AppurtenanceType, Appurtenance

Type	Definition
Appurtenance	An accessory facility associated with utility link.
Property	Definition
appurtenanceType	Function of this appurtenance.

```

<xs:element name="Appurtenance" type="uro:AppurtenanceType" substitutionGroup="uro:UtilityNode">
<xs:complexType name="AppurtenanceType">
  <xs:complexContent>
    <xs:extension base="uro:UtilityNodeType">
      <xs:sequence>
        <xs:element name="appurtenanceType" type="gml:CodeType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.13.3 Utility network container

UtilityNodeContainerType, UtilityNodeContainerNode

Type	Definition
------	------------

UtilityNodeContainer	Container for Network node, and works as a network node as well.
Property	Definition
containerType	Type of the container
innerDiameterLong	Length of the long edge or major axis of inside.
outerDiameterLong	Length of the long edge or major axis of outside.
innerDiameterShort	Length of the short edge or minor axis of inside.
outerDiameterShort	Length of the short edge or minor axis of outside.
depth	Depth of this container.
appurtenance	Description of the appurtenance in this container.
rotationAngle	Rotation angle to display this facility icon on the 2D map.

```

<xs:element name="UtilityNodeContainer" type="uro:UtilityNodeContainerType" abstract="true"
substitutionGroup="uro:UtilityNetworkElement"/>
<xs:complexType name="UtilityNodeContainerType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:UtilityNetworkElementType">
      <xs:sequence>
        <xs:element name="containerType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="innerDiameterLong" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="outerDiameterLong" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="innerDiameterShort" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="outerDiameterShort" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="appurtenance" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="rotationAngle" type="xs:double" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

ManholeType, ManholeNode

Type	Definition
Manhole	A covered opening in a road that a worker can enter in order to reach underground pipes, wires, or drains that need to be examined or repaired.
Property	Definition
elevation	Elevation of ground surface.

```

<xs:element name="Manhole" type="uro:ManholeType" substitutionGroup="uro:UtilityNodeContainer"/>
<xs:complexType name="ManholeType">
  <xs:complexContent>
    <xs:extension base="uro:UtilityNodeContainerType">
      <xs:sequence>
        <xs:element name="elevation" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

HandholeType, HandholeNode

Type	Definition
------	------------

Handhole	A handhole is a type of manhole, buried underground just deep enough so that its lid is flush with the surface of the ground; its opening is just wide enough for the insertion of one's hand and/or arm.
----------	---

```
<xs:element name="Handhole" type="uro:HandholeType" substitutionGroup="uro:UtilityNodeContainer"/>
<xs:complexType name="HandholeType">
  <xs:complexContent>
    <xs:extension base="uro:UtilityNodeContainerType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

4.2.14 Extended properties for disaster risk

City objects are threatened by natural disasters. It is very important to understand the extent of the risk. Figure 1-21 shows the common properties of city objects to describe disaster risk. These properties are useful for disaster preparedness planning and prioritizing facility management. Furthermore, visualization of these properties on 3D maps can also contribute to raising disaster awareness among citizens.

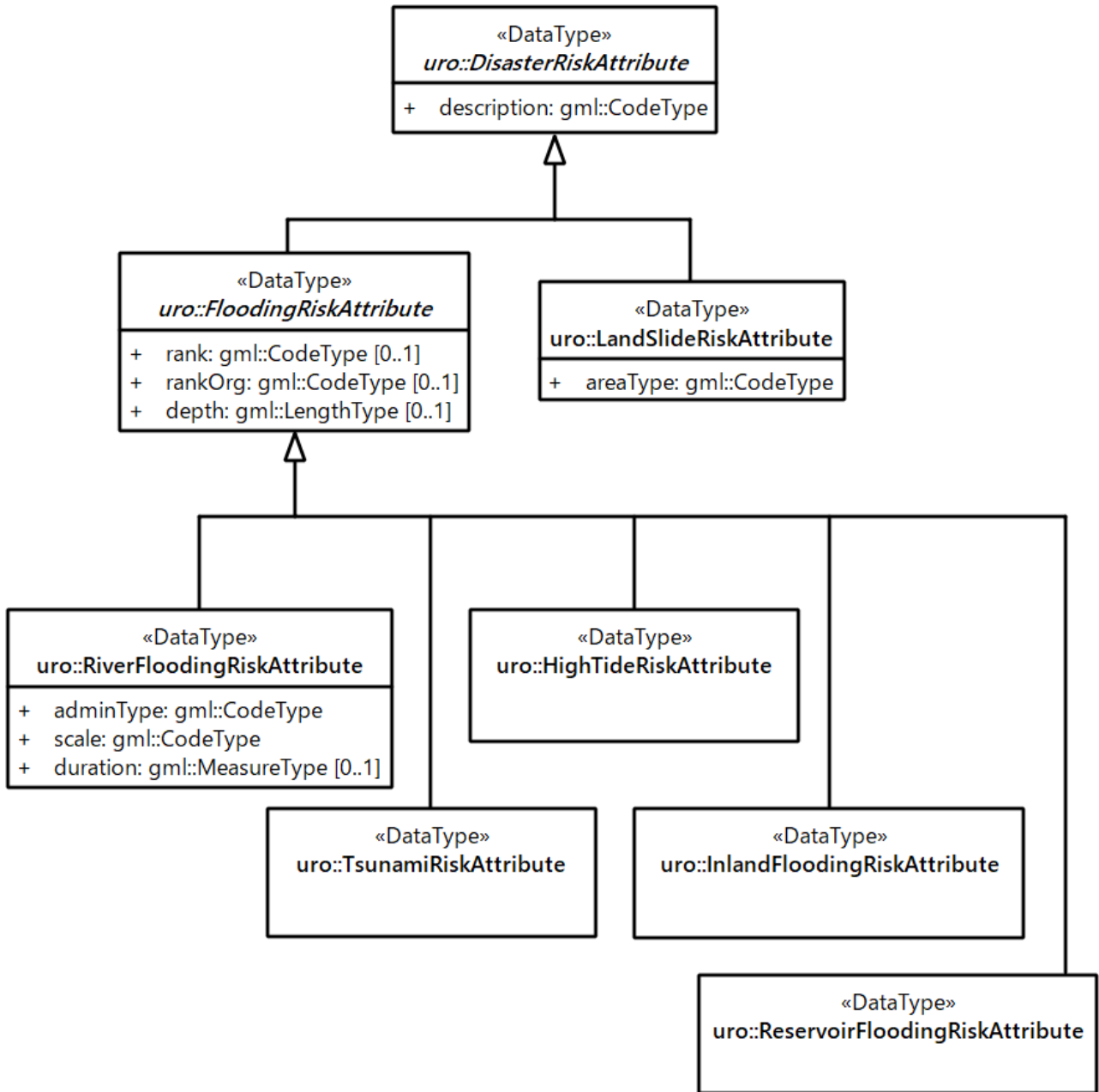


Figure1-21 UML diagram for Disaster Risk

DisasterRiskAttributeType, DisasterRiskAttribute

Type	Definition
DisasterRiskAttribute	Abstract data type for describing natural disaster risk based on location.
Property	Definition
description	Description of disaster risks.

```

<xs:element name="DisasterRiskAttribute" type="uro:DisasterRiskAttributeType" abstract="true"></xs:element>
<xs:complexType name="DisasterRiskAttributeType" abstract="true">
  <xs:sequence>
    <xs:element name="description" type="gml:CodeType"/>
  </xs:sequence>
</xs:complexType>
  
```


FloodingRiskAttributeType, FloodingRiskAttribute

Type	Definition
FloodingRiskAttribute	Abstract data type for describing flooding risk based on location.
Property	Definition
rank	Degree of flooding.
rankOrg	Classification of the degree of inundation based on standardized codes.
depth	Classification of the degree of inundation based on the codes set by municipality.

```
<xs:element name="FloodingRiskAttribute" type="uro:FloodingRiskAttributeType" abstract="true"
substitutionGroup="uro:DisasterRiskAttribute"> </xs:element>
<xs:complexType name="FloodingRiskAttributeType" abstract="true">
<xs:complexContent>
<xs:extension base="uro:DisasterRiskAttributeType">
<xs:sequence>
<xs:element name="rank" type="gml:CodeType" minOccurs="0"/>
<xs:element name="rankOrg" type="gml:CodeType" minOccurs="0"/>
<xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

RiverFloodingRiskAttributeType, RiverFloodingRiskAttribute

Type	Definition
RiverFloodingRiskAttribute	Data type for describing river flooding risk based on location.
Property	Definition
adminType	Type of organization that designated the expected inundation area.
scale	Type of simulation conditions.
duration	Expected duration of inundation.

```
<xs:element name="RiverFloodingRiskAttribute" type="uro:RiverFloodingRiskAttributeType"
substitutionGroup="uro:FloodingRiskAttribute"></xs:element>
<xs:complexType name="RiverFloodingRiskAttributeType">
<xs:complexContent>
<xs:extension base="uro:FloodingRiskAttributeType">
<xs:sequence>
<xs:element name="adminType" type="gml:CodeType"/>
<xs:element name="scale" type="gml:CodeType"/>
<xs:element name="duration" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

LandSlideRiskAttributeType, LandSlideRiskAttribute

Type	Definition
LandSlideRiskAttribute	Data type for describing land slide risk based on location.
Property	Definition
areaType	Area classification of the sediment-related disaster risk area.

```
<xs:element name="LandSlideRiskAttribute" type="uro:LandSlideRiskAttributeType"
substitutionGroup="uro:DisasterRiskAttribute"></xs:element>
```

```

<xs:complexType name="LandslideRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:DisasterRiskAttributeType">
      <xs:sequence>
        <xs:element name="areaType" type="gml:CodeType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

TsunamiRiskAttributeType, TsunamiRiskAttribute

Type	Definition
TsunamiRiskAttribute	Data type for describing tsunami flooding risk based on location.

```

<xs:element name="TsunamiRiskAttribute" type="uro:TsunamiRiskAttributeType"
substitutionGroup="uro:FloodingRiskAttribute"></xs:element>
<xs:complexType name="TsunamiRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FloodingRiskAttributeType"/>
  </xs:complexContent>
</xs:complexType>

```

HighTideRiskAttributeType, HeighTideRiskAttribute

Type	Definition
HeighTideRiskAttribute	Data type for describing high tide flooding risk based on location.

```

<xs:element name="HighTideRiskAttribute" type="uro:HighTideRiskAttributeType"
substitutionGroup="uro:FloodingRiskAttribute"></xs:element>
<xs:complexType name="HighTideRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FloodingRiskAttributeType"/>
  </xs:complexContent>
</xs:complexType>

```

InlandFloodingRiskAttributeType, InlandFloodingRiskAttribute

Type	Definition
InlandFloodingRiskAttribute	Data type for describing inland flooding risk based on location.

```

<xs:element name="InlandFloodingRiskAttribute" type="uro:InlandFloodingRiskAttributeType"
substitutionGroup="uro:FloodingRiskAttribute">
</xs:element>
<xs:complexType name="InlandFloodingRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FloodingRiskAttributeType"/>
  </xs:complexContent>
</xs:complexType>

```

ReservoirFloodingRiskAttributeType, ReservoirFloodingRiskAttribute

Type	Definition
ReservoirFloodingRiskAttribute	Data type for describing reservoir flooding risk based on location.

```

<xs:element name="ReservoirFloodingRiskAttribute" type="uro:ReservoirFloodingRiskAttributeType"
substitutionGroup="uro:FloodingRiskAttribute">
</xs:element>
<xs:complexType name="ReservoirFloodingRiskAttributeType">
<xs:complexContent>
<xs:extension base="uro:FloodingRiskAttributeType"/>
</xs:complexContent>
</xs:complexType>

```

4.2.15 Extended properties for code type attribute

A *uro:KeyValuePairAttribute* is a common data type for extended attributes of city objects. This data type works as `gen:_genericAttribute` in CityGML generic module, but has additional attribute for code type and can provide a name list of extended attributes.

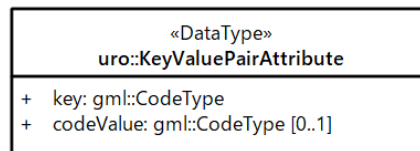


Figure1-22 UML diagram of properties for KeyValuePairAttribute

KeyValuePairAttribute, KeyValuePairAttributeType

Type	Definition
KeyValuePairAttribute	A pair of attribute name and attribute value, which is an extension mechanism for additional information of a city object which is not defined in this module and CityGML.
Property	Definition
key	Name of an attribute.
codeValue	Code value of the attribute.

```

<xs:element name="KeyValuePairAttribute" type="uro:KeyValuePairAttributeType"/>
<xs:complexType name="KeyValuePairAttributeType">
<xs:sequence>
<xs:element name="key" type="gml:CodeType"/>
<xs:element name="codeValue" type="gml:CodeType"/>
</xs:sequence>
</xs:complexType>

```

4.2.16 Extended properties for data quality

A *uro>DataQualityAttribute* is a common data type among city objects used for describing data quality.

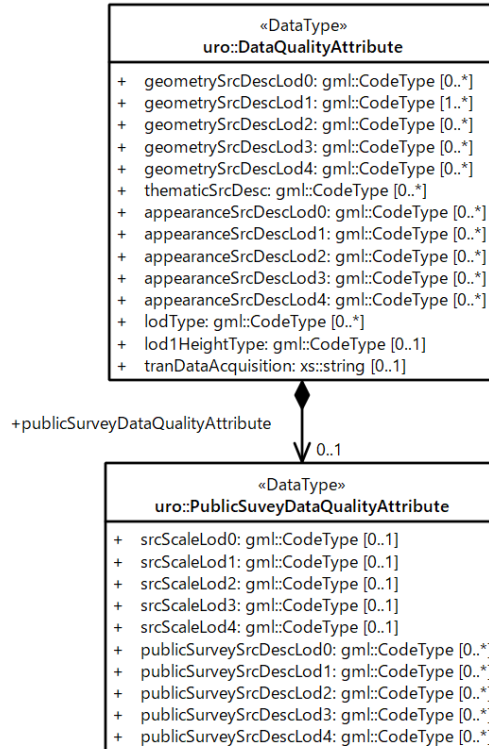


Figure1-23 UML diagram of properties for data quality

DataQualityAttributeType, DataQualityAttribute

Type	Definition
DataQualityAttribute	lineage information when creating data. This is “not” property of city objects. To ensure the schema validation, i-UR defines metadata property for feature instance.
Property	Definition
geometrySrcDescLod0	Type of resources for LOD0 geometric attribute of this instance.
geometrySrcDescLod1	Type of resources for LOD1 geometric attribute of this instance.
geometrySrcDescLod2	Type of resources for LOD2 geometric attribute of this instance.
geometrySrcDescLod3	Type of resources for LOD3 geometric attribute of this instance.
geometrySrcDescLod4	Type of resources for LOD4 geometric attribute of this instance.
thematicSrcDesc	Type of resources for thematic attribute of this instance.
appearanceSrcDescLod0	Type of resources for texture appearance of this instance with LOD0 geometry.
appearanceSrcDescLod1	Type of resources for texture appearance of this instance with LOD1 geometry.
appearanceSrcDescLod2	Type of resources for texture appearance of this instance with LOD2 geometry.
appearanceSrcDescLod3	Type of resources for texture appearance of this instance with LOD3 geometry.
appearanceSrcDescLod4	Type of resources for texture appearance of this instance with LOD4 geometry.
lodType	Detailed LOD type for this instance.
lod1HeightType	Height used for LOD1 solid generation.
tranDataAcquisition	Additional description of data acquisition. This attribute is for interoperability with Road Fundamental Map Information.

```

<xs:element name="DataQualityAttribute" type="uro:DataQualityAttributeType"/>
<xs:complexType name="DataQualityAttributeType">
  <xs:sequence>
    <xs:element name="geometrySrcDescLod0" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="geometrySrcDescLod1" type="gml:CodeType" minOccurs="1" maxOccurs="unbounded"/>
    <xs:element name="geometrySrcDescLod2" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="geometrySrcDescLod3" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="geometrySrcDescLod4" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="thematicSrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod0" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod1" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod2" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod3" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod3" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod4" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="tranDataAcquisition" type="xs:string" minOccurs="0"/>
    <xs:element name="lod1HeightType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="lodType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>

```

PublicSurveyDataQualityAttributeType, PublicSurveyDataQualityAttribute

Type	Definition
PublicSurveyDataQualityAttribute	lineage information when creating data. This is “not” property of city objects. To ensure the schema validation, i-UR defines metadata property for feature instance.
Property	Definition
srcScaleLod0	Map scale applied this instance of Lod0 geometry.
srcScaleLod1	Map scale applied this instance of Lod1 geometry.
srcScaleLod2	Map scale applied this instance of Lod2 geometry.
srcScaleLod3	Map scale applied this instance of Lod3 geometry.
srcScaleLod4	Map scale applied this instance of Lod4 geometry.
publicSurveySrcDescLod0	Type of public survey resources for this instance with LOD0 geometry.
publicSurveySrcDescLod1	Type of public survey resources for this instance with LOD1 geometry.
publicSurveySrcDescLod2	Type of public survey resources for this instance with LOD2 geometry.
publicSurveySrcDescLod3	Type of public survey resources for this instance with LOD3 geometry.
publicSurveySrcDescLod4	Type of public survey resources for this instance with LOD4 geometry.

```

<xs:element name="DataQualityAttribute" type="uro:DataQualityAttributeType"/>
<xs:complexType name="DataQualityAttributeType">
  <xs:sequence>
    <xs:element name="geometrySrcDescLod0" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="geometrySrcDescLod1" type="gml:CodeType" minOccurs="1" maxOccurs="unbounded"/>
    <xs:element name="geometrySrcDescLod2" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="geometrySrcDescLod3" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="geometrySrcDescLod4" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="thematicSrcDesc" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod0" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod1" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod2" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod3" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod3" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="appearanceSrcDescLod4" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>

```

```
</xs:complexType>
```

4.2.17 Extended properties for facility management

The Urban Object module defines the information required for facility management as data types. The information for facility management differs according to each domain. Figure1-24 shows the structure of data types for facility management.

The *uro::FacilityIdAttribute* identifies the location of the facility. The *uro::FacilityTypeAttribute* is a data type for classifying facilities according to domain-specific categories. The *uro::FacilityAttribute* is a root class of data types for describing thematic attributes specific to facilities classified according to domain-specific categories.

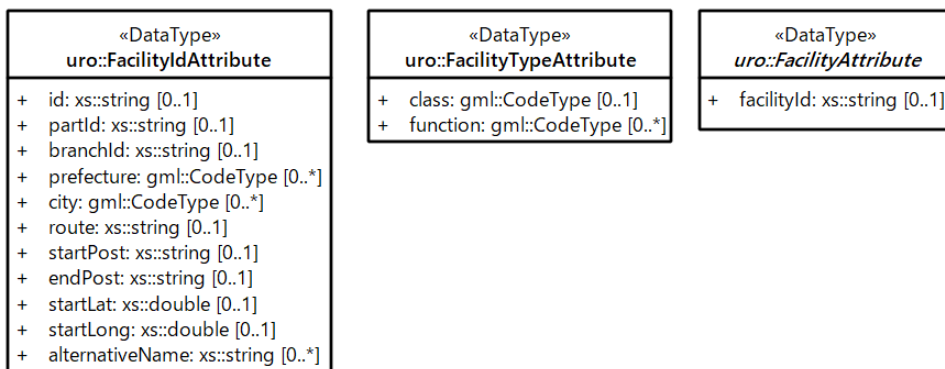


Figure1-24 UML diagram of properties for facility management

FacilityIdAttributeType, FacilityIdAttribute

Type	Definition
FacilityIdAttribute	Description of the location of the facility.
Property	Definition
id	Unique facility ID in the municipality.
partID	Unique facility part ID for each part of a facility.
branchID	Branch ID for accessories of a facility
prefecture	Prefecture name of the facility location.
city	City name of the facility location.
route	Route name on which the facility locates.
startPost	Distance from the starting point to the beginning of this facility
endPost	Distance from the starting point to the ending of this facility
startLat	Latitude of the starting point to the beginning of this facility.
startLong	Longitude of the starting point to the beginning of this facility
alternative Name	Alternative names that can identify the facility.

```

<xs:element name="FacilityIdAttribute" type="uro:FacilityIdAttributeType"/>
<xs:complexType name="FacilityIdAttributeType">
  <xs:sequence>
    <xs:element name="id" type="xs:string" minOccurs="0"/>
    <xs:element name="partId" type="xs:string" minOccurs="0"/>
    <xs:element name="branchId" type="xs:string" minOccurs="0"/>
    <xs:element name="prefecture" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="city" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="route" type="xs:string" minOccurs="0"/>
  
```

```

<xs:element name="startPost" type="xs:string" minOccurs="0"/>
<xs:element name="endPost" type="xs:string" minOccurs="0"/>
<xs:element name="startLat" type="xs:double" minOccurs="0"/>
<xs:element name="startLong" type="xs:double" minOccurs="0"/>
<xs:element name="alternativeName" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>

```

FacilityTypeAttributeType, FacilityTypeAttribute

Type	Definition
FacilityTypeAttribute	Classification of the facility.
Property	Definition
class	Indicates the specific type of the facility.
function	Specifies the intended purposes of the facility.

```

<xs:element name="FacilityTypeAttribute" type="uro:FacilityTypeAttributeType"/>
<xs:complexType name="FacilityTypeAttributeType">
  <xs:sequence>
    <xs:element name="class" type="gml:CodeType" minOccurs="0"/></xs:element>
    <xs:element name="function" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>

```

FacilityAttributeType, FacilityAttribute

Type	Definition
FacilityAttribute	The root class for describing thematic attributes of the facility.
Property	Definition
facilityId	Identifier assigned to each type of facility.

```

<xs:element name="FacilityAttribute" type="uro:FacilityAttributeType" abstract="true"/>
<xs:complexType name="FacilityAttributeType" abstract="true">
  <xs:sequence>
    <xs:element name="facilityId" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

4.2.17.1 Extended properties for river facility management

Figure1-25 shows the specific data type for location identification in river facility management.

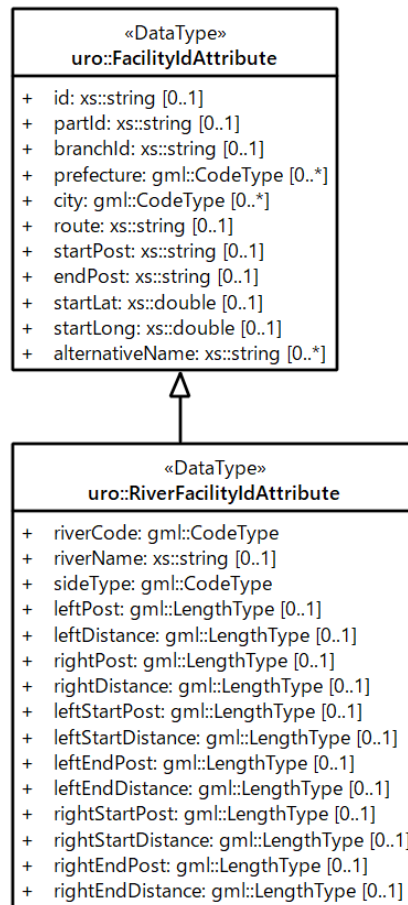


Figure1-25 UML diagram of properties for river facility management

RiverFacilityIdAttributeType, RiverFacilityIdAttribute

Type	Definition
RiverFacilityIdAttribute	Description of the location of the river facility.
Property	Definition
riverCode	Description of the location of the river facility.
river Name	Definition
sideType	Unique code of the river.
leftPost	Name of the river.
leftDistance	Distinction between right bank and left bank
rightPost	The name of the nearest post on the left bank.
rightDistance	Distance from the nearest post on the left bank.
lefStartPost	The name of the nearest post on the left bank from the upstream edge of the facility.
leftStartDistance	Distance from the nearest post on the left bank from the upstream edge of the facility.
leftEndPost	The name of the nearest post on the left bank from the downstream edge of the facility.
leftEndDistance	Distance from the nearest post on the left bank from the downstream edge of the facility.
rightStartPost	The name of the nearest post on the right bank from the upstream edge of the facility.
rightStartDistance	Distance from the nearest post on the right bank from the upstream edge of the facility.
rightEndPost	The name of the nearest post on the right bank from the downstream edge of the facility.
rightEndDistance	Distance from the nearest post on the right bank from the downstream edge of the facility.


```

<xs:element name="RiverFacilityIdAttribute" type="uro:RiverFacilityIdAttributeType"
substitutionGroup="uro:FacilityIdAttribute"/>
<xs:complexType name="RiverFacilityIdAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:RiverFacilityIdAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="RiverFacilityIdAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FacilityIdAttributeType">
      <xs:sequence>
        <xs:element name="riverCode" type="gml:CodeType"/>
        <xs:element name="riverName" type="xs:string" minOccurs="0"/>
        <xs:element name="sideType" type="gml:CodeType"/>
        <xs:element name="leftPost" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="leftDistance" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="rightPost" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="rightDistance" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="leftStartPost" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="leftStartDistance" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="leftEndPost" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="leftEndDistance" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="rightStartPost" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="rightStartDistance" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="rightEndPost" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="rightEndDistance" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.17.2 Extended properties for port facility management

Figure1-26 shows data types to add thematic attributes to port facilities, these attributes are used for port facility management. These data types are commonly used as a part of city objects, e.g., bldg::Building, frn::CityFurniture.

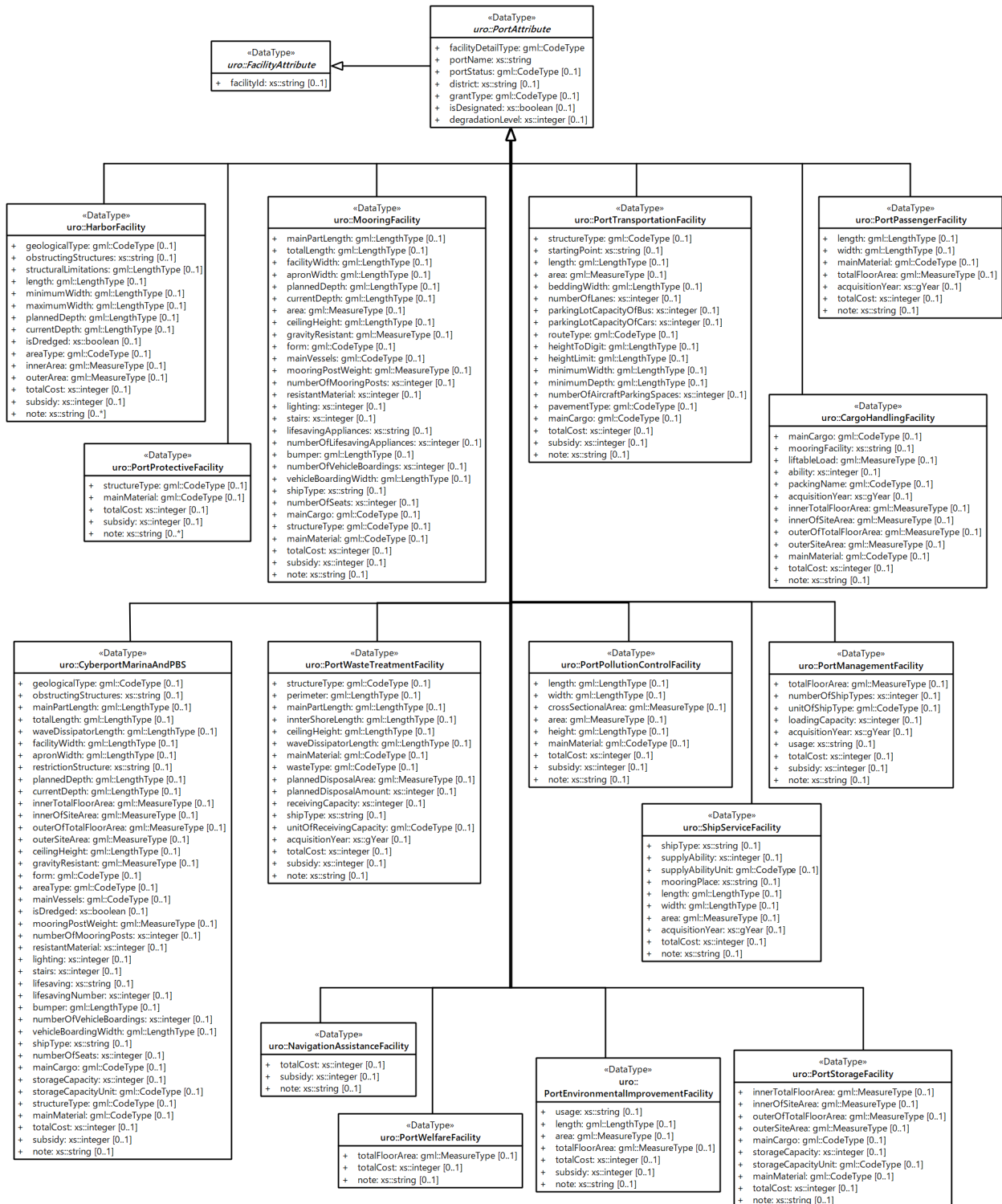


Figure1-26 UML diagram of properties for port facility management

PortAttributeType, PortAttribute

Type	Definition
PortAttribute	The abstract root class for port facility management
Property	Definition
portFacilityDetailsType	Detail type of the port facility
portName	Name of the port
portStatus	Status of the port
district	District name
grantType	The grant type for port construction.
isDesignated	Flag whether the port is designated or not 鴨
degradationLevel	The level of degradation.

```

<xs:element name="PortAttribute" type="uro:PortAttributeType" abstract="true"
substitutionGroup="uro:FacilityAttribute"/>
<xs:complexType name="PortAttributeType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:FacilityAttributeType">
      <xs:sequence>
        <xs:element name="portFacilityDetailsType" type="gml:CodeType"/>
        <xs:element name="portName" type="xs:string"/>
        <xs:element name="portStatus" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="district" type="xs:string" minOccurs="0"/>
        <xs:element name="grantType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="isDesignated" type="xs:boolean" minOccurs="0"/>
        <xs:element name="degradationLevel" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

HarborFacilityType, HarborFacility

Type	Definition
HarborFacility	Facility in harbour.
Property	Definition
geologicalType	Geological types of the seafloor.
obstructingStructures	Name of the obstructing structure.
structuralLimitations	Structural limitations
length	Total length of the facility.
minimumWidth	Minimum width
maximumWidth	Maximum width
plannedDepth	Planned depth.
currentDepth	Actual depth.
isDredged	Classification whether the port is dredged.
areaType	Classification of inside and outside of breakwaters 0: inside breakwaters, 1: outside breakwaters.
innerArea	Area inside the district.
outerArea	Area outside the district.
totalCost	Total Construction cost.
subsidy	Amount of subsidy.
note	Other remarks.

```

<xs:element name="HarborFacility" type="uro:HarborFacilityType" substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="HarborFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>

```

```

<xs:element name="geologicalType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="obstructingStructures" type="xs:string" minOccurs="0"/>
<xs:element name="structuralLimitations" type="gml:LengthType" minOccurs="0"/>
<xs:element name="length" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minimumWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maximumWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="plannedDepth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="currentDepth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="isDredged" type="xs:boolean" minOccurs="0"/>
<xs:element name="areaType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="innerArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="outerArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
<xs:element name="subsidy" type="xs:integer" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

PortProtectiveFacilityType, PortProtectiveFacility

Type	Definition
PortProtectiveFacility	Facility for port protection.
Property	Definition
structureType	Type of structure.
mainMaterial	Type of main material.
totalCost	Total Construction cost.
subsidy	Amount of subsidy.
note	Other remarks.

```

<xs:element name="PortProtectiveFacility" type="uro:PortProtectiveFacilityType"
substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="PortProtectiveFacilityType">
<xs:complexContent>
<xs:extension base="uro:PortAttributeType">
<xs:sequence>
<xs:element name="structureType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
<xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
<xs:element name="subsidy" type="xs:integer" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

MooringFacilityType, MooringFacility

Type	Definition
MooringFacility	Facility for mooring.
Property	Definition
mainPartLength	Main part length of the facility.
totalLength	Total length of the facility.
facilityWidth	Width of the facility.
apronWidth	Width of the facility apron.
plainedDepth	Planned depth.
currentDepth	Actual depth.
area	Total area of the facility.

ceilingHeight	Ceiling Height of the facility.
gravityResistant	Gravity resistant.
form	Type of the fonn.
mainVessels	Type of main vessels
mooringPostWeight	Weight of mooring post.
numberOfMooringPosts	Number of mooring posts.
resistantMaterial	Type of resistant material.
lighting	Type of lighting.
stairs	Type of stairs.
lifesavingAppliances	Type of lifesaving.
numberOfLifesavingAppliances	Number of lifesavings.
bumper	Type of bumper.
numberOfVehicleBoardings	Number of vehicle boardings
vehicleBoardingWidth	Width of vehicle boarding.
shipType	Type of the target ship.
numberOfSeats	Weight of mooring post.
mainCargo	Type of main cargo.
structureType	Type of structure.
mainMaterial	Type of main material.
totalCost	Total Construction cost.
subsidy	Amount of subsidy.
note	Other remarks.

```

<xs:element name="MooringFacility" type="uro:MooringFacilityType" substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="MooringFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="mainPartLength" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="totalLength" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="facilityWidth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="apronWidth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="plannedDepth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="currentDepth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="ceilingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="gravityResistant" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="form" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="mainVessels" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="mooringPostWeight" type="gml:MeasureType" minOccurs="0"/></xs:element>
        <xs:element name="numberOfMooringPosts" type="xs:integer" minOccurs="0"/>
        <xs:element name="resistantMaterial" type="xs:integer" minOccurs="0"/>
        <xs:element name="lighting" type="xs:integer" minOccurs="0"/>
        <xs:element name="stairs" type="xs:integer" minOccurs="0"/>
        <xs:element name="lifesavingAppliances" type="xs:string" minOccurs="0"/>
        <xs:element name="numberOfLifesavingAppliances" type="xs:integer" minOccurs="0"/>
        <xs:element name="bumper" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="numberOfVehicleBoardings" type="xs:integer" minOccurs="0"/>
        <xs:element name="vehicleBoardingWidth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="shipType" type="xs:string" minOccurs="0"/>
        <xs:element name="numberOfSeats" type="xs:integer" minOccurs="0"/>
        <xs:element name="mainCargo" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="structureType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
        <xs:element name="subsidy" type="xs:integer" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

PortAttributeType, PortAttribute

Type	Definition
PortTransportationFacility	Facility for port transportation.
Property	Definition
structureType	Type of the structure
startingPoint	Name of the starting point
length	Length.
area	Area.
beddingWidth	width of the bedding.
numberOfLanes	Number of lanes.
parkingLotCapacityOfBus	Number of parking lot capacity of bus.
parkingLotCapacityOfCars	Number of parking lot capacity of cars.
routeType	Type of the route.
heightToDigit	Height to digit.
heightLimit	Height limitation
minimumWidth	Minimum width
minimumDepth	Minimum depth
numberOfAircraftParkingSpaces	Number of aircraft parking spaces.
pavementType	Pavement type.
mainCargo	Type of main cargo.
totalCost	Total Construction cost.
subsidy	Amount of subsidy.
note	Other remarks.

```

<xs:element name="PortTransportationFacility" type="uro:PortTransportationFacilityType"
substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="PortTransportationFacilityType">
<xs:complexContent>
<xs:extension base="uro:PortAttributeType">
<xs:sequence>
<xs:element name="structureType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="startingPoint" type="xs:string" minOccurs="0"/>
<xs:element name="length" type="gml:LengthType" minOccurs="0"/>
<xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="beddingWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="numberOfLanes" type="xs:integer" minOccurs="0"/>
<xs:element name="parkingLotCapacityOfBus" type="xs:integer" minOccurs="0"/>
<xs:element name="parkingLotCapacityOfCars" type="xs:integer" minOccurs="0"/>
<xs:element name="routeType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="heightToDigit" type="gml:LengthType" minOccurs="0"/>
<xs:element name="heightLimit" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minimumWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minimumDepth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="numberOfAircraftParkingSpaces" type="xs:integer" minOccurs="0"/>
<xs:element name="pavementType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="mainCargo" type="gml:CodeType" minOccurs="0"/>
<xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
<xs:element name="subsidy" type="xs:integer" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>

```

```
</xs:complexType>
```

NavigationAssistanceFacilityType, NavigationAssistanceFacility

Type	Definition
NavigationAssistanceFacility	Port facility for navigation.
Property	Definition
totalCost	Total Construction cost.
subsidy	Amount of subsidy.
note	Other remarks.

```
<xs:element name="NavigationAssistanceFacility" type="uro:NavigationAssistanceFacilityType"
substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="NavigationAssistanceFacilityPropertyType">
  <xs:sequence>
    <xs:element ref="uro:NavigationAssistanceFacility"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="NavigationAssistanceFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
        <xs:element name="subsidy" type="xs:string" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

CargoHandlingFacilityType, CargoHandlingFacility

Type	Definition
CargoHandlingFacility	Port facility for handling cargos.
Property	Definition
mainCargo	Type of main cargo.
mooringFacility	Type or mooring facility.
liftableLoad	Total liftable load
ability	Ability of the facility.
packingName	Name of packing.
acquisitionYear	Acquisition year.
innerTotalFloorArea	Total floor area in the port side district.
innerOfSiteArea	Site area in the port side district.
outerOfTotalFloorArea	Total floor area outside the port side district.
outerSiteArea	Site area outside the port side district.
mainMaterial	Type of main material.
totalCost	Total Construction cost.
note	Other remarks.

```
<xs:element name="CargoHandlingFacility" type="uro:CargoHandlingFacilityType"
substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="CargoHandlingFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="mainCargo" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="mooringFacility" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

```

<xs:element name="liftableLoad" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="ability" type="xs:integer" minOccurs="0"/>
<xs:element name="packingName" type="gml:CodeType" minOccurs="0"/>
<xs:element name="acquisitionYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="innerTotalFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="innerOfSiteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="outerOfTotalFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="outerSiteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
<xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

PortPassengerFacilityType, PortPassengerFacility

Type	Definition
PortPassengerFacility	Port facility for passengers.
Property	Definition
length	Total length
width	Total width
main Material	Type of main material.
totalFloor Area	Total floor area.
acquisitionYear	Acquisition year.
totalCost	Total Construction cost.
note	Other remarks

```

<xs:element name="PortPassengerFacility" type="uro:PortPassengerFacilityType"
substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="PortPassengerFacilityType">
<xs:complexContent>
<xs:extension base="uro:PortAttributeType">
<xs:sequence>
<xs:element name="length" type="gml:LengthType" minOccurs="0"/>
<xs:element name="width" type="gml:LengthType" minOccurs="0"/>
<xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
<xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="acquisitionYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

PortStorageFacilityType, PortStorageFacility

Type	Definition
PortStorageFacility	Port facility for storage.
Property	Definition
innerTotalFloorArea	Total floor area in the port side district.
innerOfSiteArea	Site area in the port side district.
outerOfTotalFloorArea	Total floor area outside the port side district.
outerSiteArea	Site area outside the port side district.
mainCargo	Type of main cargo.
storageCapacity	Storage capacity.
storageCapacityUnit	Storage capacity unit.

mainMaterial	Type of main material.
totalCost	Total Construction cost.
note	Other remarks.

```

<xs:element name="PortStorageFacility" type="uro:PortStorageFacilityType" substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="PortStorageFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="innerTotalFloorArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="innerOfSiteArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="outerOfTotalFloorArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="outerSiteArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="mainCargo" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="storageCapacity" type="xs:integer" minOccurs="0"/>
        <xs:element name="storageCapacityUnit" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

ShipServiceFacilityType, ShipServiceFacility

Type	Definition
ShipServiceFacility	Port facility for ship service.
Property	Definition
shipType	Type of target ships.
supplyAbility	Amount of the supply ability.
supplyAbilityUnit	Unit of supplyability.
mooringPlace	Place for mooring.
length	Total length.
width	Total width.
area	Total area of the facility.
acquisitionYear	Acquisition year.
totalCost	Total Construction cost.
note	Other remarks.

```

<xs:element name="ShipServiceFacility" type="uro:ShipServiceFacilityType" substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="ShipServiceFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="shipType" type="xs:string" minOccurs="0"/>
        <xs:element name="supplyAbility" type="xs:integer" minOccurs="0"/>
        <xs:element name="supplyAbilityUnit" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="mooringPlace" type="xs:string" minOccurs="0"/>
        <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="acquisitionYear" type="xs:gYear" minOccurs="0"/>
        <xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>

```

```
</xs:complexType>
```

PortWasteTreatmentFacilityType, PortWasteTreatmentFacility

Type	Definition
PortWasteTreatmentFacility	Port facility for waste treatment.
Property	Definition
structureType	Type of the structure.
perimeter	Perimeter.
mainPartLength	Main part length of the facility.
innerShoreLength	Total length in the shore.
ceilingHeight	Ceiling height
waveDissipatorLength	Length of the wave dissipator.
mainMaterial	Type of main material.
wasteType	Type of the waste.
plannedDisposalArea	Planned disposal area.
plannedDisposalAmount	Planned disposal amount
receivingCapacity	Receiving capacity
shipType	Target ship type.
unitOfReceivingCapacity	Unit of receiving capacity.
acquisitionYear	Acquisition year.
totalCost	Total Construction cost.
subsidy	Amount of subsidy.
note	Other remarks.

```
<xs:element name="PortWasteTreatmentFacility" type="uro:PortWasteTreatmentFacilityType"
substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="PortWasteTreatmentFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="structureType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="perimeter" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="mainPartLength" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="innerShoreLength" type="gml:LengthType" minOccurs="0"/></xs:element>
        <xs:element name="ceilingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="waveDissipatorLength" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="wasteType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="plannedDisposalArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="plannedDisposalAmount" type="xs:integer" minOccurs="0"/>
        <xs:element name="receivingCapacity" type="xs:integer" minOccurs="0"/>
        <xs:element name="shipType" type="xs:string" minOccurs="0"/>
        <xs:element name="unitOfReceivingCapacity" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="acquisitionYear" type="xs:gYear" minOccurs="0"/>
        <xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
        <xs:element name="subsidy" type="xs:integer" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

PortEnvironmentalImprovementFacilityType, PortEnvironmentalImprovementFacility

Type	Definition
PortEnvironmentalImprovementFacility	PortAttribute
Property	Definition

usage	Usage of the facility.
length	Total length
area	Total area
totalFloorArea	Total floor area.
totalCost	Total Construction cost.
subsidy	Amount of subsidy.
note	Other remarks.

```

<xs:element name="PortEnvironmentalImprovementFacility" type="uro:PortEnvironmentalImprovementFacilityType"
substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="PortEnvironmentalImprovementFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="usage" type="xs:string" minOccurs="0"/>
        <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
        <xs:element name="subsidy" type="xs:integer" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

PortPollutionControlFacilityType, PortPollutionControlFacility

Type	Definition
PortPollutionControlFacility	Port facility for pollution control.
Property	Definition
length	Total length
width	Total width
crossSectionalArea	Cross sectional area
area	Total area.
height	Maximum height
mainMaterial	Type of main material.
totalCost	Total Construction cost.
subsidy	Amount of subsidy.
note	Other remarks.

```

<xs:element name="PortPollutionControlFacility" type="uro:PortPollutionControlFacilityType"
substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="PortPollutionControlFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="crossSectionalArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="height" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
        <xs:element name="subsidy" type="xs:integer" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```
</xs:complexContent>
</xs:complexType>
```

PortWelfareFacilityType, PortWelfareFacility

Type	Definition
PortWelfareFacility	Port facility for welfare service.
Property	Definition
totalFloorArea	Total floor area.
totalCost	Total construction cost.
note	Other remarks.

```
<xs:element name="PortWelfareFacility" type="uro:PortWelfareFacilityType" substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="PortWelfareFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

PortManagementFacilityType, PortManagementFacility

Type	Definition
PortManagementFacility	Facility for port management.
Property	Definition
totalFloorArea	Total floor area.
numberOfShipTypes	Number of ship types.
unitOfShipType	Unit of ship type.
loadingCapacity	Maximum loading capacity.
acquisitionYear	Acquisition year.
usage	Main usage.
totalCost	Total Construction cost.
subsidy	Amount of subsidy.
note	Other remarks.

```
<xs:element name="PortManagementFacility" type="uro:PortManagementFacilityType"
substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="PortManagementFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="numberOfShipTypes" type="xs:integer" minOccurs="0"/>
        <xs:element name="unitOfShipType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="loadingCapacity" type="xs:integer" minOccurs="0"/>
        <xs:element name="acquisitionYear" type="xs:gYear" minOccurs="0"/>
        <xs:element name="usage" type="xs:string" minOccurs="0"/>
        <xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
        <xs:element name="subsidy" type="xs:integer" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

CyberportMarinaAndPBSType, CyberportMarinaAndPBS

Type	Definition
CyberportMarinaAndPBS	Facility for marina and PBS(Pleasure boat spot).
Property	Definition
geologicalType	Geological types of the seafloor.
obstructingStructures	Name of the obstructing structure.
mainPartLength	Main part length of the facility.
totalLength	Total length of the facility.
waveDissipatorLength	Length of the wave dissipator.
facilityWidth	Width of the facility.
apronWidth	Width of the facility apron.
restrictionStructure	Other restrictions by structure.
plannedDepth	Planned depth.
currentDepth	Actual depth.
innerTotalFloorArea	Total floor area in the port side district.
innerOfSiteArea	Site area in the port side district.
outerOfTotalFloorArea	Total floor area outside the port side district.
outerSiteArea	Site area outside the port side district.
ceilingHeight	Ceiling Height of the facility.
gravityResistant	Gravity resistant.
form	Type of the form.
areaType	Classification of inside and outside of breakwaters 0: inside breakwaters, 1: outside breakwaters.
mainVessels	Type of main vessels
isDredged	Classification whether the port is dredged.
mooringPostWeight	Weight of mooring post.
numberOfMooringPosts	Number of mooring posts.
resistantMaterial	Type of resistant material.
lighting	Type of lighting.
stairs	Type of stairs.
lifesaving	Type of lifesaving.
lifesavingNumber	Number of lifesavings.
bumper	Type of bumper.
numberOfVehicleBoardings	Number of vehicle boardings
vehicleBoardingWidth	Width of vehicle boarding.
shipType	Type of the target ship.
numberOfSeats	Number of seats of the target ship.
mainCargo	Type of main cargo.
storageCapacity	Storage capacity.
storageCapacityUnit	Storage capacity unit.
structureType	Type of structure.
mainMaterial	Type of main material.
totalCost	Total Construction cost.
subsidy	Amount of subsidy.
note	Other remarks.

```

<xs:element name="CyberportMarinaAndPBS" type="uro:PortAttribute"
substitutionGroup="uro:PortAttribute"/>
<xs:complexType name="CyberportMarinaAndPBSType">
  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
        <xs:element name="geologicalType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="obstructingStructures" type="xs:string" minOccurs="0"/>
        <xs:element name="mainPartLength" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="totalLength" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

<xs:element name="waveDissipatorLength" type="gml:LengthType" minOccurs="0"/>
<xs:element name="facilityWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="apronWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="restrictionStructure" type="xs:string" minOccurs="0"/>
<xs:element name="plannedDepth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="currentDepth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="innerTotalFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="innerOfSiteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="outerOfTotalFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="outerSiteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="ceilingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="gravityResistant" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="form" type="gml:CodeType" minOccurs="0"/>
<xs:element name="areaType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="mainVessels" type="gml:CodeType" minOccurs="0"/>
<xs:element name="isDredged" type="xs:boolean" minOccurs="0"/>
<xs:element name="mooringPostWeight" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="numberOfMooringPosts" type="xs:integer" minOccurs="0"/>
<xs:element name="resistantMaterial" type="xs:integer" minOccurs="0"/>
<xs:element name="lighting" type="xs:integer" minOccurs="0"/>
<xs:element name="stairs" type="xs:integer" minOccurs="0"/>
<xs:element name="lifesaving" type="xs:string" minOccurs="0"/>
<xs:element name="lifesavingNumber" type="xs:integer" minOccurs="0"/>
<xs:element name="bumper" type="gml:LengthType" minOccurs="0"/>
<xs:element name="numberOfVehicleBoardings" type="xs:integer" minOccurs="0"/>
<xs:element name="vehicleBoardingWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="shipType" type="xs:string" minOccurs="0"/>
<xs:element name="numberOfSeats" type="xs:integer" minOccurs="0"/>
<xs:element name="mainCargo" type="gml:CodeType" minOccurs="0"/>
<xs:element name="storageCapacity" type="xs:integer" minOccurs="0"/>
<xs:element name="storageCapacityUnit" type="gml:CodeType" minOccurs="0"/>
<xs:element name="structureType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
<xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
<xs:element name="subsidy" type="xs:integer" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.17.3 Extended properties for fishport facility management

Figure1-27 shows data types to add thematic attributes to port facilities, these attributes are used for port facility management. These data types are commonly used as a part of city objects, e.g., bldg::Building, frn::CityFurniture.

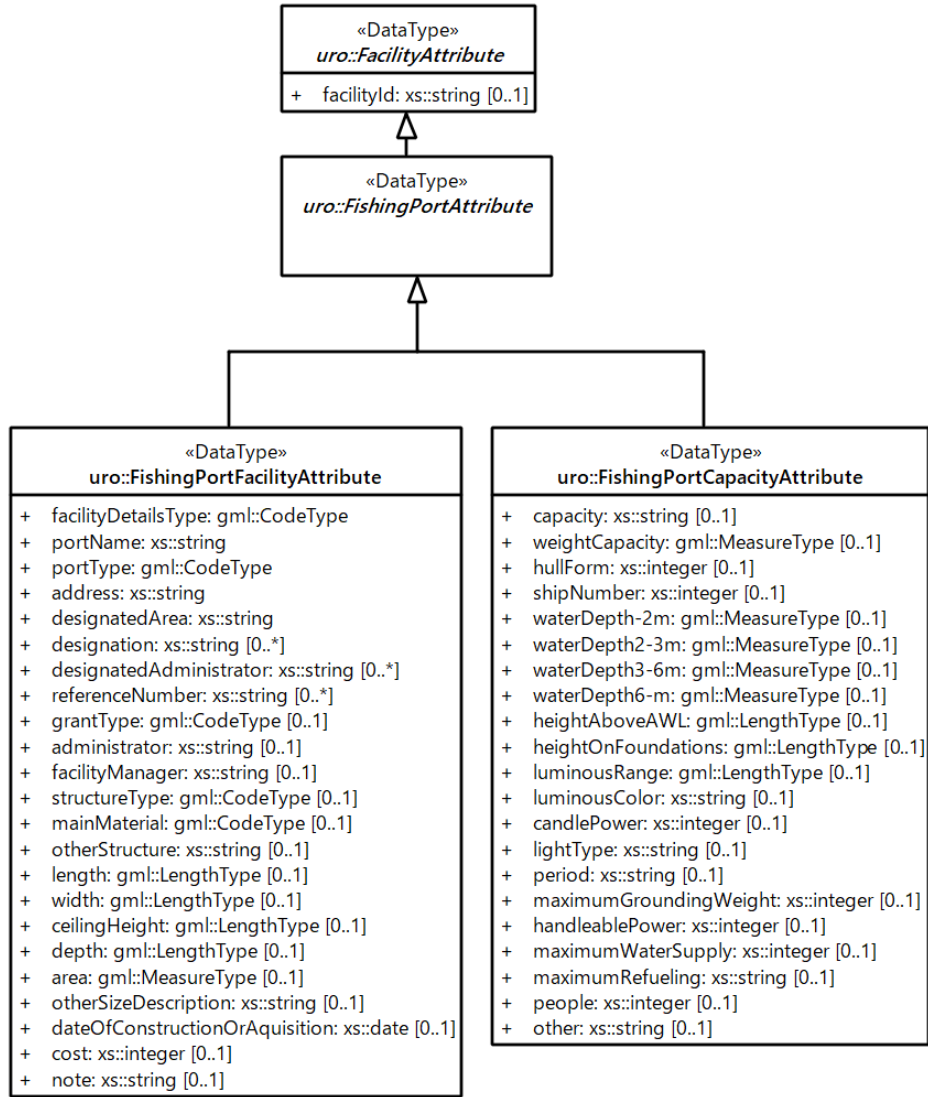


Figure1-27 UML diagram of properties for fishing port facility management

FishingPortAttributeType, FishingPortAttribute

Type	Definition
FishingPortAttribute	The abstract root class for fishing port facility management

```

<xs:element name="FishingPortAttribute" type="uro:FishingPortAttributeType" abstract="true"
substitutionGroup="uro:FacilityAttribute"/>
<xs:complexType name="FishingPortAttributeType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:FacilityAttributeType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

FishingPortFacilityType, FishingPortFacility

Type	Definition
FishingPortFacility	A facility for Fishery.
Property	Definition

facilityDetailsType	Detail type of the facility.
portName	Name of the fishing port.
portType	Type of the fishing port.
address	Address of the fishing port.
designatedArea	Name of the designated area.
designation	Type of the designation.
designatedAdministrator	Designation of the administrator.
referenceNumber	Referencing number in the administrative drawings.
grantType	Type of the grant.
administrator	Name of the administrator.
facilityManager	Name of the facility manager.
structureType	Type of the structure.
mainMaterial	Type of the main materials.
otherStructure	Other description regarding the structure
length	Total length.
width	Total width.
ceilingHeight	Ceiling height
depth	Depth of the sea floor.
area	Total area.
otherSizeDescription	Other description regarding the port size.
dateOfConstructionOrAcquisition	Date of construction completion or acquisition.
cost	Total construction or acquisition cost
note	Other remarks.

```

<xs:element name="FishingPortFacility" type="uro:FishingPortFacilityType"
substitutionGroup="uro:FishingPortAttribute"/>
<xs:complexType name="FishingPortFacilityType">
  <xs:complexContent>
    <xs:extension base="uro:FishingPortAttributeType">
      <xs:sequence>
        <xs:element name="facilityDetailsType" type="gml:CodeType"/>
        <xs:element name="portName" type="xs:string"/>
        <xs:element name="portType" type="gml:CodeType"/>
        <xs:element name="address" type="xs:string"/>
        <xs:element name="designatedArea" type="xs:string"/>
        <xs:element name="designation" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="designatedAdministrator" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="referenceNumber" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="grantType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="administrator" type="xs:string" minOccurs="0"/>
        <xs:element name="facilityManager" type="xs:string" minOccurs="0"/>
        <xs:element name="structureType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="otherStructure" type="xs:string" minOccurs="0"/>
        <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="ceilingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="otherSizeDescription" type="xs:string" minOccurs="0"/>
        <xs:element name="dateOfConstructionOrAcquisition" type="xs:date" minOccurs="0"/>
        <xs:element name="cost" type="xs:integer" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```


FishingPortCapacityType, FishingPortCapacity

Type	Definition
FishingPortCapacity	Capacity of the fishing port facility
Property	Definition
capacity	Capacity description.
weightCapacity	Weight capacity
hullForm	Type of ships
shipNumber	Number of ships.
waterDepth-2m	Total area Jess thai1 2m depth.
waterDepth2-3m	Total area from 2m to 3m depth.
waterDepth3-6m	Total area from 3m to 6m depth.
waterDepth6-m	Total area with 6m depth or more.
heightAboveAWL	Height above average water level.
heightOnFoundations	Height above foundations.
luminousRange	Maximum lumi110us range.
luminousColor	Type of luminous color.
candlePower	Candle power.
lightType	Light type.
period	Period of the lighthouse glowing.
maximumGroundingWeight	Maximum grounding weight
hai1dleablePower	Maximum hai1dleable power.
maximumWaterSupply	Maximum water supply.
maximumRefueling	Maximum refuelling volume.
people	Number of people.
other	Other description regarding the capacity.

```

<xs:element name="FishingPortCapacity" type="uro:FishingPortCapacityType"
substitutionGroup="uro:FishingPortAttribute"/>
<xs:complexType name="FishingPortCapacityType">
  <xs:complexContent>
    <xs:extension base="uro:FishingPortAttributeType">
      <xs:sequence>
        <xs:element name="capacity" type="xs:string" minOccurs="0"/>
        <xs:element name="weightCapacity" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="hullForm" type="xs:integer" minOccurs="0"/>
        <xs:element name="shipNumber" type="xs:integer" minOccurs="0"/>
        <xs:element name="waterDepth-2m" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="waterDepth2-3m" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="waterDepth3-6m" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="waterDepth6-m" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="heightAboveAWL" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="heightOnFoundations" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="luminousRange" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="luminousColor" type="xs:string" minOccurs="0"/>
        <xs:element name="candlePower" type="xs:integer" minOccurs="0"/>
        <xs:element name="lightType" type="xs:string" minOccurs="0"/>
        <xs:element name="period" type="xs:string" minOccurs="0"/>
        <xs:element name="maximumGroundingWeight" type="xs:integer" minOccurs="0"/>
        <xs:element name="handleablePower" type="xs:integer" minOccurs="0"/>
        <xs:element name="maximumWaterSupply" type="xs:integer" minOccurs="0"/>
        <xs:element name="maximumRefueling" type="xs:string" minOccurs="0"/>
        <xs:element name="people" type="xs:integer" minOccurs="0"/>
        <xs:element name="other" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.17.4 Extended properties for facility maintenance

Figure1-28 shows data types to add thematic attributes for facility maintenance. These data types are commonly used as a part of city objects, e.g., bldg::Building, frn::CityFurniture.

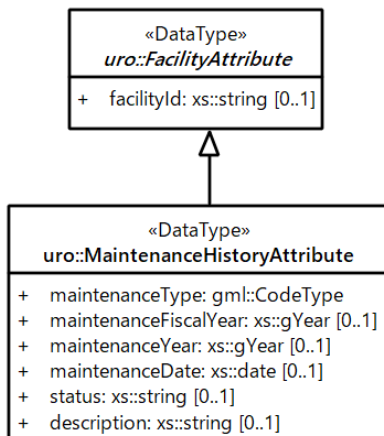


Figure1-28 UML diagram of properties for facility maintenance

MaintenanceHistoryAttributeType, MaintenanceHistoryAttribute

Type	Definition
MaintenanceHistoryAttribute	Data type for recording facility maintenance history.
Property	Definition
maintenanceType	Type of inspection and maintenance.
maintenanceFiscalYear	Fiscal year of the maintenance or inspection conducted.
maintenanceYear	Year of the maintenance or inspection conducted
maintenanceDate	Date of the maintenance or inspection conducted
status	Status of the facility.
description	Other remarkable description.

```

<xs:element name="MaintenanceHistoryAttribute" type="uro:MaintenanceHistoryAttributeType"
substitutionGroup="uro:FacilityAttribute"/>
<xs:complexType name="MaintenanceHistoryAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FacilityAttributeType">
      <xs:sequence>
        <xs:element name="maintenanceType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="maintenanceFiscalYear" type="xs:gYear" minOccurs="0"/>
        <xs:element name="maintenanceYear" type="xs:gYear" minOccurs="0"/>
        <xs:element name="maintenanceDate" type="xs:date" minOccurs="0"/>
        <xs:element name="status" type="xs:string" minOccurs="0"/>
        <xs:element name="description" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
    
```

4.2.17.5 Extended properties for park facility management

4.2.18 Extended properties of 2D map data

3D city models and 2D maps can be used for different purposes. This is because each has its advantage and disadvantages. Figure1-29 shows the structure of data types for portrayal information required for 2D map portrayal. These data types are intended to ensure compatibility with the Digital Topographic Map Data Format defined by Geospatial Information Authority of Japan.

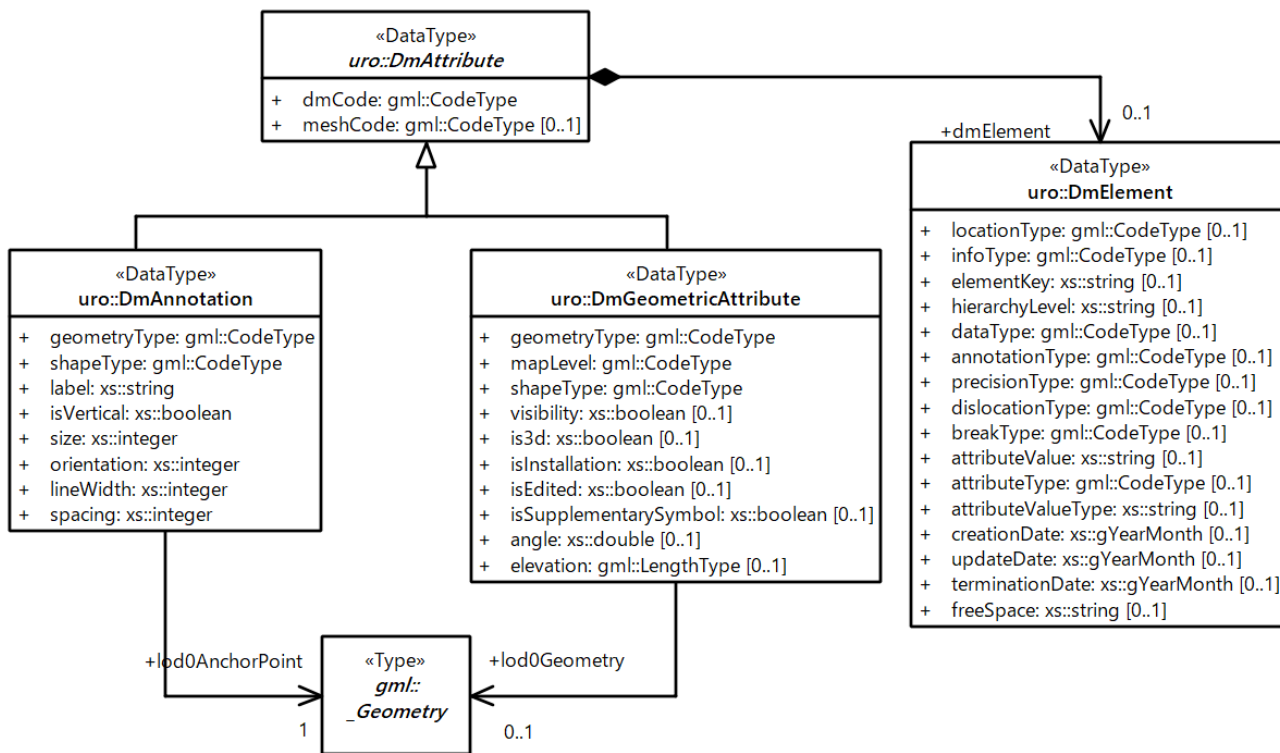


Figure1-29 UML diagram for 2D map conversion

DmAttributeType, DmAttribute

Type	Definition
DmAttribute	The root class for 2D map portrayal attribute.
Property	Definition
dmCode	Code for the classification of objects in topographic maps
meshCode	Code that identifies the mesh in which the object locates.
dmElement	Information for compatibility with the Digital Topographic Map Data Format.

```

<xs:element name="DmAttribute" type="uro:DmAttributeType" abstract="true"/>
<xs:complexType name="DmAttributeType" abstract="true">
  <xs:sequence>
    <xs:element name="dmCode" type="gml:CodeType"/>
    <xs:element name="meshCode" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="dmElement" type="uro:DmElementPropertyType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

DmElementType, DmElement

Type	Definition
------	------------

DmElement	Portrayal element for 2D map.
Property	Definition
locationType	Element type of location.
infoType	Element type of information.
elementKey	Id for the element.
hierarchyLevel	Hierarchy level of the element.
dataType	Element data type.
airnotationType	Annotation type.
precisionType	Precision type.
dislocationType	Dislocation type
breakType	Flag whether the element is divided or not.
attributeValue	Value of the attribute.
attributeType	Type of the attribute.
attributeValueType	Value type of the attribute.
creationDate	Date of data creation.
terminationDate	Date of data termination.
freeSpace	Additional information.
locationType	Element type of location.
infoType	Element type of information.
elementKey	Id for the element.

```

<xs:element name="DmElement" type="uro:DmElementType"/>
<xs:complexType name="DmElementType">
  <xs:sequence>
    <xs:element name="locationType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="infoType" type="gml:CodeType" minOccurs="0"/></xs:element>
    <xs:element name="elementKey" type="xs:string" minOccurs="0"/>
    <xs:element name="hierarchyLevel" type="xs:string" minOccurs="0"/>
    <xs:element name="dataType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="annotationType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="precisionType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="dislocationType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="breakType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="attributeValue" type="xs:string" minOccurs="0"/>
    <xs:element name="attributeType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="attributeValueType" type="xs:string" minOccurs="0"/>
    <xs:element name="creationDate" type="xs:gYearMonth" minOccurs="0"/>
    <xs:element name="updateDate" type="xs:gYearMonth" minOccurs="0"/></xs:element>
    <xs:element name="terminationDate" type="xs:gYearMonth" minOccurs="0"/>
    <xs:element name="freeSpace" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

DmGeometricAttributeType, DmGeometricAttribute

Type	Definition
DmGeometricAttribute	Geometric information for 2D map portrayal.
Property	Definition
geometryType	Type of geometry.
mapLevel	Map scale.
shapeType	Types of elements that make up the symbol
visibility	Flag whether the object is visible from above or not. 1: visible 0: invisible
is3d	Flag whether the data contains 3D information or not. 1: 3D 0: 2D

isInstallation	Flag whether the data is accessory symbol or not.
isEdited	Flag whether the data is updated or not.
isSupplementarySymbol	Flag whether the data is supplementary symbol or not
ai1gle	Angle to tilt the symbol.
elevation	Elevation of the object.
lod0Geometry	2D shape of the object.

```

<xs:element name="DmGeometricAttribute" type="uro:DmGeometricAttributeType"
substitutionGroup="uro:DmAttribute"/>
<xs:complexType name="DmGeometricAttributeType">
<xs:complexContent>
<xs:extension base="uro:DmAttributeType">
<xs:sequence>
<xs:element name="geometryType" type="gml:CodeType"/></xs:element>
<xs:element name="mapLevel" type="gml:CodeType"/></xs:element>
<xs:element name="shapeType" type="gml:CodeType"/></xs:element>
<xs:element name="visibility" type="xs:boolean" minOccurs="0"/>
<xs:element name="is3d" type="xs:boolean" minOccurs="0"/>
<xs:element name="isInstallation" type="xs:boolean" minOccurs="0"/>
<xs:element name="isEdited" type="xs:boolean" minOccurs="0"/>
<xs:element name="isSupplementarySymbol" type="xs:boolean" minOccurs="0"/>
<xs:element name="angle" type="xs:double" minOccurs="0"/>
<xs:element name="elevation" type="gml:LengthType" minOccurs="0"/>
<xs:element name="lod0Geometry" type="gml:GeometryPropertyType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

DmAnnotationType, DmAnnotation

Type	Definition
DmAnnotation	Annotation information for 2D map portrayal.
Property	Definition
geometryType	Type of geometry.
shapeType	Type of elements that make up the annotation.
label	Annotation string.
isVertical	Vertical or horizontal writing classification 1: vertical 0: horizontal
size	Graphic size
orientation	String angle
linewidth	Line width
spacing	Character spacing
lod0anchorPoint	Anchor point of the annotation.

```

<xs:element name="DmAnnotation" type="uro:DmAnnotationType" substitutionGroup="uro:DmAttribute"/>
<xs:complexType name="DmAnnotationType">
<xs:complexContent>
<xs:extension base="uro:DmAttributeType">
<xs:sequence>
<xs:element name="geometryType" type="gml:CodeType"/></xs:element>
<xs:element name="shapeType" type="gml:CodeType"/></xs:element>
<xs:element name="label" type="xs:string" minOccurs="0"><xs:annotation></xs:element>
<xs:element name="isVertical" type="xs:boolean"><xs:annotation></xs:element>
<xs:element name="size" type="xs:integer"><xs:annotation></xs:element>
<xs:element name="orientation" type="xs:integer"></xs:element>
<xs:element name="linewidth" type="xs:integer"></xs:element>

```

```

<xs:element name="spacing" type="xs:integer"></xs:element>
<xs:element name="lod0anchorPoint" type="gml:GeometryPropertyType"></xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.19 Extended properties for interoperating CityGML and IFC Building Models

The Urban Object module defines data types to facilitate conversion from IFC to CityGML based on the Information Delivery Manual (IDM) and Model View Definition (MVD) for the 3D city models comfonn to the Standard Data Product Specification of the Project PLATEAU.

Each class and property set in in the IDM/MVD is defined as a data type in this module. The data type class *uro::IfcAttribute* is the root class for this mapping.

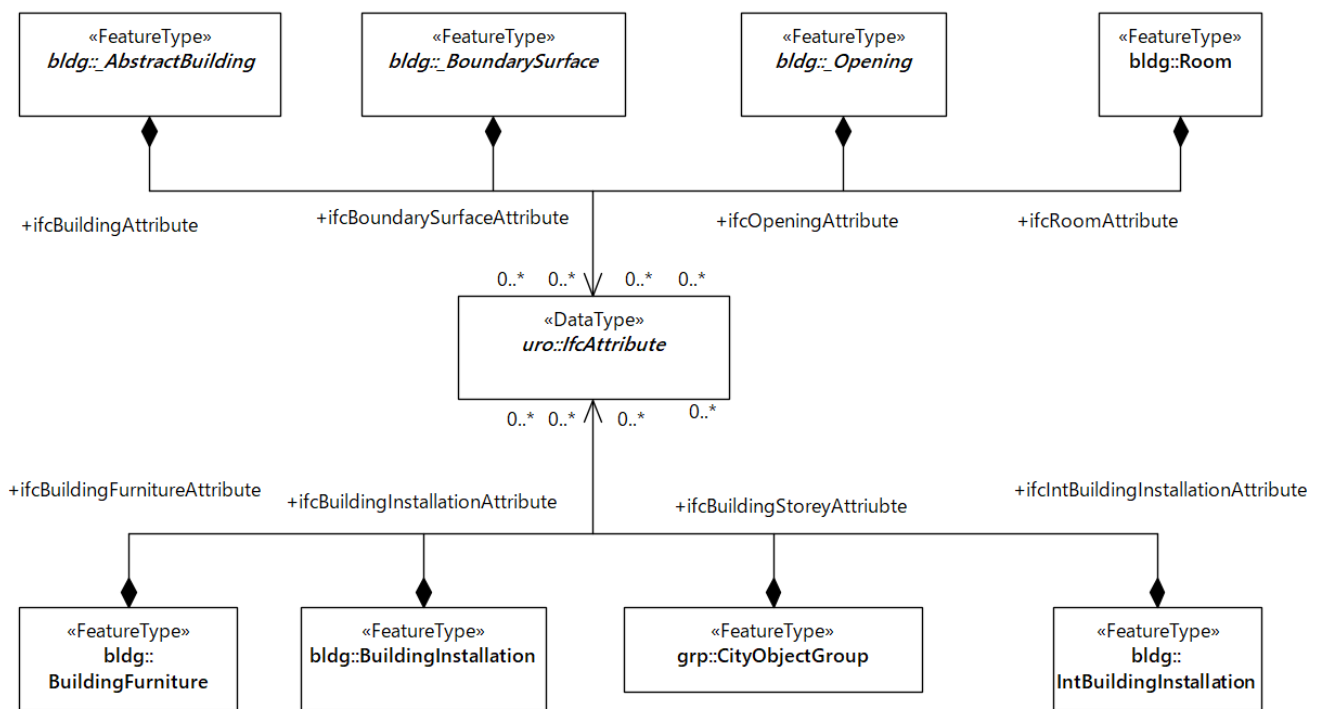


Figure1-30 UML diagram of extended properties of building components for IFC conversion

Extended properties of Building elements for IFC conversion

Property	Definition
ifcBuildingAttribute	Property for IFC classes and property sets of bldg::_AbstractBuilding.
ifcRoomAttribute	Property for IFC classes and property sets of bldg::Room.
ifcBoundarySurfaceAttribute	Property for IFC classes and property sets of bldg::_BoundarySurface.
ifcOpeningAttribute	Property for IFC classes and property sets of bldg::_Opening.
ifcBuildingFurnitureAttribute	Property for IFC classes and property sets of bldg::BuildingFurniture.
ifcBuildingInstallationAttribute	Property for IFC classes and property sets of bldg::BuildingInstallation.
ifcIntBuildingInstallationAttribute	Property for IFC classes and property sets of bldg::IntBuildingInstallation.

ifcBuildingStoreyAttribute	Property for IFC classes and property sets of grp::CityObjectGroup which represents building storeys.
----------------------------	---

```

<xs:element name="ifcBuildingAttribute" type="uro:IfcAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="ifcBuildingStoreyAttribute" type="uro:IfcAttributePropertyType"
substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>
<xs:element name="ifcRoomAttribute" type="uro:IfcAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfRoom"/>
<xs:element name="ifcOpeningAttribute" type="uro:IfcAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfOpening"/>
<xs:element name="ifcBoundarySurfaceAttribute" type="uro:IfcAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfBoundarySurface"/>
<xs:element name="ifcBuildingInstallationAttribute" type="uro:IfcAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfBuildingInstallation"/>
<xs:element name="ifcIntBuildingInstallationAttribute" type="uro:IfcAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfIntBuildingInstallation"/>
<xs:element name="ifcBuildingFurnitureAttribute" type="uro:IfcAttributePropertyType"
substitutionGroup="bldg:_GenericApplicationPropertyOfBuildingFurniture"/>

```

IfcAttributeType, IfcAttribute

Type	Definition
DmAttribute	Root class of data type for holding data from IFC model..

```

<xs:element name="IfcAttribute" type="uro:IfcAttributeType" abstract="true"/>
<xs:complexType name="IfcAttributeType" abstract="true">
<xs:sequence/>
</xs:complexType>

```

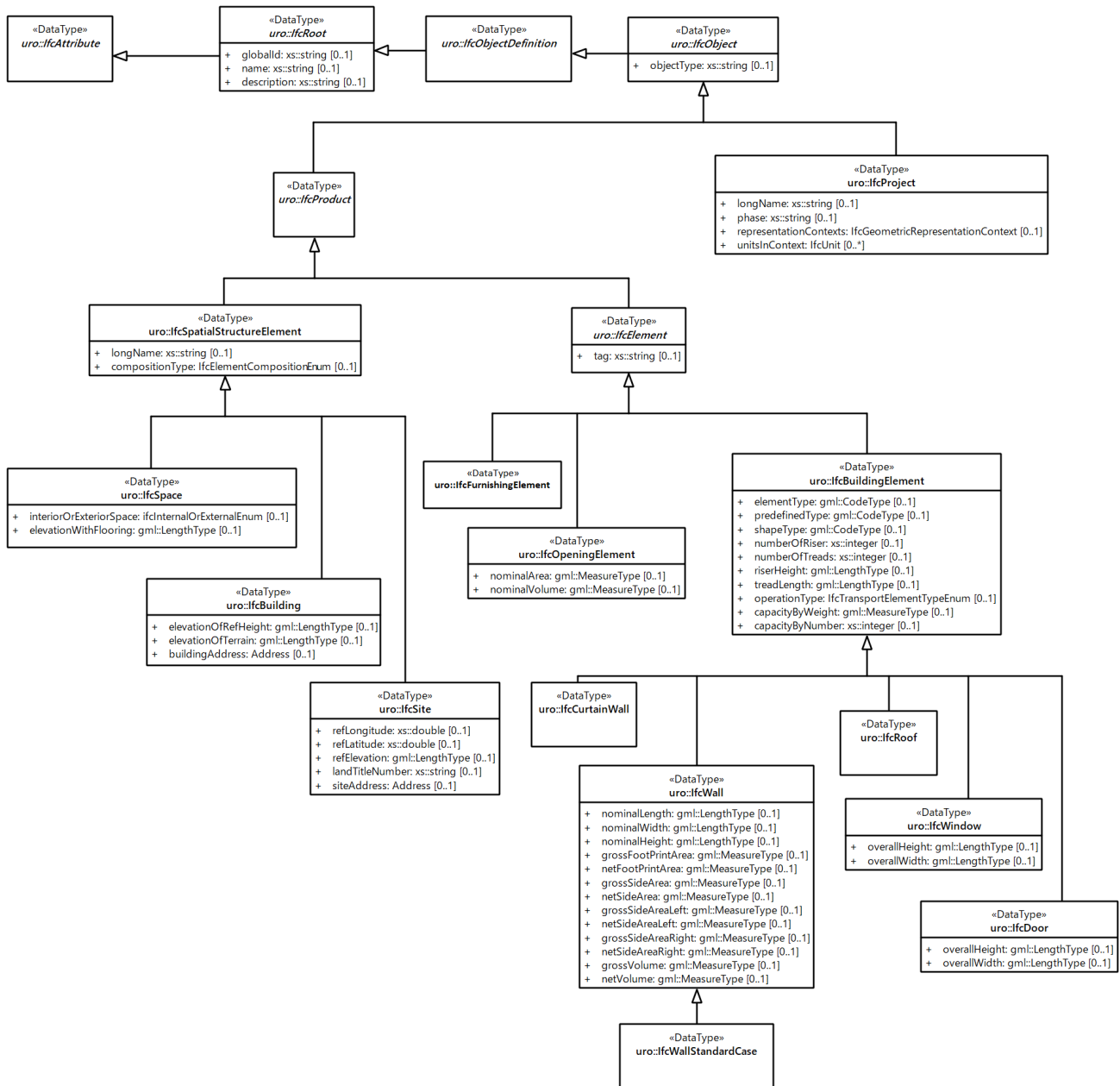



Figure1-31 UML diagram of extended properties of building components for IFC conversion

IfcRootType, IfcRoot

Type	Definition
IfcRoot	The most abstract and root class for all IFC entity definitions.
Property	Definition
globalId	Assignment of a globally unique identifier within the entire software world.
name	Optional name for use by the participating software systems or users.
description	Optional description, provided for exchanging informative comments.

```

<xs:element name="IfcRoot" type="uro:IfcRootType" abstract="true" substitutionGroup="uro:IfcAttribute">
</xs:element>
<xs:complexType name="IfcRootType" abstract="true">
<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>
<xs:element name="globalId" type="xs:string" minOccurs="0"/>

```

```

<xs:element name="name" type="xs:string" minOccurs="0"/>
<xs:element name="description" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcObjectDefinitionType, IfcObjectDefinition

Type	Definition
IfcObjectDefinition	The generalization of any semantically treated thing or process, either being a type or an occurrence.

```

<xs:element name="IfcObjectDefinition" type="uro:IfcObjectDefinitionType" abstract="true"
substitutionGroup="uro:IfcRoot">
</xs:element>
<xs:complexType name="IfcObjectDefinitionType" abstract="true">
<xs:complexContent>
<xs:extension base="uro:IfcRootType"/>
</xs:complexContent>
</xs:complexType>

```

IfcObjectType, IfcObject

Type	Definition
IfcObject	The generalization of any semantically treated things or process.
Property	Definition
objectType	Type type denotes a particular type that indicates the object further.

```

<xs:element name="IfcObject" type="uro:IfcObjectType" abstract="true" substitutionGroup="uro:IfcObjectDefinition">
</xs:element>
<xs:complexType name="IfcObjectType" abstract="true">
<xs:complexContent>
<xs:extension base="uro:IfcObjectDefinitionType">
<xs:sequence>
<xs:element name="objectType" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcProductType, IfcProduct

Type	Definition
IfcProduct	Any object, or any aid to define, organize and annotate an object, that relates to a geometric or spatial context.

```

<xs:element name="IfcProduct" type="uro:IfcProductType" abstract="true" substitutionGroup="uro:IfcObject">
</xs:element>
<xs:complexType name="IfcProductType" abstract="true">
<xs:complexContent>
<xs:extension base="uro:IfcObjectType"/>
</xs:complexContent>
</xs:complexType>

```

IfcSpatialStructureElementType, IfcSpatialStructureElement

Type	Definition
------	------------

IfcSpatialStructureElement	The generalization of all spatial elements that might be used to define a spatial structure.
Property	Definition
longName	Long name for a spatial structure element, used for informal purposes.
compositionType	CompositionType denotes whether the predefined spatial structure element represents itself, or an aggregate (complex) or a part (part). The value will be one of the following: COMPLEX ELEMENT PARTIAL

```
<xs:element name="IfcSpatialStructureElement" type="uro:IfcSpatialStructureElementType" abstract="true"
substitutionGroup="uro:IfcProduct">
</xs:element>
<xs:complexType name="IfcSpatialStructureElementType" abstract="true">
<xs:complexContent>
<xs:extension base="uro:IfcProductType">
<xs:sequence>
<xs:element name="longName" type="xs:string" minOccurs="0"/>
<xs:element name="compositionType" type="uro:IfcElementCompositionEnum" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

IfcBuildingType, IfcBuilding

Type	Definition
IfcBuilding	A building represents a structure that provides shelter for its occupants or contents and stands in one place.
Property	Definition
elevationOfRefHeight	Elevation above sea level of the reference height used for all storey elevation measures, equals to height 0.0.
elevationOfTerrain	Elevation above the minimal terrain level around the foot print of the building, given in elevation above sea level.
buildingAddress	Address given to the building for postal purposes.

```
<xs:element name="IfcBuilding" type="uro:IfcBuildingType" substitutionGroup="uro:IfcSpatialStructureElement">
</xs:element>
<xs:complexType name="IfcBuildingType">
<xs:complexContent>
<xs:extension base="uro:IfcSpatialStructureElementType">
<xs:sequence>
<xs:element name="elevationOfRefHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="elevationOfTerrain" type="gml:LengthType" minOccurs="0"/>
<xs:element name="buildingAddress" type="core:AddressPropertyType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

IfcSiteType, IfcSite

Type	Definition
IfcSite	A defined area of land, possibly covered with water, on which the project construction is to be completed.
Property	Definition
refLongitude	World Latitude at reference point (most likely defined in legal description).
refLatitude	World Longitude at reference point (most likely defined in legal description).

refElevation	Datum elevation relative to sea level.
landTitleNumber	The land title number (designation of the site within a regional system).
siteAddress	Address given to the site for postal purposes.

```

<xs:element name="IfcSite" type="uro:IfcSiteType" substitutionGroup="uro:IfcSpatialStructureElement">
</xs:element>
<xs:complexType name="IfcSiteType">
<xs:complexContent>
<xs:extension base="uro:IfcSpatialStructureElementType">
<xs:sequence>
<xs:element name="refLongitude" type="xs:double" minOccurs="0"/>
<xs:element name="refLatitude" type="xs:double" minOccurs="0"/>
<xs:element name="refElevation" type="gml:LengthType" minOccurs="0"/>
<xs:element name="landTitleNumber" type="xs:string" minOccurs="0"/>
<xs:element name="siteAddress" type="core:AddressPropertyType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcProjectType, IfcProject

Type	Definition
IfcProject	The undertaking of some design, engineering, construction, or maintenance activities leading towards a product.
Property	Definition
longName	Long name for the project as used for reference purposes.
phase	Current project phase.
representationContexts	Context of the representations used within the project.
unitsInContext	Units globally assigned to measure types used within the context of this project.

```

<xs:element name="IfcProject" type="uro:IfcProjectType" substitutionGroup="uro:IfcObject">
</xs:element>
<xs:complexType name="IfcProjectType">
<xs:complexContent>
<xs:extension base="uro:IfcObjectType">
<xs:sequence>
<xs:element name="longName" type="xs:string" minOccurs="0"/>
<xs:element name="phase" type="xs:string" minOccurs="0"/>
<xs:element name="representationContexts" type="uro:IfcGeometricRepresentationContextPropertyType"
minOccurs="0"/>
<xs:element name="unitsInContext" type="uro:IfcUnitPropertyType" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcSpaceType, IfcSpace

Type	Definition
IfcSpace	A space represents and area or volume bounded actually or theoretically.
Property	Definition
interiorOrExteriorSpace	Defines, whether the Space is interior (Internal) \, or exterior (External), i.e. part of the outer space.
elevationWithFlooring	Level of flooring of this space.

```

<xs:element name="IfcSpace" type="uro:IfcSpaceType" substitutionGroup="uro:IfcSpatialStructureElement">
</xs:element>
<xs:complexType name="IfcSpaceType">

```

```

<xs:complexContent>
  <xs:extension base="uro:IfcSpatialStructureElementType">
    <xs:sequence>
      <xs:element name="interiorOrExteriorSpace" type="uro:IfcInternalOrExternalEnum" minOccurs="0"/>
      <xs:element name="elevationWithFlooring" type="gml:LengthType" minOccurs="0"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcElementType, IfcElement

Type	Definition
IfcElement	Generalization of all components that make up an AEC product.
Property	Definition
tag	The tag (or label) identifier at the particular instance of a product, e.g. the serial number, or the position number.

```

<xs:element name="IfcElement" type="uro:IfcElementType" abstract="true" substitutionGroup="uro:IfcProduct">
</xs:element>
<xs:complexType name="IfcElementType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:IfcProductType">
      <xs:sequence>
        <xs:element name="tag" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

IfcBuildingElementType, IfcBuildingElement

Type	Definition
IfcBuildingElement	The building element comprises all elements that are primarily part of the construction of a building, i.e., its structural and space separating system.
Property	Definition
elementType	Type of the building element
predefinedType	Predefined type for the building element.
shapeType	Predefined shape types for the building element.
numberOfRiser	Number of the risers included in the stair flight.
numberOfTreads	Number of treads included in the stair flight.
riserHeight	Vertical distance from tread to tread. The riser height is supposed to be equal for all stairs in a stair flight.
treadLength	Horizontal distance from the front to the back of the tread. The tread length is supposed to be equal for all steps of the stair flight.
operationType	Predefined type for transport element.
capacityByWeight	Capacity of the transport element measured by weight.
capacityByNumber	Capacity of the transportation element measured in numbers of person.

```

<xs:element name="IfcBuildingElement" type="uro:IfcBuildingElementType" substitutionGroup="uro:IfcElement">
</xs:element>
<xs:complexType name="IfcBuildingElementType">
  <xs:complexContent>
    <xs:extension base="uro:IfcElementType">
      <xs:sequence>
        <xs:element name="elementType" type="gml:CodeType" minOccurs="0">
          <xs:annotation>
            </xs:annotation>

```

```

</xs:element>
<xs:element name="predefinedType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="shapeType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="numberOfRiser" type="xs:integer" minOccurs="0"/>
<xs:element name="numberOfTreads" type="xs:integer" minOccurs="0"/>
<xs:element name="riserHeight" type="gml:LengthType" minOccurs="0"/></xs:element>
<xs:element name="treadLength" type="gml:LengthType" minOccurs="0"/><xs:annotation></xs:annotation>
<xs:element name="operationType" type="uro:IfcTransportElementTypeEnum" minOccurs="0"/>
<xs:element name="capacityByWeight" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="capacityByNumber" type="xs:integer" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcWallType, IfcWall

Type	Definition
IfcWall	A vertical construction that bounds or subdivides spaces.
Property	Definition
nominalLength	Total nominal (or average) length of the wall along the wall path.
nominalWidth	Total nominal (or average) width (or thickness) of the wall perpendicular to the wall path.
nominalHeight	Total nominal (or average) height of the wall along the wall path.
grossFootPrintArea	Area of the wall as viewed by a ground floor view, not taking any wall modifications (like recesses) into account. It is also referred to as the footprint of the wall.
netFootPrintArea	Area of the wall as viewed by a ground floor view, taking all wall modifications (like recesses) into account. It is also referred to as the footprint of the wall.
grossSideArea	Area of the wall as viewed by an elevation view of the middle plane of the wall. It does not take into account any wall modifications (such as openings).
netSideArea	Area of the wall as viewed by an elevation view of the middle plane. It does take into account all wall modifications (such as openings).
grossSideAreaLeft	Area of the wall as viewed by an elevation view of the left side (when viewed along the wall path orientation). It does not take into account any wall modifications (such as openings).
netSideAreaLeft	Area of the wall as viewed by an elevation view of the left side (when viewed along the wall path orientation). It does take into account all wall modifications (such as openings).
grossSideAreaRight	Area of the wall as viewed by an elevation view of the right side (when viewed along the wall path orientation). It does not take into account any wall modifications (such as openings).
netSideAreaRight	Area of the wall as viewed by an elevation view of the right side (when viewed along the wall path orientation). It does take into account all wall modifications (such as openings).
grossVolume	Volume of the wall, without taking into account the openings and the connection geometry.
netVolume	Volume of the wall, after subtracting the openings and after considering the connection geometry.

```

<xs:element name="IfcWall" type="uro:IfcWallType" substitutionGroup="uro:IfcBuildingElement">
</xs:element>
<xs:complexType name="IfcWallType">
<xs:complexContent>
<xs:extension base="uro:IfcBuildingElementType">
<xs:sequence>
<xs:element name="nominalLength" type="gml:LengthType" minOccurs="0"/>
<xs:element name="nominalWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="nominalHeight" type="gml:LengthType" minOccurs="0"/>

```

```

<xs:element name="grossFootPrintArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netFootPrintArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossSideArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netSideArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossSideAreaLeft" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netSideAreaLeft" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossSideAreaRight" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netSideAreaRight" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossVolume" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netVolume" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcWallStandardCaseType, IfcWallStandardCase

Type	Definition
IfcWallStandardCase	A wall with certain constraints for the provision of parameters and with certain constraints for the geometric representation.

```

<xs:element name="IfcWallStandardCase" type="uro:IfcWallStandardCaseType" substitutionGroup="uro:IfcWall">
</xs:element>
<xs:complexType name="IfcWallStandardCaseType">
<xs:complexContent>
<xs:extension base="uro:IfcWallType"/>
</xs:complexContent>
</xs:complexType>

```

IfcCurtainWallType, IfcCurtainWall

Type	Definition
IfcCurtainWall	Non load bearing wall positioned on the outside of a building and enclosing it.

```

<xs:element name="IfcCurtainWall" type="uro:IfcCurtainWallType" substitutionGroup="uro:IfcBuildingElement">
</xs:element>
<xs:complexType name="IfcCurtainWallType">
<xs:complexContent>
<xs:extension base="uro:IfcBuildingElementType"/>
</xs:complexContent>
</xs:complexType>

```

IfcRoofType, IfcRoof

Type	Definition
IfcRoof	Construction enclosing the building from above.

```

<xs:element name="IfcRoof" type="uro:IfcRoofType" substitutionGroup="uro:IfcBuildingElement">
</xs:element>
<xs:complexType name="IfcRoofType">
<xs:complexContent>
<xs:extension base="uro:IfcBuildingElementType"/>
</xs:complexContent>
</xs:complexType>

```

DmAnnotationType, DmAnnotation

Type	Definition
------	------------

IfcWindow	Construction for closing a vertical or near vertical opening in a wall or pitched roof that will admit light and may admit fresh air.
Property	Definition
overallHeight	Overall measure of the height.
overallWidth	Overall measure of the width.

```

<xs:element name="IfcWindow" type="uro:IfcWindowType" substitutionGroup="uro:IfcBuildingElement">
</xs:element>
<xs:complexType name="IfcWindowType">
<xs:complexContent>
<xs:extension base="uro:IfcBuildingElementType">
<xs:sequence>
<xs:element name="overallHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="overallWidth" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcDoorType, IfcDoor

Type	Definition
IfcDoor	Construction for closing an opening.
Property	Definition
overallHeight	Overall measure of the height.
overallWidth	Overall measure of the width.

```

<xs:element name="IfcDoor" type="uro:IfcDoorType" substitutionGroup="uro:IfcBuildingElement">
</xs:element>
<xs:complexType name="IfcDoorType">
<xs:complexContent>
<xs:extension base="uro:IfcBuildingElementType">
<xs:sequence>
<xs:element name="overallHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="overallWidth" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcOpeningElementType, IfcOpeningElement

Type	Definition
DmAnnotation	The opening element stands for opening, recess or chase, all reflecting voids.
Property	Definition
nominalArea	Area of the opening.
nominalVolume	Volume of the opening.

```

<xs:element name="IfcOpeningElement" type="uro:IfcOpeningElementType" substitutionGroup="uro:IfcElement">
</xs:element>
<xs:complexType name="IfcOpeningElementType">
<xs:complexContent>
<xs:extension base="uro:IfcElementType">
<xs:sequence>
<xs:element name="nominalArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="nominalVolume" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>

```



```
</xs:complexType>
```

IfcFurnishingElementType, IfcFurnishingElement

Type	Definition
IfcFurnishingElement	Generalization of all furniture related objects.

```
<xs:element name="IfcFurnishingElement" type="uro:IfcFurnishingElementType" substitutionGroup="uro:IfcElement">
</xs:element>
<xs:complexType name="IfcFurnishingElementType">
<xs:complexContent>
<xs:extension base="uro:IfcElementType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

IfcBuildingStoreyType, IfcBuildingStorey

Type	Definition
IfcBuildingStorey	A storey may span over several connected storeys. Therefore storey complex provides for a collection of storeys included in a building. A storey can also be decomposed in (horizontal) parts, where each part defines a partial storey.
Property	Definition
elevation	Elevation of the base of this storey, relative to the 0,00 internal reference height of the building. The 0.00 level is given by the absolute above sea level height by the ElevationOfRefHeight attribute given at IfcBuilding.

```
<xs:element name="IfcBuildingStorey" type="uro:IfcBuildingStoreyType"
substitutionGroup="uro:IfcSpatialStructureElement">
</xs:element>
<xs:complexType name="IfcBuildingStoreyType">
<xs:complexContent>
<xs:extension base="uro:IfcSpatialStructureElementType">
<xs:sequence>
<xs:element name="elevation" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

IfcGroupType, IfcGroup

Type	Definition
IfcGroup	An generalization of any arbitrary group.

```
<xs:element name="IfcGroup" type="uro:IfcGroupType" substitutionGroup="uro:IfcObject">
</xs:element>
<xs:complexType name="IfcGroupType">
<xs:complexContent>
<xs:extension base="uro:IfcObjectType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

IfcZoneType, IfcZone

Type	Definition
IfcZone	A zone is an aggregation of spaces, partial spaces or other zones.

```

<xs:element name="IfcZone" type="uro:IfcZoneType" substitutionGroup="uro:IfcGroup">
</xs:element>
<xs:complexType name="IfcZoneType">
<xs:complexContent>
<xs:extension base="uro:IfcGroupType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

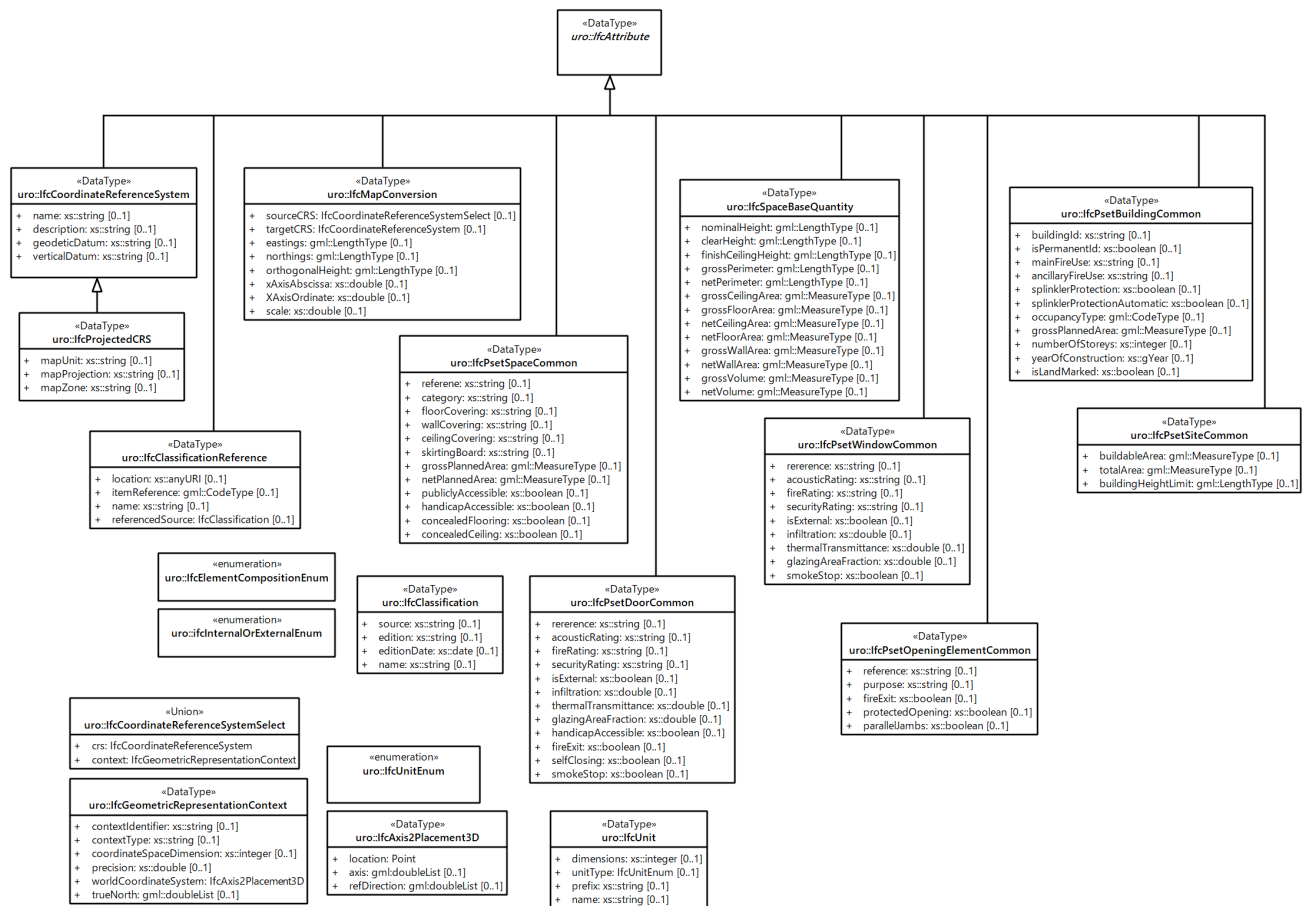


Figure1-32 UML diagram of extended data types for IFC conversion

IfcCoordinateReferenceSystemType, IfcCoordinateReferenceSystem

Type	Definition
IfcCoordinateReferenceSystem	A definition of a coordinate reference system by means of qualified identifiers only.
Property	Definition
name	Name by which the coordinate reference system is identified.

description	Informal description of this coordinate reference system.
geodeticDatum	Name by which this datum is identified.
verticalDatum	Name by which the vertical datum is identified.

```
<xs:element name="IfcCoordinateReferenceSystem" type="uro:IfcCoordinateReferenceSystemType"
substitutionGroup="uro:IfcAttribute"> </xs:element>
<xs:complexType name="IfcCoordinateReferenceSystemType">
<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>
<xs:element name="name" type="xs:string" minOccurs="0"/>
<xs:element name="description" type="xs:string" minOccurs="0"/>
<xs:element name="geodeticDatum" type="xs:string" minOccurs="0"/>
<xs:element name="verticalDatum" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

IfcProjectedCRSType, IfcProjectedCRS

Type	Definition
IfcProjectedCRS	A coordinate reference system of the map to which the map translation of the local engineering coordinate system of the construction or facility engineering project relates.
Property	Definition
mapUnit	Unit of the coordinate axes composing the map coordinate system.
mpProjection	Name by which the map projection is identified.
mapZone	Name by which the map zone, relating to the MapProjection, is identified.

```
<xs:element name="IfcProjectedCRS" type="uro:IfcProjectedCRSType"
substitutionGroup="uro:IfcCoordinateReferenceSystem"> </xs:element>
<xs:complexType name="IfcProjectedCRSType">
<xs:complexContent>
<xs:extension base="uro:IfcCoordinateReferenceSystemType">
<xs:sequence>
<xs:element name="mapUnit" type="xs:string" minOccurs="0"/>
<xs:element name="mapProjection" type="xs:string" minOccurs="0"/>
<xs:element name="mapZone" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

IfcClassificationType, IfcClassification

Type	Definition
IfcClassification	The IfcClassification identifies the classification system or source to which a classification reference refers to.
Property	Definition
source	Source (or publisher) for this classification.
edition	The edition or version of the classification system from which the classification notation is derived.
editionDate	The date on which the edition of the classification used became valid.
name	The name or label by which the classification used is normally known

```
<xs:element name="IfcClassification" type="uro:IfcClassificationType"> </xs:element>
```

```

<xs:complexType name="IfcClassificationType">
  <xs:sequence>
    <xs:element name="source" type="xs:string" minOccurs="0"/>
    <xs:element name="edition" type="xs:string" minOccurs="0"/>
    <xs:element name="editionDate" type="xs:date" minOccurs="0"/>
    <xs:element name="name" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

IfcClassificationReferenceType, IfcClassificationReference

Type	Definition
IfcClassificationReference	A reference into a classification system or source (see IfcClassification) for a specific classification key (or notation).
Property	Definition
location	A direct URI link into the classification system (or source) to hyperlink the classification key.
itemReference	Name changed from ItemReference to Identification.
name	Label which allows for a human interpretable designation of a classification notation.
referencedSource	The classification system or source that is referenced.

```

<xs:element name="IfcClassificationReference" type="uro:IfcClassificationReferenceType"
substitutionGroup="uro:IfcAttribute"> </xs:element>
<xs:complexType name="IfcClassificationReferenceType">
  <xs:complexContent>
    <xs:extension base="uro:IfcAttributeType">
      <xs:sequence>
        <xs:element name="location" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="itemReference" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="name" type="xs:string" minOccurs="0"/></xs:element>
        <xs:element name="referenceSource" type="uro:IfcClassificationPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

IfcMapConversionType, IfcMapConversion

Type	Definition
IfcMapConversion	The map conversion allows to convert the local origin of the local engineering coordinate system to its place within a map (easting, northing, orthogonal height) and to rotate the x-axis of the local engineering coordinate system within the horizontal (easting/westing) plane of the map.
Property	Definition
sourceCRS	Source coordinate reference system for the operation.
targetCRS	Target coordinate reference system for the operation.
eastings	Specifies the location along the easting of the coordinate system of the target map coordinate reference system.
northings	Specifies the location along the northing of the coordinate system of the target map coordinate reference system.
orthogonalHeight	Orthogonal height relativ to the vertical datum specified.
xAxisAbscissa	Specifies the value along the easting axis of the end point of a vector indicating the position of the local x axis of the engineering coordinate reference system.

xAxisOrdinate	Specifies the value along the northing axis of the end point of a vector indicating the position of the local x axis of the engineering coordinate reference svstem.
scale	Scale to be used, when the units of the CRS are not identical to the units of the

```
<xs:element name="IfcMapConversion" type="uro:IfcMapConversionType" substitutionGroup="uro:IfcAttribute">
<xs:complexType name="IfcMapConversionType">
<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>
<xs:element name="sourceCRS" type="uro:IfcCoordinateReferenceSystemSelectType" minOccurs="0"/>
<xs:element name="targetCRS" type="uro:IfcCoordinateReferenceSystemPropertyType" minOccurs="0"/>
<xs:element name="eastings" type="gml:LengthType" minOccurs="0"/>
<xs:element name="northings" type="gml:LengthType" minOccurs="0"/>
<xs:element name="orthogonalHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="xAxisAbscissa" type="xs:double" minOccurs="0"/>
<xs:element name="xAxisOrdinate" type="xs:double" minOccurs="0"/>
<xs:element name="scale" type="xs:double" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

IfcPsetSpaceCommonType, IfcPsetSpaceCommon

Type	Definition
IfcPsetSpaceCommon	Common property set for all types of spaces (Pset_SpaceCommon)
Property	Definition
reference	Reference ID for this specified type in this project (e.g. type'A-1')
category	Category of space usage or utilization of the area. It is defined according to the presiding national building code.
floorCovering	Label to indicate the material or finish of the space flooring. The label is used for room bookinformation and often displayed in room stamp.
wallCovering	Label to indicate the material or finish of the space flooring. The label is used for room bookinformation and often disolved in room stamo.
ceilingCovering	Label to indicate the material or finish of the space flooring. The label is used for room bookinformation and often displayed in room stamp.
skirtingBoard	Label to indicate the material or construction of the skirting board around the space flooring. The label is used for room book information and often displayed in room stamo.
grossPlannedArea	Total planned area for the space. Used for programming the space.
netPlannedArea	Net planned area for the space. Used for programming the space.
publiclyAccessible	Indication whether this space (in case of e.g., a toilet) is desigined to serve as a publicly accessible space, e.e., for a public toilet(TRUE) or not (FALSE).
handcapAccessible	Indication whether this space (in case of e.g., a toilet) is designed to serve as an accessible space for handicapped people, e.g., for a public toilet(TRUE) or not (FALSE). This information is often used to declare the need for access for the disabled and for special design requirements of this space.
concealedFlooring	Indication whether this space is declared to be a concealed flooring (TRUE) or not (FALSE). A concealed flooring normally meant to be the space beneath a raised floor.
concealedCeiling	Indication whether this space is declared to be a concealed ceiling (TRUE) or not (FALSE). A concealed ceiling normally meant to be the space between a slab and a suspended ceiling.

```
<xs:element name="IfcPsetSpaceCommon" type="uro:IfcPsetSpaceCommonType" substitutionGroup="uro:IfcAttribute">
</xs:element>
<xs:complexType name="IfcPsetSpaceCommonType">
<xs:complexContent>
```

```

<xs:extension base="uro:IbcAttributeType">
  <xs:sequence>
    <xs:element name="reference" type="xs:string" minOccurs="0"/>
    <xs:element name="category" type="xs:string" minOccurs="0"/>
    <xs:element name="floorCovering" type="xs:string" minOccurs="0"/>
    <xs:element name="wallCovering" type="xs:string" minOccurs="0"/>
    <xs:element name="ceilingCovering" type="xs:string" minOccurs="0"/>
    <xs:element name="skirtingBoard" type="xs:string" minOccurs="0"/>
    <xs:element name="grossPlannedArea" type="gml:MeasureType" minOccurs="0"/>
    <xs:element name="netPlannedArea" type="gml:MeasureType" minOccurs="0"/>
    <xs:element name="publiclyAccessible" type="xs:boolean" minOccurs="0"/>
    <xs:element name="handicapAccessible" type="xs:boolean" minOccurs="0"/>
    <xs:element name="concealedFlooring" type="xs:boolean" minOccurs="0"/>
    <xs:element name="concealedCeiling" type="xs:boolean" minOccurs="0"/>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcSpaceBaseQualityType, IfcSpaceBaseQuality

Type	Definition
IfcSpaceBaseQuality	Quantity information of the Space.
Property	Definition
nominalHeight	Floor Height (without flooring) to Ceiling height (without suspended ceiling) for this space (measured from top of slab of this space to the bottom of slab of space above); the average shall be taken if room shape is not prismatic.
clearHeight	Clear Height between floor level (including finish) and ceiling level (including finish and subconstruction) of this space; the average shall be taken if room shape is not prismatic.
finishCeilingHeight	Calculated gross perimeter at the floor level of this space. It all sides of the space, including those parts of the perimeter that are created by virtual boundaries and openings. The exact definition and calculation rules depend on the method of measurement used.
grossPerimeter	Calculated net perimeter at the floor level of this space. It normally excludes those parts of the perimeter that are created by virtual boundaries and openings. The exact definition and calculation rules depend on the method of measurement used.
netPerimeter	Calculated sum of all floor areas covered by the space. It normally includes the area covered by elements inside the space (columns, inner walls, etc.). The exact definition and calculation rules depend on the method of measurement used.
grossCeilingArea	Calculated sum of all usable floor areas covered by the space. It normally excludes the area covered by elements inside the space (columns, inner walls, etc.), floor openings, or other protruding elements. Special rules apply for areas that have a low headroom. The exact definition and calculation rules depend on the method of measurement used.
grossFloorArea	Calculated sum of all ceiling areas of the space. It normally includes the area covered by elements inside the space (columns, inner walls, etc.). The ceiling area is the real (and not the projected) area (e.g. in case of sloped ceilings). The exact definition and calculation rules depend on the method of measurement used.
netCeilingArea	Calculated sum of all ceiling areas covered by the space. It normally excludes the area covered by elements inside the space (columns, inner walls, etc.) or by ceiling openings. The ceiling area is the real (and not the projected) area (e.g. in case of sloped ceilings). The exact definition and calculation rules depend on the method of measurement used.
netFloorArea	Calculated sum of all wall areas bounded by the space. It normally includes the area covered by elements inside the wall area (doors, windows, other openings, etc.). The exact definition and calculation rules depend on the method of measurement used.
grossWallArea	Calculated sum of all wall areas bounded by the space. It normally excludes the area covered by elements inside the wall area (doors, windows, other openings, etc.). Special rules apply for areas that have a low headroom. The exact definition and calculation rules depend on the method of measurement used.

netWallArea	Calculated gross volume of all areas enclosed by the space (normally including the volume of construction elements inside the space). The exact definition and calculation rules depend on the method of measurement used.
grossVolume	Calculated net volume of all areas enclosed by the space (nonnally excluding the volume of construction elements inside the space). The exact definition ai1d calculationrules depend on the method of measurement used.
netVolume	Floor Height (without flooring) to Ceiling height (without suspended ceiling) for this space (measured from top of slab of this space to the bottom of slab of space above); the average shall be taken ifroom shape is not prismatic.

```

<xs:element name="IfcSpaceBaseQuantity" type="uro:IfcSpaceBaseQuantityType" substitutionGroup="uro:IfcAttribute">
</xs:element>
<xs:complexType name="IfcSpaceBaseQuantityType">
<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>
<xs:element name="nominalHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="clearHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="finishCeilingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="grossPerimeter" type="gml:LengthType" minOccurs="0"/>
<xs:element name="netPerimeter" type="gml:LengthType" minOccurs="0"/>
<xs:element name="grossCeilingArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netCeilingArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossWallArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netWallArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossVolume" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netVolume" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcPsetDoorCommonType, IfcPsetDoorCommon

Type	Definition
IfcPsetDoorCommon	Properties common to the definition of all occurrences of IfcDoor.
Property	Definition
reference	Reference ID for this specified type in this project (e.g. type'A-1')
acousticRating	Fire rating for this object. It is given according to the national fire safety classification.
firerating	Acoustic rating for this object. It is giving according to the national building code. It indicates the sound transmission resistance of this object by an index ration (instead of providing full sound absorbtion values).
securityRating	Index based ratingsystem indicating security level. It is giving according to the national building code.
isExternal	Indication whether the element is designed for use in the exterior (TRUE}or not (FALSE). If (TRUE) it is an external element and faces the outside of the building.
infiltration	Infiltration flowrate of outside air for the filler object based on the area of the filler object at a pressure level of 50 Pascals. It shall be used, if the length of all joints is unla10wn.
thermalTransmittance	Thermal transmittance coefficient (U-Value) of a material. It applies to the total door construction.
glazingAreaFraction	Fraction of the glazing area relative to the total area of the filling element. It shall be used, if the glazing area is not given separately for all panels within the filling element.
handicapAccessible	Indication that this object is designed to be accessible by the handicapped. It is giving according to the requirements of the national building code.

fireExit	Indication whether this object is designed to serve as an exit in the case of fire (TRUE) or not (FALSE). Here it defines a fire exit door in accordance to the national building code.
selfClosing	Indication whether this object is designed to close automatically after use (TRUE) or not (FALSE).
smokeStop	Indication whether the object is designed to provide a smoke stop (TRUE) or not (FALSE).

```

<xs:element name="IfcPsetDoorCommon" type="uro:IfcPsetDoorCommonType" substitutionGroup="uro:IfcAttribute">
</xs:element>
<xs:complexType name="IfcPsetDoorCommonType">
<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>
<xs:element name="reference" type="xs:string" minOccurs="0"/>
<xs:element name="acousticRating" type="xs:string" minOccurs="0"/>
<xs:element name="firerating" type="xs:string" minOccurs="0"/>
<xs:element name="securityRating" type="xs:string" minOccurs="0"/>
<xs:element name="isExternal" type="xs:boolean" minOccurs="0"/>
<xs:element name="infiltration" type="xs:double" minOccurs="0"/>
<xs:element name="thermalTransmittance" type="xs:double" minOccurs="0"/>
<xs:element name="glazingAreaFraction" type="xs:double" minOccurs="0"/>
<xs:element name="handicapAccessible" type="xs:boolean" minOccurs="0"/>
<xs:element name="fireExit" type="xs:boolean" minOccurs="0"/>
<xs:element name="selfClosing" type="xs:boolean" minOccurs="0"/>
<xs:element name="smokeStop" type="xs:boolean" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcPsetWindowCommonType, IfcPsetWindowCommon

Type	Definition
IfcPsetWindowCommon	Properties common to the definition of all occurrences of IfcWindow.
Property	Definition
acousticRating	Fire rating for this object. It is given according to the national fire safety classification.
firerating	Acoustic rating for this object. It is given according to the national building code. It indicates the sound transmission resistance of this object by an index rating (instead of ISO 140:2001 full sound absorption values).
securityRating	Index based rating system indicating security level. It is given according to the national building code.
isExternal	Indication whether the element is designed for use in the exterior (TRUE) or not (FALSE). If (TRUE) it is an external element and faces the outside of the building.
infiltration	Infiltration flowrate of outside air for the filling object based on the area of the filling object at a pressure level of 50 Pascals. It shall be used, if the length of all joints is unclassified.
thermalTransmittance	Thermal transmittance coefficient (U-Value) of a material. It applies to the total door construction.
glazingAreaFraction	Fraction of the glazing area relative to the total area of the filling element. It shall be used, if the glazing area is not given separately for all panels within the filling element.
smokeStop	Indication whether the object is designed to provide a smoke stop (TRUE) or not (FALSE).
acousticRating	Fire rating for this object. It is given according to the national fire safety classification.
smokeStop	Indication whether the object is designed to provide a smoke stop (TRUE) or not (FALSE).

```

<xs:element name="IfcPsetWindowCommon" type="uro:IfcPsetWindowCommonType"
substitutionGroup="uro:IfcAttribute"> </xs:element>
<xs:complexType name="IfcPsetWindowCommonType">

```



```

<xs:complexContent>
  <xs:extension base="uro:IfcAttributeType">
    <xs:sequence>
      <xs:element name="reference" type="xs:string" minOccurs="0"/>
      <xs:element name="acousticRating" type="xs:string" minOccurs="0"/>
      <xs:element name="fireRating" type="xs:string" minOccurs="0"/>
      <xs:element name="securityRating" type="xs:string" minOccurs="0"/>
      <xs:element name="isExternal" type="xs:boolean" minOccurs="0"/>
      <xs:element name="infiltration" type="xs:double" minOccurs="0"/>
      <xs:element name="thermalTransmittance" type="xs:double" minOccurs="0"/>
      <xs:element name="glazingAreaFraction" type="xs:double" minOccurs="0"/>
      <xs:element name="smokeStop" type="xs:boolean" minOccurs="0"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcPsetOpeningElementCommonType, IfcPsetOpeningElementCommon

Type	Definition
IfcPsetOpeningElementCommon	Properties common to the definition of all occurrences of IfcOpeningElement.
Property	Definition
reference	Reference ID for this specified type in this project (e.g. type'A-1')
purpose	Indication of the purpose for that opening. e.g. 'ventilation', 'access', etc.
fireExit	Indication whether this object is designed to serve as an exit in the case of fire (TRUE)
protectedOpening	Indication whether the opening is considered to be protected under fire safety considerations. If (TRUE) it counts as a protected opening under the applicable building code, (FALSE) otherwise.
parallelJambs	Indicated, whether the jambs of an opening in a curved building element are intended to be parallel (TRUE) or are radial (FALSE). Radial means, that the extension of the iambs are ravs through the axis of the revolution formine the curved buildine element.

```

<xs:element name="IfcPsetOpeningElementCommon" type="uro:IfcPsetOpeningElementCommonType"
substitutionGroup="uro:IfcAttribute">
</xs:element>
<xs:complexType name="IfcPsetOpeningElementCommonType">
  <xs:complexContent>
    <xs:extension base="uro:IfcAttributeType">
      <xs:sequence>
        <xs:element name="reference" type="xs:string" minOccurs="0"/>
        <xs:element name="purpose" type="xs:string" minOccurs="0"/>
        <xs:element name="fireExit" type="xs:boolean" minOccurs="0"/>
        <xs:element name="protectedOpening" type="xs:boolean" minOccurs="0"/>
        <xs:element name="parallelJambs" type="xs:boolean" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

IfcPsetBuildingCommonType, IfcPsetBuildingCommon

Type	Definition
IfcPsetBuildingCommon	Properties common to the definition of all occurrences of IfcBuilding.
Property	Definition
buildingId	A unique identifier assigned to a building. A temporary identifier is initially assigned at the time of making a planning application. This temporary identifier is changed to a

	permanent identifier when the building is registered into a statutory buildings and properties database.
isPermanentId	Indicates whether the identity assigned to a building is permanent (= TRUE) or temporary (=FALSE)
mainFireUse	Main fire use for the building which is assigned from the fire use classification table as given by the relevant national building code.
ancillaryFireUse	Ancillary fire use for the building which is assigned from the fire use classification table as given by the relevant national building code.
sprinklerProtection	Indication whether this object is sprinkler protected (TRUE) or not (FALSE).
sprinklerProtectionAutomatic	Indication whether this object has an automatic sprinkler protection (TRUE) or not (FALSE). It should only be given, if the property "SprinklerProtection" is set to TRUE.
occupancyType	Occupancy type for this object It is defined according to the presiding national building code.
grossPlannedArea	Total planned area for the building Used for programming the building.
numberOfStoreys	Captures the number of storeys within a building for those cases where the IfcBuildingStorey entity is not used. Note that if IfcBuildingStorey is asserted and the number of storeys in a building can be determined from it, then this approach should be used in reference to set a reference for the number of storeys.
yearOfConstruction	Year of construction of this building, including expected year of completion.

```

<xs:element name="IfcPsetBuildingCommon" type="uro:IfcPsetBuildingCommonType"
substitutionGroup="uro:IfcAttribute"></xs:element>
<xs:complexType name="IfcPsetBuildingCommonType">
<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>
<xs:element name="buildingId" type="xs:string" minOccurs="0"/>
<xs:element name="isPermanentId" type="xs:boolean" minOccurs="0"/>
<xs:element name="mainFireUse" type="xs:string" minOccurs="0"/>
<xs:element name="ancillaryFireUse" type="xs:string" minOccurs="0"/>
<xs:element name="sprinklerProtection" type="xs:boolean" minOccurs="0"/>
<xs:element name="sprinklerProtectionAutomatic" type="xs:boolean" minOccurs="0"/>
<xs:element name="occupancyType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="grossPlannedArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="numberOfStoreys" type="xs:integer" minOccurs="0"/>
<xs:element name="yearOfConstruction" type="xs:gYear" minOccurs="0"/>
<xs:element name="isLandmarked" type="xs:boolean" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcPsetSiteCommonType, IfcPsetSiteCommon

Type	Definition
IfcPsetSiteCommon	Common property set for all types of site.
Property	Definition
buildableArea	The area of utilization expressed as a minimum value and a maximum value - according to local building codes.
totalArea	Total area of the site - measured according to local building codes.
buildingHeightLimit	Calculated maximum height of buildings on this site - according to local building codes.

```

<xs:element name="IfcPsetSiteCommon" type="uro:IfcPsetSiteCommonType" substitutionGroup="uro:IfcAttribute">
</xs:element>
<xs:complexType name="IfcPsetSiteCommonType">
<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>

```

```

<xs:element name="buildableArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="totalArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="buildingHeightLimit" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

IfcCoordinateReferenceSystemSelectType, IfcCoordinateReferenceSystemSelect

Type	Definition
IfcCoordinateReferenceSystemSelect	A select between either the local engineering coordinate system, represented by the IfcGeometricRepresentationContext, or another coordinate reference system, represented by IfcCoordinateReferenceSystem, to be the source of a coordinate operation.
Property	Definition
crs	Coordinate reference system, represented by IfcCoordinateReferenceSystem.
context	Local engineering coordinate system, represented by the IfcGeometricRepresentationContext

```

<xs:complexType name="IfcCoordinateReferenceSystemSelectType">
<xs:choice>
<xs:element name="crs" type="uro:IfcCoordinateReferenceSystemPropertyType"/>
<xs:element name="context" type="uro:IfcGeometricRepresentationContextPropertyType"/>
</xs:choice>
</xs:complexType>

```

IfcGeometricRepresentationContextType, IfcGeometricRepresentationContext

Type	Definition
IfcGeometricRepresentationContext	The context that applies to several shape representations of products within a project.
Property	Definition
contentIdentifier	The optional identifier of the representation context as used within a project.
contentType	The description of the type of a representation context.
coordinateSpaceDimension	The integer dimension count of the coordinate space modeled in a geometric representation context.
precision	Value of the model precision for geometric models.
worldCoordinateSystem	Establishment of the engineering coordinate system (often referred to as the world coordinate system in CAD) for all representation contexts used by the object.
trueNorth	Direction of the true north relative to the underlying coordinate system as established by the attribute WorldCoordinateSystem.

```

<xs:element name="IfcGeometricRepresentationContext" type="uro:IfcGeometricRepresentationContextType">
</xs:element>
<xs:complexType name="IfcGeometricRepresentationContextType">
<xs:sequence>
<xs:element name="contextIdentifier" type="xs:string" minOccurs="0"/>
<xs:element name="contentType" type="xs:string" minOccurs="0"/>
<xs:element name="coordinateSpaceDimension" type="xs:integer" minOccurs="0"/>
<xs:element name="precision" type="xs:double" minOccurs="0"/>
<xs:element name="worldCoordinateSystem" type="uro:IfcAxis2Placement3DPropertyType"/>
<xs:element name="trueNorth" type="gml:doubleList" minOccurs="0"/>
</xs:sequence>
</xs:complexType>

```

IfcAxis2Placement3DType, IfcAxis2Placement3D

Type	Definition
IfcAxis2Placement3D	The location and orientation in three dimensional space of three mutually perpendicular axes.
Property	Definition
location	The geometric position of a reference point, such as the center of a circle, of the item to be located.
axis	The exact direction of the local Z Axis.
refDirection	The direction used to determine the direction of the local X Axis.

```
<xs:element name="IfcAxis2Placement3D" type="uro:IfcAxis2Placement3DType">
<xs:complexType name="IfcAxis2Placement3DType">
<xs:sequence>
<xs:element name="location" type="gml:PointPropertyType" minOccurs="0"/>
<xs:element name="axis" type="gml:doubleList" minOccurs="0"/>
<xs:element name="refDirection" type="gml:doubleList" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
```

IfcUnitType, IfcUnit

Type	Definition
IfcUnit	An SI unit is the fixed quantity used as a standard in terms of which items are measured as defined by ISO 1000.
Property	Definition
dimensions	The dimensional exponents of the SI base units by which the named unit is defined.
unitType	The type of the unit. Value should be chosen from the following list: ABSORBEDDOSEUNIT, AMOUNTOFSUBSTANCEUNIT, AREAUNIT, DOSEEQUIVALENTUNIT, ELECTRICCAPACITANCEUNIT, ELECTRICCHARGEUNIT, ELECTRICCONDUCTANCEUNIT, ELECTRICCURRENTUNIT, ELECTRICRESISTANCEUNIT,ELECTRICVOLTAGEUNIT, ENERGYUNIT, FORCEUNIT,FREQUENCYUNIT, ILLUMINANCEUNIT, INDUCTANCEUNIT, LENGTHUNIT, LUMINOUSFLUXUNIT, LUMINOUSINTENSITYUNIT, MAGNETICFLUXDENSITYUNIT, MAGNETICFLUXUNIT, MASSUNIT, PLANEANGLEUNIT, POWERUNIT, PRESSUREUNIT, RADIOACTIVITYUNIT, SOLIDANGLEUNIT, THERMODYNAMICTEMPERATUREUNIT, TIMEUNIT, VOLUMEUNIT, USERDEFINED,
prefix	The SI Prefix for defining decimal multiples and submultiples of the unit.
name	The word, or group of words, by which the SI unit is referred to.

```
<xs:element name="IfcUnit" type="uro:IfcUnitType"></xs:element>
<xs:complexType name="IfcUnitType">
<xs:sequence>
<xs:element name="dimensions" type="xs:integer" minOccurs="0"/>
<xs:element name="unitType" type="uro:IfcUnitEnum" minOccurs="0"/>
<xs:element name="perfix" type="xs:string" minOccurs="0"/>
<xs:element name="name" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
```

4.2.20 Extended properties of indoor navigation

3D building models are expected to be useful for pedestrian navigation services. Figure-24 shows data types used to add properties specific to pedestrian navigation to the features defined in CityGML Building module. These data types are consistent with the data model in the "3D Indoor Geospatial Data Product Specification" published by Geospatial Information Authority of Japan, the national mapping agency of Japan. The data product based on this specification is intended to be used primarily for pedestrian navigation in indoor spaces and, as a side effect, as fundamental data for future use in facility management.

Figure-24 shows the extended properties and data types for pedestrian navigation.

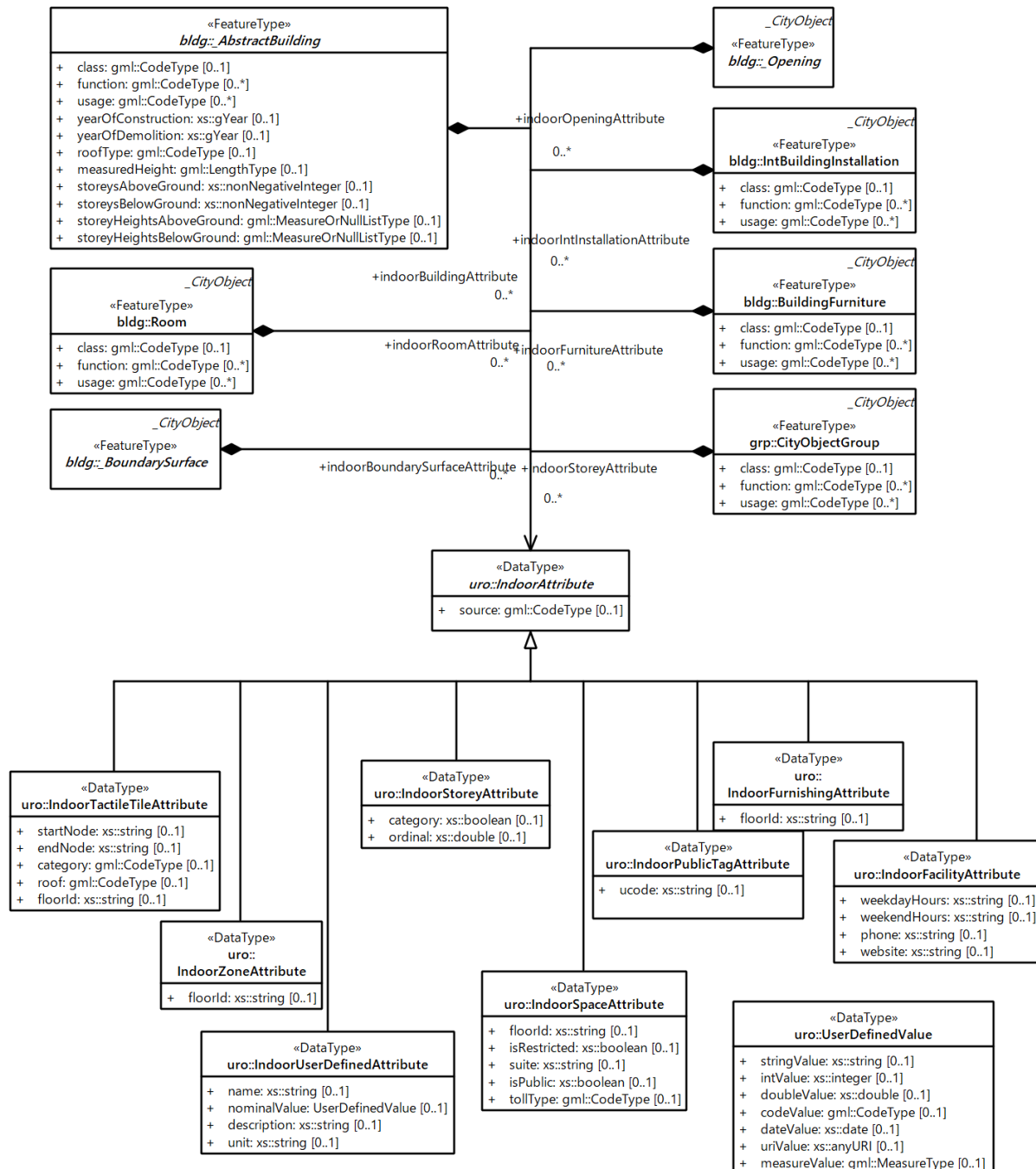


Figure1-33 UML diagram of extended properties for indoor navigation

IndoorAttributeType, IndoorAttribute

Type	Definition
IndoorAttribute	Property set for indoor pedestrian navigation.
Property	Definition
source	Source of this property set.

```
<xs:complexType name="IndoorAttributeType" abstract="true">
  <xs:sequence>
    <xs:element name="source" type="gml:CodeType" minOccurs="0"/></xs:element>
  </xs:sequence>
</xs:complexType>
```

IndoorFurnishingAttributeType, IndoorFurnishingAttribute

Type	Definition
IndoorFurnishingAttribute	Property set of building furniture for indoor pedestrian navigation.
Property	Definition
floorId	Unique ID representing the floor of the building on which this object is located.

```
<xs:complexType name="IndoorFurnishingAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="floorId" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="IndoorZoneAttribute" type="uro:IndoorZoneAttributeType"
  substitutionGroup="uro:IndoorAttribute"/>
```

IndoorZoneAttributeType, IndoorZoneAttribute

Type	Definition
IndoorZoneAttribute	Property set of the zone for indoor pedestrian navigation.
Property	Definition
floorId	Unique ID representing the floor of the building on which this object is located.

```
<xs:complexType name="IndoorZoneAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="floorId" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

IndoorStoreyAttributeType, IndoorStoreyAttribute

Type	Definition
IndoorStoreyAttribute	Property set of building storey for indoor pedestrian navigation.
Property	Definition
category	Indoor or outdoor classification 1: Indoor 2: Outdoor
ordinal	Number of the storey.

```

<xs:element name="IndoorStoreyAttribute" type="uro:IndoorStoreyAttributeType"
substitutionGroup="uro:IndoorAttribute"/>
<xs:complexType name="IndoorStoreyAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="category" type="xs:boolean" minOccurs="0"/>
        <xs:element name="ordinal" type="xs:double" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

IndoorSpaceAttributeType, IndoorSpaceAttribute

Type	Definition
IndoorSpaceAttribute	Property set of building space for indoor pedestrian navigation.
Property	Definition
floorId	Unique ID representing the floor of the building on which this object is located.
isRestricted	Flag indicating whether or not there are restrictions on entry by the general public. 1: restricted 2: not restricted
suite	Annotation label for map description.
isPublic	Flag indicating whether to publish or not. 1: closed 2: open
tollType	Flag indicating whether the facility is a toll facility or not. 1: unknown 1: toll facility 2: free facility

```

<xs:element name="IndoorSpaceAttribute" type="uro:IndoorSpaceAttributeType"
substitutionGroup="uro:IndoorAttribute"/>
<xs:complexType name="IndoorSpaceAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="floorId" type="xs:string" minOccurs="0"/>
        <xs:element name="isRestricted" type="xs:boolean" minOccurs="0"/>
        <xs:element name="suite" type="xs:string" minOccurs="0"/>
        <xs:element name="isPublic" type="xs:boolean" minOccurs="0"/>
        <xs:element name="tollType" type="gml:CodeType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

IndoorFacilityAttributeType, IndoorFacilityAttribute

Type	Definition
IndoorFacilityAttribute	Property set of building facility for indoor pedestrian navigation.
Property	Definition
weekdayHours	Weekday business hours.
weekendHours	Weekend business hours.
phone	Phone number.
website	Website URL address.

```

<xs:element name="IndoorFacilityAttribute" type="uro:IndoorFacilityAttributeType"
substitutionGroup="uro:IndoorAttribute"/>

```

```

<xs:complexType name="IndoorFacilityAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="weekdayHours" type="xs:string" minOccurs="0"/>
        <xs:element name="weekendHours" type="xs:string" minOccurs="0"/>
        <xs:element name="phone" type="xs:string" minOccurs="0"/>
        <xs:element name="website" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

IndoorPublicTagAttributeType, IndoorPublicTagAttribute

Type	Definition
IndoorPublicTagAttribute	Property set of the public tag for indoor pedestrian navigation.
Property	Definition
ucode	public tag code assigned to this facility.

```

<xs:element name="IndoorPublicTagAttribute" type="uro:IndoorPublicTagAttributeType"
substitutionGroup="uro:IndoorAttribute"/>
<xs:complexType name="IndoorPublicTagAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="ucode" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

IndoorTacatileTileAttributeType, IndoorTacatileTileAttribute

Type	Definition
IndoorTacatileTileAttribute	Property set of building element for indoor pedestrian navigation.
Property	Definition
startNode	Start node id of tacatile tile.
endNode	End node id of tacatile tile.
category	Type of tacatile tile.
roof	With/without roof. 1: roofed 2: unroofed 9: unknown
floorId	Unique ID representing the floor of the building on which this object is located.

```

<xs:element name="IndoorTacatileTileAttribute" type="uro:IndoorTacatileTileAttributeType"
substitutionGroup="uro:IndoorAttribute"/>
<xs:complexType name="IndoorTacatileTileAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="startNode" type="xs:string" minOccurs="0"/>
        <xs:element name="endNode" type="xs:string" minOccurs="0"/>
        <xs:element name="category" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="roof" type="xs:string" minOccurs="0"/>
        <xs:element name="floorId" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```



```
</xs:complexContent>
</xs:complexType>
```

IndoorUserDefinedAttributeType, IndoorUserDefinedAttribute

Type	Definition
IndoorUserDefinedAttribute	User defined property set for indoor pedestrian navigation.
Property	Definition
name	Name of user defined property.
nominalIntValue	Integer value of the user defined property.
nominalDoubleValue	Double value of the user defined property.
nominalStringValue	String value of the user defined property.
nominalCodeValue	Code value of the user defined property.
nominalMeasureValue	Measure value of the user defined property.
description	Description of the user defined property.
unit	Unit of the user defined property.

```
<xs:element name="IndoorUserDefinedAttribute" type="uro:IndoorUserDefinedAttributeType"
substitutionGroup="uro:IndoorAttribute"/>
<xs:complexType name="IndoorUserDefinedAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="name" type="xs:string" minOccurs="0"/>
        <xs:element name="nominalValue" type="uro:UserDefinedValuePropertyType" minOccurs="0"/>
        <xs:element name="description" type="xs:string" minOccurs="0"/>
        <xs:element name="unit" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
```

UserDefinedValueType, UserDefinedValue

Type	Definition
UserDefinedValue	Value of the user defined attribute.
Property	Definition
stringValue	String value
intValue	Integer value.
doubleValue	Double value.
codeValue	Code value.
dateValue	Date value.
uriValue	URI value.
measuredValue	Measured value.

```
<xs:element name="UserDefinedValue" type="uro:UserDefinedValueType"/>
<xs:complexType name="UserDefinedValueType">
  <xs:sequence>
    <xs:element name="stringValue" type="xs:string" minOccurs="0"/>
    <xs:element name="intValue" type="xs:integer" minOccurs="0"/>
    <xs:element name="doubleValue" type="xs:double" minOccurs="0"/>
    <xs:element name="codeValue" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="dateValue" type="xs:date" minOccurs="0"/>
    <xs:element name="uriValue" type="xs:anyURI" minOccurs="0"/>
    <xs:element name="measuredValue" type="gml:MeasureType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
```

Annex A (normative)

XMLSchema Definition

A.1 XMLSchema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:uro="https://www.geospatial.jp/iur/uro/3.1" xmlns:core="http://www.opengis.net/citygml/2.0" xmlns:luse="http://www.opengis.net/citygml/landuse/2.0" xmlns:bldg="http://www.opengis.net/citygml/building/2.0" xmlns:brid="http://www.opengis.net/citygml/bridge/2.0" xmlns:tran="http://www.opengis.net/citygml/transportation/2.0" xmlns:tun="http://www.opengis.net/citygml/tunnel/2.0" xmlns:grp="http://www.opengis.net/citygml/cityobjectgroup/2.0" xmlns:frn="http://www.opengis.net/citygml/cityfurniture/2.0" xmlns:veg="http://www.opengis.net/citygml/vegetation/2.0" xmlns:wtr="http://www.opengis.net/citygml/waterbody/2.0" xmlns:dem="http://www.opengis.net/citygml/relief/2.0" xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:gml="http://www.opengis.net/gml" targetNamespace="https://www.geospatial.jp/iur/uro/3.1" elementFormDefault="qualified" attributeFormDefault="unqualified" version="3.1.-">
  <xs:annotation>
    <xs:documentation>XML Schema for Urban Object module</xs:documentation>
    <xs:documentation>3D 都市モデル標準製品仕様書第 4.0 版に対応</xs:documentation>
    <xs:documentation>都市計画データ標準製品仕様書第 1.1 版に対応</xs:documentation>
  </xs:annotation>
  <xs:import namespace="http://www.opengis.net/gml" schemaLocation="http://schemas.opengis.net/gml/3.1.1/base/gml.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/2.0" schemaLocation="http://schemas.opengis.net/citygml/2.0/cityGMLBase.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/bridge/2.0" schemaLocation="http://schemas.opengis.net/citygml/bridge/2.0/bridge.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/building/2.0" schemaLocation="http://schemas.opengis.net/citygml/building/2.0/building.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/transportation/2.0" schemaLocation="http://schemas.opengis.net/citygml/transportation/2.0/transportation.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/tunnel/2.0" schemaLocation="http://schemas.opengis.net/citygml/tunnel/2.0/tunnel.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/landuse/2.0" schemaLocation="http://schemas.opengis.net/citygml/landuse/2.0/landUse.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/cityobjectgroup/2.0" schemaLocation="http://schemas.opengis.net/citygml/cityobjectgroup/2.0/cityObjectGroup.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/cityfurniture/2.0" schemaLocation="http://schemas.opengis.net/citygml/cityfurniture/2.0/cityFurniture.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/vegetation/2.0" schemaLocation="http://schemas.opengis.net/citygml/vegetation/2.0/vegetation.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/waterbody/2.0" schemaLocation="http://schemas.opengis.net/citygml/waterbody/2.0/waterBody.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/relief/2.0" schemaLocation="http://schemas.opengis.net/citygml/relief/2.0/relief.xsd"/>
  <!-- ===== 3D city model ===== -->
  <!-- ===== Bridge model ===== -->
  <xs:element name="bridBaseAttribute" type="uro:ConstructionBaseAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge"/>
  <xs:element name="bridFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge"/>
  <xs:element name="bridFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge"/>
  <xs:element name="bridFacilityAttribute" type="uro:FacilityAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge"/>
```

```

<xs:element name="bridStructureAttribute" type="uro:BridgeStructureAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge"/>
<xs:element name="bridFunctionalAttribute" type="uro:BridgeFunctionalAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge"/>
<xs:element name="bridRiskAssessmentAttribute" type="uro:ConstructionRiskAssessmentAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge"/>
<xs:element name="bridDisasterRiskAttribute" type="uro:DisasterRiskAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge"/>
<xs:element name="bridDmAttribute" type="uro:DmAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge"/>
<xs:element name="bridDataQualityAttribute" type="uro:DataQualityAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge">
  <xs:annotation>
    <xs:documentation>第 4.0 版</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="bridKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType" substitutionGroup="brid:_GenericApplicationPropertyOfAbstractBridge">
  <xs:annotation>
    <xs:documentation>第 4.0 版追加</xs:documentation>
  </xs:annotation>
</xs:element>
<!-- ===== Building model ===== -->
<xs:element name="buildingIDAttribute" type="uro:BuildingIDAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="buildingDetailAttribute" type="uro:BuildingDetailAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="largeCustomerFacilityAttribute" type="uro:LargeCustomerFacilityAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgDisasterRiskAttribute" type="uro:DisasterRiskAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="bldgKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="buildingDataQualityAttribute" type="uro:DataQualityAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="bldgFacilityIDAttribute" type="uro:FacilityIDAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgFacilityAttribute" type="uro:FacilityAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgDmAttribute" type="uro:DmAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgRealEstateIDAttribute" type="uro:RealEstateIDAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="bldgUsecaseAttribute" type="uro:BuildingUsecaseAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding">

```

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<xs:annotation>
  <xs:documentation>第 4.0 版追加</xs:documentation>
</xs:annotation>
</xs:element>
<!-- ===== CityFurniture model ===== -->
<xs:element name="frnFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType" substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/>
<xs:element name="frnFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType" substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/>
<xs:element name="frnFacilityAttribute" type="uro:FacilityAttributePropertyType" substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/>
<xs:element name="frnDmAttribute" type="uro:DmAttributePropertyType" substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/>
<xs:element name="cityFurnitureDetailAttribute" type="uro:CityFurnitureDetailAttributePropertyType" substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture"/>
<xs:element name="frnDataQualityAttribute" type="uro:DataQualityAttributePropertyType" substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="frnKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType" substitutionGroup="frn:_GenericApplicationPropertyOfCityFurniture">
  <xs:annotation>
    <xs:documentation>第 4.0 版追加</xs:documentation>
  </xs:annotation>
</xs:element>
<!-- ===== CityObjectGroup model ===== -->
<xs:element name="fiscalYearOfPublication" type="xs:gYear" substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>
<xs:element name="language" type="gml:CodeType" substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>
<!-- ===== LandUse model ===== -->
<xs:element name="landUseDetailAttribute" type="uro:LandUseDetailAttributePropertyType" substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>
<xs:element name="luseFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType" substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>
<xs:element name="luseFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType" substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>
<xs:element name="luseFacilityAttribute" type="uro:FacilityAttributePropertyType" substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>
<xs:element name="luseDmAttribute" type="uro:DmAttributePropertyType" substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>
<xs:element name="luseDataQualityAttribute" type="uro:DataQualityAttributePropertyType" substitutionGroup="luse:_GenericApplicationPropertyOfLandUse">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="luseKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType" substitutionGroup="luse:_GenericApplicationPropertyOfLandUse">
  <xs:annotation>
    <xs:documentation>第 4.0 版追加</xs:documentation>
  </xs:annotation>
</xs:element>
<!-- ===== Relief model ===== -->
<xs:element name="demDmAttribute" type="uro:DmAttributePropertyType" substitutionGroup="dem:_GenericApplicationPropertyOfReliefComponent"/>
<xs:element name="demDataQualityAttribute" type="uro:DataQualityAttributePropertyType" substitutionGroup="dem:_GenericApplicationPropertyOfReliefFeature">

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<xs:annotation>
  <xs:documentation>第 4.0 版</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="demKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType" substitutionGroup="dem:_GenericApplicationPropertyOfReliefFeature">
  <xs:annotation>
    <xs:documentation>第 4.0 版追加</xs:documentation>
  </xs:annotation>
</xs:element>

<!-- ===== Transportation model ===== -->
<xs:element name="tranFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfTransportationComplex"/>
<xs:element name="tranFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfTransportationComplex"/>
<xs:element name="tranFacilityAttribute" type="uro:FacilityAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfTransportationComplex"/>
<xs:element name="tranDmAttribute" type="uro:DmAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfTransportationObject"/>
<xs:element name="tranDataQualityAttribute" type="uro:DataQualityAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfTransportationComplex">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="railwayTrackAttribute" type="uro:RailwayTrackAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfTrafficArea"/>
<xs:element name="trafficVolumeAttribute" type="uro:TrafficVolumeAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfRoad"/>
<xs:element name="roadStructureAttribute" type="uro:RoadStructureAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfRoad"/>
<xs:element name="trafficAreaStructureAttribute" type="uro:TrafficAreaStructureAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfTrafficArea"/>
<xs:element name="tranUsecaseAttribute" type="uro:TrafficObjectUsecaseAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfTransportationObject">
  <xs:annotation>
    <xs:documentation>第 4.0 版追加</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="tranKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfTransportationComplex">
  <xs:annotation>
    <xs:documentation>第 4.0 版追加</xs:documentation>
  </xs:annotation>
</xs:element>

<!-- ===== Tunnel model ===== -->
<xs:element name="tunBaseAttribute" type="uro:ConstructionBaseAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunStructureAttribute" type="uro:TunnelStructureAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunFunctionalAttribute" type="uro:TunnelFunctionalAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunRiskAssessmentAttribute" type="uro:ConstructionRiskAssessmentAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunDisasterRiskAttribute" type="uro:DisasterRiskAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>

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<xs:element name="tunDmAttribute" type="uro:DmAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunDataQualityAttribute" type="uro:DataQualityAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="tunFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunFacilityAttribute" type="uro:FacilityAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel"/>
<xs:element name="tunKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType" substitutionGroup="tun:_GenericApplicationPropertyOfAbstractTunnel">
  <xs:annotation>
    <xs:documentation>第 4.0 版追加</xs:documentation>
  </xs:annotation>
</xs:element>

<!-- ===== Vegetation model ===== -->
<xs:element name="vegFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType" substitutionGroup="veg:_GenericApplicationPropertyOfVegetationObject"/>
<xs:element name="vegFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType" substitutionGroup="veg:_GenericApplicationPropertyOfVegetationObject"/>
<xs:element name="vegFacilityAttribute" type="uro:FacilityAttributePropertyType" substitutionGroup="veg:_GenericApplicationPropertyOfVegetationObject"/>
<xs:element name="vegDmAttribute" type="uro:DmAttributePropertyType" substitutionGroup="veg:_GenericApplicationPropertyOfVegetationObject"/>
<xs:element name="vegDataQualityAttribute" type="uro:DataQualityAttributePropertyType" substitutionGroup="veg:_GenericApplicationPropertyOfVegetationObject">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="vegKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType" substitutionGroup="veg:_GenericApplicationPropertyOfVegetationObject">
  <xs:annotation>
    <xs:documentation>第 4.0 版追加</xs:documentation>
  </xs:annotation>
</xs:element>

<!-- ===== WaterBody model ===== -->
<xs:element name="floodingRiskAttribute" type="uro:FloodingRiskAttributePropertyType" substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="wtrFacilityIdAttribute" type="uro:FacilityIdAttributePropertyType" substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody"/>
<xs:element name="wtrFacilityTypeAttribute" type="uro:FacilityTypeAttributePropertyType" substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody"/>
<xs:element name="wtrFacilityAttribute" type="uro:FacilityAttributePropertyType" substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody"/>
<xs:element name="wtrDmAttribute" type="uro:DmAttributePropertyType" substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody"/>
<xs:element name="wtrDataQualityAttribute" type="uro:DataQualityAttributePropertyType" substitutionGroup="wtr:_GenericApplicationPropertyOfWaterBody">

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<xs:annotation>
  <xs:documentation>第 4.0 版追加</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="wtrKeyValuePairAttribute" type="uro:KeyValuePairAttributePropertyType" substitutionGroup="wtr:_
GenericApplicationPropertyOfWaterBody">
  <xs:annotation>
    <xs:documentation>第 4.0 版追加</xs:documentation>
  </xs:annotation>
</xs:element>
<!-- ===== ADE feature/dataType ===== -->
<!-- ===== 第 3.5 版 公園施設長寿命化計画属性 追加 ===== -->
<xs:element name="ParkFacilityLongevityPlanAttribute" type="uro:ParkFacilityLongevityPlanAttributeType" substitution
Group="uro:FacilityAttribute">
  <xs:annotation>
    <xs:documentation>第 3.5 版追加</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ParkFacilityLongevityPlanAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:ParkFacilityLongevityPlanAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ParkFacilityLongevityPlanAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FacilityAttributeType">
      <xs:sequence>
        <xs:element name="parkCode" type="gml:CodeType">
          <xs:annotation>
            <xs:documentation>Common_parkCode.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="parkName" type="gml:CodeType">
          <xs:annotation>
            <xs:documentation>Common_parkName.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="parkType" type="gml:CodeType">
          <xs:annotation>
            <xs:documentation>Common_parkType.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="facilityName" type="gml:CodeType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>Common_parkFacilityName.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="facilityNameOptional" type="xs:string" minOccurs="0"/>
        <xs:element name="specificFacilityName" type="xs:string"/>
        <xs:element name="numberOfFacilities" type="uro:NumberOfFacilitiesPropertyType" minOccurs="0"/>
        <xs:element name="size" type="xs:string" minOccurs="0"/>
        <xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>Common_parkFacilityMainMaterial.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="mainMaterialOptional" type="xs:string" minOccurs="0"/>
        <xs:element name="installationYear" type="xs:gYear"/>
        <xs:element name="disposalLimitPeriod" type="xs:integer" minOccurs="0"/>

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<xs:element name="expectedUsagePeriod" type="xs:integer" minOccurs="0"/>
<xs:element name="repairsBeforeParkHealthAssessment" type="uro:RepairsBeforeParkHealthAssessmentPropertyType" minOccurs="0"/>
<xs:element name="parkHealthAssessment" type="uro:ParkHealthAssessmentPropertyType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="managementType" type="gml:CodeType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Common_parkFacilityManagementType.xml</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="expectedRenewalYearWithMeasures" type="xs:gYear" minOccurs="0"/>
<xs:element name="longevityMeasures" type="uro:LongevityMeasuresPropertyType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="noteForLongevity" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<!-- 施設数量 -->
<xs:element name="NumberOfFacilities" type="uro:NumberOfFacilitiesType"/>
<xs:complexType name="NumberOfFacilitiesPropertyType">
  <xs:sequence>
    <xs:element ref="uro:NumberOfFacilities"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="NumberOfFacilitiesType">
  <xs:sequence>
    <xs:element name="quantity" type="xs:integer"/>
    <xs:element name="quantityUnit" type="gml:CodeType">
      <xs:annotation>
        <xs:documentation>Common_unitOfNumberOfParkFacilities.xml</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<!-- 健全度調査以前に実施した補修 -->
<xs:element name="RepairsBeforeParkHealthAssessment" type="uro:RepairsBeforeParkHealthAssessmentType"/>
<xs:complexType name="RepairsBeforeParkHealthAssessmentPropertyType">
  <xs:sequence>
    <xs:element ref="uro:RepairsBeforeParkHealthAssessment"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="RepairsBeforeParkHealthAssessmentType">
  <xs:sequence>
    <xs:element name="repair" type="gml:CodeType"/>
    <xs:element name="repairFiscalYear" type="xs:gYear" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<!-- 健全度調査結果 -->
<xs:element name="ParkHealthAssessment" type="uro:ParkHealthAssessmentType"/>
<xs:complexType name="ParkHealthAssessmentPropertyType">
  <xs:sequence>
    <xs:element ref="uro:ParkHealthAssessment"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ParkHealthAssessmentType">
  <xs:sequence>
    <xs:element name="assessmentFiscalYear" type="xs:gYear"/>
    <xs:element name="deteriorationStatus" type="xs:string" minOccurs="0"/>
    <xs:element name="condition" type="gml:CodeType" minOccurs="0">

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<xs:annotation>
  <xs:documentation>Common_parkHealthAssessmentCondition.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="urgency" type="gml:CodeType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Common_parkHealthAssessmentUrgency.xml</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>
<!-- 長寿命化対策 -->
<xs:element name="LongevityMeasures" type="uro:LongevityMeasuresType"/>
<xs:complexType name="LongevityMeasuresPropertyType">
  <xs:sequence>
    <xs:element ref="uro:LongevityMeasures"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="LongevityMeasuresType">
  <xs:sequence>
    <xs:element name="fiscalYearForCountermeasures" type="xs:gYear"/>
    <xs:element name="countermeasuresCost" type="uro:CountermeasuresCostPropertyType" minOccurs="0"/>
    <xs:element name="description" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<!-- 対策費用 -->
<xs:element name="CountermeasuresCost" type="uro:CountermeasuresCostType"/>
<xs:complexType name="CountermeasuresCostPropertyType">
  <xs:sequence>
    <xs:element ref="uro:CountermeasuresCost"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="CountermeasuresCostType">
  <xs:sequence>
    <xs:element name="cost" type="xs:integer" minOccurs="0"/>
    <xs:element name="costUnit" type="xs:string"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<!-- ===== 不動産 ID ===== -->
<xs:element name="RealEstateIDAttribute" type="uro:RealEstateIDAttributeType" substitutionGroup="uro:BuildingAttribute">
  <xs:annotation>
    <xs:documentation>不動産 ID</xs:documentation>
    <xs:documentation>第 3.3 版追加</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="RealEstateIDAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:BuildingAttributeType">
      <xs:sequence>
        <xs:element name="realEstateIDOfBuilding" type="xs:string"/>
        <xs:element name="numberOfBuildingUnitOwnership" type="xs:integer" minOccurs="0"/>
        <xs:element name="realEstateIDOfBuildingUnitOwnership" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="numberOfRealEstateIDOfLand" type="xs:integer" minOccurs="0"/>
<xs:element name="realEstateIDOfLand" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="matchingScore" type="xs:integer"/>
</xs:sequence>

```

```

</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="RealEstateIDAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:RealEstateIDAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<!-- ===== 施設管理属性/港湾施設/漁港施設/河川施設管理 ID ===== -->

<xs:element name="FacilityTypeAttribute" type="uro:FacilityTypeAttributeType"/>
<xs:complexType name="FacilityTypeAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:FacilityTypeAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="FacilityTypeAttributeType">
  <xs:sequence>
    <xs:element name="class" type="gml:CodeType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>第 3.2 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="function" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="FacilityIdAttribute" type="uro:FacilityIdAttributeType"/>
<xs:complexType name="FacilityIdAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:FacilityIdAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="FacilityIdAttributeType">
  <xs:sequence>
    <xs:element name="id" type="xs:string" minOccurs="0">
      <xs:annotation>
        <xs:documentation>第 3.2 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="partId" type="xs:string" minOccurs="0"/>
    <xs:element name="branchId" type="xs:string" minOccurs="0"/>
    <xs:element name="prefecture" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="city" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="route" type="xs:string" minOccurs="0"/>
    <xs:element name="startPost" type="xs:string" minOccurs="0"/>
    <xs:element name="endPost" type="xs:string" minOccurs="0"/>
    <xs:element name="startLat" type="xs:double" minOccurs="0"/>
    <xs:element name="startLong" type="xs:double" minOccurs="0"/>
    <xs:element name="alternativeName" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="RiverFacilityIdAttribute" type="uro:RiverFacilityIdAttributeType" substitutionGroup="uro:FacilityIdAttribute"/>
<xs:complexType name="RiverFacilityIdAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:RiverFacilityIdAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="RiverFacilityIdAttributeType">

```

```

<xs:complexContent>
  <xs:extension base="uro:FacilityIdAttributeType">
    <xs:sequence>
      <xs:element name="riverCode" type="gml:CodeType">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="riverName" type="xs:string" minOccurs="0">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="sideType" type="gml:CodeType">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="leftPost" type="gml:LengthType" minOccurs="0"/>
      <xs:element name="leftDistance" type="gml:LengthType" minOccurs="0"/>
      <xs:element name="rightPost" type="gml:LengthType" minOccurs="0"/>
      <xs:element name="rightDistance" type="gml:LengthType" minOccurs="0"/>
      <xs:element name="leftStartPost" type="gml:LengthType" minOccurs="0">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="leftStartDistance" type="gml:LengthType" minOccurs="0">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="leftEndPost" type="gml:LengthType" minOccurs="0">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="leftEndDistance" type="gml:LengthType" minOccurs="0">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="rightStartPost" type="gml:LengthType" minOccurs="0">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="rightStartDistance" type="gml:LengthType" minOccurs="0">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="rightEndPost" type="gml:LengthType" minOccurs="0">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="rightEndDistance" type="gml:LengthType" minOccurs="0">
        <xs:annotation>

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    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="FacilityAttribute" type="uro:FacilityAttributeType" abstract="true"/>
<xs:complexType name="FacilityAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:FacilityAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="FacilityAttributeType" abstract="true">
  <xs:sequence>
    <xs:element name="facilityId" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="PortAttribute" type="uro:PortAttributeType" abstract="true" substitutionGroup="uro:FacilityAttribut
e"/>
<xs:complexType name="PortAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:PortAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="PortAttributeType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:FacilityAttributeType">
      <xs:sequence>
        <xs:element name="portFacilityDetailsType" type="gml:CodeType">
          <xs:annotation>
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        </xs:element>
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          </xs:annotation>
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        <xs:element name="grantType" type="gml:CodeType" minOccurs="0"/>
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  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
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        <xs:element name="facilityWidth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="apronWidth" type="gml:LengthType" minOccurs="0"/>
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        <xs:element name="currentDepth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="ceilingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="gravityResistant" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="form" type="gml:CodeType" minOccurs="0"/>
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<xs:element name="outerSiteArea" type="gml:MeasureType" minOccurs="0"/>
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  </xs:sequence>
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  <xs:complexContent>
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        <xs:element name="outerSiteArea" type="gml:MeasureType" minOccurs="0"/>
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        <xs:element name="storageCapacityUnit" type="gml:CodeType" minOccurs="0"/>
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  <xs:complexContent>
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        <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="acquisitionYear" type="xs:gYear" minOccurs="0"/>
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    </xs:extension>
  </xs:complexContent>
</xs:complexType>
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      <xs:element name="mainPartLength" type="gml:LengthType" minOccurs="0"/>
      <xs:element name="innerShoreLength" type="gml:LengthType" minOccurs="0">
        <xs:annotation>
          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="ceilingHeight" type="gml:LengthType" minOccurs="0"/>
      <xs:element name="waveDissipatorLength" type="gml:LengthType" minOccurs="0"/>
      <xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
      <xs:element name="wasteType" type="gml:CodeType" minOccurs="0"/>
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      <xs:element name="shipType" type="xs:string" minOccurs="0"/>
      <xs:element name="unitOfReceivingCapacity" type="gml:CodeType" minOccurs="0"/>
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  </xs:sequence>
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        <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
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    <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
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    <xs:element name="totalCost" type="xs:integer" minOccurs="0"/>
    <xs:element name="subsidy" type="xs:integer" minOccurs="0"/>
    <xs:element name="note" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:extension>
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</xs:complexType>
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  </xs:sequence>
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  <xs:complexContent>
    <xs:extension base="uro:PortAttributeType">
      <xs:sequence>
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        <xs:element name="note" type="xs:string" minOccurs="0"/>
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    </xs:extension>
  </xs:complexContent>
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  </xs:sequence>
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<xs:complexType name="PortManagementFacilityType">
  <xs:complexContent>
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        <xs:element name="unitOfShipType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="loadingCapacity" type="xs:integer" minOccurs="0"/>
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</xs:complexType>
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  <xs:sequence>

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<xs:element name="totalLength" type="gml:LengthType" minOccurs="0"/>
<xs:element name="waveDissipatorLength" type="gml:LengthType" minOccurs="0"/>
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<xs:element name="restrictionStructure" type="xs:string" minOccurs="0"/>
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<xs:element name="outerSiteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="ceilingHeight" type="gml:LengthType" minOccurs="0"/>
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<xs:element name="mainVessels" type="gml:CodeType" minOccurs="0"/>
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<xs:element name="resistantMaterial" type="xs:integer" minOccurs="0"/>
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<xs:element name="stairs" type="xs:integer" minOccurs="0"/>
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</xs:extension>
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</xs:sequence>
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    <xs:element ref="uro:FishingPortFacility"/>
  </xs:sequence>
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  <xs:complexContent>
    <xs:extension base="uro:FishingPortAttributeType">
      <xs:sequence>
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        </xs:element>
        <xs:element name="portName" type="xs:string">
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        <xs:element name="referenceNumber" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="grantType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="administrator" type="xs:string" minOccurs="0"/>
        <xs:element name="facilityManager" type="xs:string" minOccurs="0"/>
        <xs:element name="structureType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="mainMaterial" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="otherStructure" type="xs:string" minOccurs="0"/>
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        <xs:element name="ceilingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="otherSizeDescription" type="xs:string" minOccurs="0"/>
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        <xs:element name="weightCapacity" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="hullForm" type="xs:integer" minOccurs="0"/>
        <xs:element name="shipNumber" type="xs:integer" minOccurs="0"/>
        <xs:element name="waterDepth-2m" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="waterDepth2-3m" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="waterDepth3-6m" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="waterDepth6-m" type="gml:MeasureType" minOccurs="0"/>
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        <xs:element name="luminousRange" type="gml:LengthType" minOccurs="0"/>
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        <xs:element name="handleablePower" type="xs:integer" minOccurs="0"/>
        <xs:element name="maximumWaterSupply" type="xs:integer" minOccurs="0"/>
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<!-- ===== 橋梁/トンネル/構造物諸元属性 ===== -->

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    <xs:element name="installerType" type="gml:CodeType" minOccurs="0"/>
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    <xs:element name="structureOrdinance" type="xs:string" minOccurs="0"/>
    <xs:element name="specification" type="xs:string" minOccurs="0"/>
  </xs:sequence>

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</xs:complexType>
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        <xs:documentation>第 3.2 版修正</xs:documentation>
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    </xs:element>
    <xs:element name="referenceDate" type="xs:date">
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    <xs:element name="width" type="gml:LengthType" minOccurs="0" />
    <xs:element name="area" type="gml:MeasureType" minOccurs="0" />
    <xs:element name="weightRestriction" type="gml:MeasureType" minOccurs="0" />
    <xs:element name="heightRestriction" type="gml:LengthType" minOccurs="0" />
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    <xs:element name="slopeType" type="gml:CodeType" minOccurs="0" />
    <xs:element name="escalator" type="xs:boolean" minOccurs="0" />
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</xs:complexType>

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</xs:sequence>
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<!-- ===== データ品質属性 ===== -->

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</xs:annotation>
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<xs:documentation>全ての都市オブジェクトに共通するデータ品質属性として定義</xs:documentation>
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<xs:element name="srcScale" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded">
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<xs:element name="appearanceSrcDescLod4" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
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  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
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</xs:element>
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  <xs:annotation>
    <xs:documentation>第 4.0 版</xs:documentation>
    <xs:documentation>道路基盤地図情報との整合性確保</xs:documentation>
  </xs:annotation>
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</xs:sequence>
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  <xs:documentation>第 4.0 版修正</xs:documentation>
  <xs:documentation>公共測量成果となる全ての都市オブジェクトに共通するデータ品質属性として定義</xs:docume
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</xs:annotation>
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  <xs:element name="srcScaleLod2" type="gml:CodeType" minOccurs="0" maxOccurs="1"/>
  <xs:element name="srcScaleLod3" type="gml:CodeType" minOccurs="0" maxOccurs="1"/>
  <xs:element name="srcScaleLod4" type="gml:CodeType" minOccurs="0" maxOccurs="1"/>
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  <xs:element name="publicSurveySrcDescLod2" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
  <xs:element name="publicSurveySrcDescLod3" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
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<!-- ===== -->
<!-- ===== 地物型の追加 ===== -->

```

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      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
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  </xs:sequence>
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    <xs:element name="plannedDepth" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="speedLimit" type="gml:MeasureType" minOccurs="0"/>
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  </xs:sequence>
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  <xs:complexContent>
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</xs:complexType>

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<xs:enumeration value="functional"/>
<xs:enumeration value="projected"/>
<xs:enumeration value="underConstruction"/>
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```

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    </xs:sequence>
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  <xs:complexContent>
    <xs:extension base="core:AbstractCityObjectType">
      <xs:sequence>
        <xs:element name="lod2MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
        <xs:element name="lod3MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
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<xs:complexType name="RoofSurfacePropertyType">
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  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
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  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
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    <xs:extension base="uro:_BoundarySurfaceType">
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</xs:complexType>
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  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
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```

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    <xs:sequence/>
  </xs:extension>
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<xs:element name="OuterCeilingSurface" type="uro:OuterCeilingSurfaceType" substitutionGroup="uro:_BoundarySurface" />
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  <xs:attributeGroup ref="gml:AssociationAttributeGroup" />
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  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup" />
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<xs:complexType name="OuterFloorSurfaceType">
  <xs:complexContent>
    <xs:extension base="uro:_BoundarySurfaceType">
      <xs:sequence/>
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  </xs:complexContent>
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  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup" />
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    <xs:extension base="uro:_BoundarySurfaceType">
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  </xs:complexContent>
</xs:complexType>
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  <xs:sequence minOccurs="0">
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  <xs:attributeGroup ref="gml:AssociationAttributeGroup" />
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</xs:sequence>
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</xs:annotation>
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</xs:sequence>
</xs:complexType>
<xs:complexType name="HeightType">
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</xs:annotation>
<xs:sequence>
<xs:element name="highReference" type="gml:CodeType"/>
<xs:element name="lowReference" type="gml:CodeType"/>
<xs:element name="status" type="uro:HeightStatusValue"/>
<xs:element name="value" type="gml:LengthType"/>
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<xs:enumeration value="measured"/>
</xs:restriction>
</xs:simpleType>
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<xs:element ref="uro:ConstructionEvent"/>
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    <xs:element name="description" type="xs:string" minOccurs="0"/>
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    <xs:element ref="uro:Occupancy"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="OccupancyType">
  <xs:sequence>
    <xs:annotation>
      <xs:documentation>第 3.2 版修正</xs:documentation>
    </xs:annotation>
    <xs:element name="interval" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="numberOfOccupants" type="xs:integer"/>
    <xs:element name="occupantType" type="gml:CodeType" minOccurs="0"/>
  </xs:sequence>
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<xs:element name="UndergroundBuilding" type="uro:UndergroundBuildingType" substitutionGroup="bldg:_AbstractBuilding"/>
<xs:complexType name="UndergroundBuildingPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:UndergroundBuilding"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
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<xs:complexType name="UndergroundBuildingType">
  <xs:complexContent>
    <xs:extension base="bldg:AbstractBuildingType">
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    </xs:extension>
  </xs:complexContent>
</xs:complexType>

<xs:element name="railwayRouteAttribute" type="uro:RailwayRouteAttributePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfRailway"/>
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  </xs:sequence>
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  <xs:sequence>
    <xs:element name="operatorType" type="gml:CodeType">
      <xs:annotation>
        <xs:documentation>第 3.2 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="operator" type="xs:string">
      <xs:annotation>
        <xs:documentation>第 3.2 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="alternativeName" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="railwayType" type="gml:CodeType">
      <xs:annotation>

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    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
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  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="endStation" type="xs:string">
  <xs:annotation>
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  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<!-- ===== 鉄道線形 ===== -->

<xs:element name="RailwayTrackAttribute" type="uro:RailwayTrackAttributeType"/>
<xs:complexType name="RailwayTrackAttributePropertyType">
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<xs:complexType name="RailwayTrackAttributeType">
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    <xs:element name="routeName" type="xs:string" minOccurs="0"/>
    <xs:element name="directionType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="trackType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="startPost" type="xs:string" minOccurs="0"/>
    <xs:element name="endPost" type="xs:string" minOccurs="0"/>
    <xs:element name="alignmentType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="lod2Network" type="gml:GeometricComplexPropertyType" minOccurs="0"/>
    <xs:element name="lod3Network" type="gml:GeometricComplexPropertyType" minOccurs="0"/>
    <xs:element name="controlPoint" type="uro:ControlPointPropertyType" minOccurs="0" maxOccurs="unbounded"/>
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<xs:element name="ControlPoint" type="uro:ControlPointType"/>
<xs:complexType name="ControlPointPropertyType">
  <xs:sequence>
    <xs:element ref="uro:ControlPoint"/>
  </xs:sequence>
</xs:complexType>
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    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
  <xs:sequence>
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    <xs:element name="endPost" type="xs:string" minOccurs="0"/>
    <xs:element name="function" type="gml:CodeType"/>
    <xs:element name="parameter" type="uro:ControlPointType"/>
    <xs:element name="startPoint" type="gml:PointPropertyType" minOccurs="0"/>
    <xs:element name="endPoint" type="gml:PointPropertyType" minOccurs="0"/>
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</xs:complexType>
<xs:element name="ControlPointType" type="uro:ControlPointTypeType"/>
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  <xs:sequence>
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  </xs:sequence>

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</xs:sequence>
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<xs:complexType name="ControlPointType">
  <xs:choice>
    <xs:element name="circularCurve" type="uro:CircularCurveTypePropertyType"/>
    <xs:element name="transitionCurve" type="uro:TransitionCurveTypePropertyType"/>
    <xs:element name="slopeType" type="uro:SlopeTypePropertyType"/>
    <xs:element name="verticalCurve" type="uro:VerticalCurveTypePropertyType"/>
  </xs:choice>
</xs:complexType>
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<xs:complexType name="CircularCurveTypePropertyType">
  <xs:sequence>
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  </xs:sequence>
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  </xs:annotation>
  <xs:sequence>
    <xs:element name="radius" type="gml:LengthType"/>
    <xs:element name="intersection" type="xs:double"/>
    <xs:element name="cutLength" type="gml:LengthType"/>
    <xs:element name="curveLength" type="gml:LengthType"/>
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  <xs:sequence>
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<xs:complexType name="VerticalCurveTypePropertyType">
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  </xs:sequence>
</xs:complexType>
<xs:complexType name="VerticalCurveTypeType">
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    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
  <xs:sequence>
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</xs:complexType>
<xs:element name="SlopeType" type="uro:SlopeTypeType"/>

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<xs:complexType name="SlopeTypePropertyType">
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    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="angle" type="xs:double"/>
    <xs:element name="elevation" type="gml:LengthType"/>
  </xs:sequence>
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  <xs:sequence>
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  </xs:sequence>
</xs:complexType>
<xs:complexType name="TrackAttributeType">
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    <xs:element name="alternativeName" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
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    <xs:element name="relativeLevel" type="xs:integer" minOccurs="0"/>
    <xs:element name="widthType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="structureType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="isTollRoad" type="xs:boolean" minOccurs="0"/>
    <xs:element name="separator" type="gml:LengthType" minOccurs="0"/>
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  <xs:sequence>
    <xs:element ref="uro:SquareUrbanPlanAttribute"/>
  </xs:sequence>
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<xs:complexType name="SquareUrbanPlanAttributeType">
  <xs:sequence>
    <xs:element name="prefecture" type="gml:CodeType" minOccurs="0"/>
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    <xs:element name="enforcer" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="dateOfDecision" type="xs:date" minOccurs="0"/>
    <xs:element name="dateOfRevision" type="xs:date" minOccurs="0" maxOccurs="unbounded">
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      </xs:annotation>
    </xs:element>
    <xs:element name="areaPlanned" type="gml:MeasureType" minOccurs="0"/>
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    <xs:element name="remarks" type="xs:string" minOccurs="0"/>
    <xs:element name="status" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="arealImproved" type="gml:MeasureType" minOccurs="0"/>
    <xs:element name="areaCompleted" type="gml:MeasureType" minOccurs="0"/>
    <xs:element name="projectStartDate" type="xs:date" minOccurs="0"/>
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</xs:complexType>

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<xs:element name="projectEndDate" type="xs:date" minOccurs="0"/>
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<xs:element name="railwayType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
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<!-- ===== -->
<!-- ===== 地下埋設物 ===== -->
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</xs:annotation>

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        </xs:annotation>
      </xs:element>
      <xs:element name="year" type="xs:gYear" minOccurs="0"/>
      <xs:element name="yearType" type="gml:CodeType" minOccurs="0"/>
      <xs:element name="administrator" type="gml:CodeType" minOccurs="0"/>
      <xs:element name="offsetDepth" type="uro:OffsetDepthPropertyType" minOccurs="0" maxOccurs="unbounded">
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          <xs:documentation>第 3.2 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
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d">
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    </xs:sequence>
  </xs:extension>
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</xs:complexType>
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nt"/>
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  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
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<xs:complexType name="UtilityLinkType" abstract="true">
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          </xs:annotation>
        </xs:element>
        <xs:element name="startNode" type="xs:string" minOccurs="0"/>
        <xs:element name="routeEndNode" type="xs:string" minOccurs="0">
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            <xs:documentation>第 3.2 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="endNode" type="xs:string" minOccurs="0"/>
        <xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="minDepth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="maxDepth" type="gml:LengthType" minOccurs="0">
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            <xs:documentation>第 3.2 版修正</xs:documentation>
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        <xs:element name="maxWidth" type="gml:LengthType" minOccurs="0">
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    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
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<xs:element name="material" type="gml:CodeType" minOccurs="0"/>
<xs:element name="lengthAttribute" type="uro:LengthAttributePropertyType" minOccurs="0" maxOccurs="unbounde
d">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
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<xs:complexType name="ThematicShapePropertyType">
  <xs:sequence>
    <xs:element ref="uro:ThematicShape"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ThematicShapeType">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="horizontalType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="heightType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="shape" type="gml:GeometryPropertyType"/>
  </xs:sequence>
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  </xs:sequence>
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    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="measureType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="phaseType" type="gml:CodeType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="UtilityNode" type="uro:UtilityNodeType" abstract="true" substitutionGroup="uro:UtilityNetworkElem
ent"/>
<xs:complexType name="UtilityNodePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:UtilityNode"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="UtilityNodeType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:UtilityNetworkElementType">
      <xs:sequence>

```

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<xs:element name="previousLink" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="nextLink" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="rotationAngle" type="xs:double" minOccurs="0">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="Appurtenance" type="uro:AppurtenanceType" substitutionGroup="uro:UtilityNode">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="AppurtenancePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:Appurtenance"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="AppurtenanceType">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="uro:UtilityNodeType">
      <xs:sequence>
        <xs:element name="appurtenanceType" type="gml:CodeType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="UtilityNodeContainer" type="uro:UtilityNodeContainerType" abstract="true" substitutionGroup="uro:UtilityNetworkElement">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UtilityNodeContainerPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:UtilityNodeContainer"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="UtilityNodeContainerType" abstract="true">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="uro:UtilityNetworkElementType">
      <xs:sequence>
        <xs:element name="containerType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="innerDiameterLong" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="outerDiameterLong" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="innerDiameterShort" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="outerDiameterShort" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="appurtenance" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>

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    <xs:element name="rotationAngle" type="xs:double" minOccurs="0"/>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="Manhole" type="uro:ManholeType" substitutionGroup="uro:UtilityNodeContainer"/>
<xs:complexType name="ManholePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:Manhole"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="ManholeType">
  <xs:complexContent>
    <xs:extension base="uro:UtilityNodeContainerType">
      <xs:sequence>
        <xs:element name="elevation" type="gml:LengthType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 3.5 版追加</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Handhole" type="uro:HandholeType" substitutionGroup="uro:UtilityNodeContainer"/>
<xs:complexType name="HandholePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:Handhole"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="HandholeType">
  <xs:complexContent>
    <xs:extension base="uro:UtilityNodeContainerType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Pipe" type="uro:PipeType" substitutionGroup="uro:UtilityLink"/>
<xs:complexType name="PipePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:Pipe"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="PipeType">
  <xs:complexContent>
    <xs:extension base="uro:UtilityLinkType">
      <xs:sequence>
        <xs:element name="innerDiameter" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="outerDiameter" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="sleeveType" type="gml:CodeType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="SewerPipe" type="uro:SewerPipeType" substitutionGroup="uro:Pipe"/>
<xs:complexType name="SewerPipePropertyType">

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```

<xs:sequence minOccurs="0">
  <xs:element ref="uro:SewerPipe"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="SewerPipeType">
  <xs:complexContent>
    <xs:extension base="uro:PipeType">
      <xs:sequence>
        <xs:element name="slope" type="gml:MeasureType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 3.2 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="invertElevationUpstream" type="gml:LengthType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版追加</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="invertElevationDownstream" type="gml:LengthType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版追加</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="flowDirection" type="xs:boolean" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版追加</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="ThermalPipe" type="uro:ThermalPipeType" substitutionGroup="uro:Pipe"/>
<xs:complexType name="ThermalPipePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:ThermalPipe"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="ThermalPipeType">
  <xs:complexContent>
    <xs:extension base="uro:PipeType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="WaterPipe" type="uro:WaterPipeType" substitutionGroup="uro:Pipe"/>
<xs:complexType name="WaterPipePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:WaterPipe"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="WaterPipeType">
  <xs:complexContent>
    <xs:extension base="uro:PipeType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```



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</xs:complexType>
<xs:element name="OilGasChemicalsPipe" type="uro:OilGasChemicalsPipeType" substitutionGroup="uro:Pipe"/>
<xs:complexType name="OilGasChemicalsPipePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:OilGasChemicalsPipe"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="OilGasChemicalsPipeType">
  <xs:complexContent>
    <xs:extension base="uro:PipeType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Duct" type="uro:DuctType" substitutionGroup="uro:UtilityLink"/>
<xs:complexType name="DuctPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:Duct"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="DuctType">
  <xs:complexContent>
    <xs:extension base="uro:UtilityLinkType">
      <xs:sequence>
        <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Cable" type="uro:CableType" substitutionGroup="uro:UtilityLink"/>
<xs:complexType name="CablePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:Cable"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="CableType">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="uro:UtilityLinkType">
      <xs:sequence>
        <xs:element name="columns" type="xs:integer" minOccurs="0"/>
        <xs:element name="rows" type="xs:integer" minOccurs="0"/>
        <xs:element name="cables" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="ElectricityCable" type="uro:ElectricityCableType" substitutionGroup="uro:Cable"/>
<xs:complexType name="ElectricityCablePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:ElectricityCable"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

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<xs:complexType name="ElectricityCableType">
  <xs:complexContent>
    <xs:extension base="uro:CableType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="TelecommunicationsCable" type="uro:TelecommunicationsCableType" substitutionGroup="uro:Cabl
e"/>
<xs:complexType name="TelecommunicationsCablePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:TelecommunicationsCable"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="TelecommunicationsCableType">
  <xs:complexContent>
    <xs:extension base="uro:CableType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="OffsetDepth" type="uro:OffsetDepthType"/>
<xs:complexType name="OffsetDepthPropertyType">
  <xs:sequence>
    <xs:element ref="uro:OffsetDepth"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="OffsetDepthType">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
  <xs:sequence>
    <xs:element name="pos" type="gml:DirectPositionType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>第 3.2 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="offset" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="minDepth" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="maxDepth" type="gml:LengthType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<!-- === Utility Network End=== -->
<xs:element name="MaintenanceHistoryAttribute" type="uro:MaintenanceHistoryAttributeType" substitutionGroup="uro:
FacilityAttribute"/>
<xs:complexType name="MaintenanceHistoryAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:MaintenanceHistoryAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="MaintenanceHistoryAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FacilityAttributeType">
      <xs:sequence>
        <xs:element name="maintenanceType" type="gml:CodeType">
          <xs:annotation>
            <xs:documentation>第 3.2 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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```

</xs:element>
<xs:element name="maintenanceFiscalYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="maintenanceYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="maintenanceDate" type="xs:date" minOccurs="0"/>
<xs:element name="status" type="xs:string" minOccurs="0"/>
<xs:element name="description" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<!-- ===== LOD4 =====>
<!-- ===== Extended attribute for ifc ===== -->
<xs:element name="ifcBuildingAttribute" type="uro:IfcAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="ifcBuildingStoreyAttribute" type="uro:IfcAttributePropertyType" substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>
<xs:element name="ifcLandUseAttribute" type="uro:IfcAttributePropertyType" substitutionGroup="luse:_GenericApplicationPropertyOfLandUse"/>
<xs:element name="ifcRoomAttribute" type="uro:IfcAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfRoom"/>
<xs:element name="ifcOpeningAttribute" type="uro:IfcAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfOpening"/>
<xs:element name="ifcBoundarySurfaceAttribute" type="uro:IfcAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfBoundarySurface"/>
<xs:element name="ifcBuildingInstallationAttribute" type="uro:IfcAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfBuildingInstallation"/>
<xs:element name="ifcIntBuildingInstallationAttribute" type="uro:IfcAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfIntBuildingInstallation"/>
<xs:element name="ifcBuildingFurnitureAttribute" type="uro:IfcAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfBuildingFurniture"/>
<!-- ===== Ifc のエンティティやプロパティセットに対応するデータ型を作成し、Building 等の属性にする ===== -->
<xs:element name="IfcAttribute" type="uro:IfcAttributeType" abstract="true"/>
<xs:complexType name="IfcAttributeType" abstract="true">
<xs:sequence/>
</xs:complexType>
<xs:complexType name="IfcAttributePropertyType">
<xs:sequence>
<xs:element ref="uro:IfcAttribute"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcRoot" type="uro:IfcRootType" abstract="true" substitutionGroup="uro:IfcAttribute">
<xs:annotation>
<xs:documentation>IfcRoot に対応</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="IfcRootType" abstract="true">
<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>
<xs:element name="globalId" type="xs:string" minOccurs="0"/>
<xs:element name="name" type="xs:string" minOccurs="0"/>
<xs:element name="description" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcRootPropertyType">

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```

<xs:sequence>
  <xs:element ref="uro:IfcRoot"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcObjectDefinition" type="uro:IfcObjectDefinitionType" abstract="true" substitutionGroup="uro:IfcRoot">
  <xs:annotation>
    <xs:documentation>IfcObjectDefinition に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcObjectDefinitionType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:IfcRootType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcObjectDefinitionPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcObjectDefinition"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcObject" type="uro:IfcObjectType" abstract="true" substitutionGroup="uro:IfcObjectDefinition">
  <xs:annotation>
    <xs:documentation>IfcObject に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcObjectType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:IfcObjectDefinitionType">
      <xs:sequence>
        <xs:element name="objectType" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcObjectPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcObject"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcProduct" type="uro:IfcProductType" abstract="true" substitutionGroup="uro:IfcObject">
  <xs:annotation>
    <xs:documentation>IfcProduct に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcProductType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:IfcObjectType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcProductPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcProduct"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcSpatialStructureElement" type="uro:IfcSpatialStructureElementType" abstract="true" substitutionGroup="uro:IfcProduct">

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```

<xs:annotation>
  <xs:documentation>IfcSpatialStructureElement に対応</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="IfcSpatialStructureElementType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:IfcProductType">
      <xs:sequence>
        <xs:element name="longName" type="xs:string" minOccurs="0"/>
        <xs:element name="compositionType" type="uro:IfcElementCompositionEnum" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcSpatialStructureElementPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcSpatialStructureElement"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcBuilding" type="uro:IfcBuildingType" substitutionGroup="uro:IfcSpatialStructureElement">
  <xs:annotation>
    <xs:documentation>IfcBuilding に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcBuildingType">
  <xs:complexContent>
    <xs:extension base="uro:IfcSpatialStructureElementType">
      <xs:sequence>
        <xs:element name="elevationOfRefHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="elevationOfTerrain" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="buildingAddress" type="core:AddressPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcBuildingPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcBuilding"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcPsetBuildingCommon" type="uro:IfcPsetBuildingCommonType" substitutionGroup="uro:IfcAttribute">
  <xs:annotation>
    <xs:documentation>IfcPsetBuildingCommon に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcPsetBuildingCommonType">
  <xs:complexContent>
    <xs:extension base="uro:IfcAttributeType">
      <xs:sequence>
        <xs:element name="buildingId" type="xs:string" minOccurs="0"/>
        <xs:element name="isPermanentId" type="xs:boolean" minOccurs="0"/>
        <xs:element name="mainFireUse" type="xs:string" minOccurs="0"/>
        <xs:element name="ancillaryFireUse" type="xs:string" minOccurs="0"/>
        <xs:element name="sprinklerProtection" type="xs:boolean" minOccurs="0"/>
        <xs:element name="sprinklerProtectionAutomatic" type="xs:boolean" minOccurs="0"/>
        <xs:element name="occupancyType" type="gml:CodeType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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<xs:element name="grossPlannedArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="numberOfStoreys" type="xs:integer" minOccurs="0"/>
<xs:element name="yearOfConstruction" type="xs:gYear" minOccurs="0"/>
<xs:element name="isLandmarked" type="xs:boolean" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcPsetBuildingCommonPropertyType">
<xs:sequence>
<xs:element ref="uro:IfcPsetBuildingCommon"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcSite" type="uro:IfcSiteType" substitutionGroup="uro:IfcSpatialStructureElement">
<xs:annotation>
<xs:documentation>IfcSite に対応</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="IfcSiteType">
<xs:complexContent>
<xs:extension base="uro:IfcSpatialStructureElementType">
<xs:sequence>
<xs:element name="refLongitude" type="xs:double" minOccurs="0"/>
<xs:element name="refLatitude" type="xs:double" minOccurs="0"/>
<xs:element name="refElevation" type="gml:LengthType" minOccurs="0"/>
<xs:element name="landTitleNumber" type="xs:string" minOccurs="0"/>
<xs:element name="siteAddress" type="core:AddressPropertyType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcSitePropertyType">
<xs:sequence>
<xs:element ref="uro:IfcSite"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcPsetSiteCommon" type="uro:IfcPsetSiteCommonType" substitutionGroup="uro:IfcAttribute">
<xs:annotation>
<xs:documentation>IfcPsetSiteCommon に対応</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="IfcPsetSiteCommonType">
<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>
<xs:element name="buildableArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="totalArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="buildingHeightLimit" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcPsetSiteCommonPropertyType">
<xs:sequence>
<xs:element ref="uro:IfcPsetSiteCommon"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->

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```

<xs:element name="IfcProject" type="uro:IfcProjectType" substitutionGroup="uro:IfcObjectType">
  <xs:annotation>
    <xs:documentation>IfcProject に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcProjectType">
  <xs:complexContent>
    <xs:extension base="uro:IfcObjectType">
      <xs:sequence>
        <xs:element name="longName" type="xs:string" minOccurs="0"/>
        <xs:element name="phase" type="xs:string" minOccurs="0"/>
        <xs:element name="representationContexts" type="uro:IfcGeometricRepresentationContextPropertyType" minOccurs="0"/>
        <xs:element name="unitsInContext" type="uro:IfcUnitPropertyType" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcProjectPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcProject"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="IfcGeometricRepresentationContext" type="uro:IfcGeometricRepresentationContextType">
  <xs:annotation>
    <xs:documentation>IfcGeometricRepresentationContext に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<!-- ===== -->
<xs:complexType name="IfcGeometricRepresentationContextType">
  <xs:sequence>
    <xs:element name="contextIdentifier" type="xs:string" minOccurs="0"/>
    <xs:element name="contextType" type="xs:string" minOccurs="0"/>
    <xs:element name="coordinateSpaceDimension" type="xs:integer" minOccurs="0"/>
    <xs:element name="precision" type="xs:double" minOccurs="0"/>
    <xs:element name="worldCoordinateSystem" type="uro:IfcAxis2Placement3DPropertyType"/>
    <xs:element name="trueNorth" type="gml:doubleList" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="IfcGeometricRepresentationContextPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcGeometricRepresentationContext"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="IfcUnit" type="uro:IfcUnitType">
  <xs:annotation>
    <xs:documentation>IfcUnit に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcUnitType">
  <xs:sequence>
    <xs:element name="dimensions" type="xs:integer" minOccurs="0"/>
    <xs:element name="unitType" type="uro:IfcUnitEnum" minOccurs="0"/>
    <xs:element name="perfix" type="xs:string" minOccurs="0"/>
    <xs:element name="name" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="IfcUnitPropertyType">
  <xs:sequence>

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<xs:element ref="uro:IfcUnit"/>
</xs:sequence>
</xs:complexType>
<xs:element name="IfcAxis2Placement3D" type="uro:IfcAxis2Placement3DType">
  <xs:annotation>
    <xs:documentation>IfcAxis2Placement3D に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcAxis2Placement3DType">
  <xs:sequence>
    <xs:element name="location" type="gml:PointPropertyType" minOccurs="0"/>
    <xs:element name="axis" type="gml:doubleList" minOccurs="0"/>
    <xs:element name="refDirection" type="gml:doubleList" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="IfcAxis2Placement3DPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcAxis2Placement3D"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcCoordinateReferenceSystem" type="uro:IfcCoordinateReferenceSystemType" substitutionGroup="
uro:IfcAttribute">
  <xs:annotation>
    <xs:documentation>IfcCoordinateReferenceSystem に対応 (IFC4 から導入) </xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcCoordinateReferenceSystemType">
  <xs:complexContent>
    <xs:extension base="uro:IfcAttributeType">
      <xs:sequence>
        <xs:element name="name" type="xs:string" minOccurs="0"/>
        <xs:element name="description" type="xs:string" minOccurs="0"/>
        <xs:element name="geodeticDatum" type="xs:string" minOccurs="0"/>
        <xs:element name="verticalDatum" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcCoordinateReferenceSystemPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcCoordinateReferenceSystem"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcProjectedCRS" type="uro:IfcProjectedCRSType" substitutionGroup="uro:IfcCoordinateReferenceS
ystem">
  <xs:annotation>
    <xs:documentation>IfcProjectedCRS に対応 (IFC4 から導入) </xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcProjectedCRSType">
  <xs:complexContent>
    <xs:extension base="uro:IfcCoordinateReferenceSystemType">
      <xs:sequence>
        <xs:element name="mapUnit" type="xs:string" minOccurs="0"/>
        <xs:element name="mapProjection" type="xs:string" minOccurs="0"/>
        <xs:element name="mapZone" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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</xs:complexContent>
</xs:complexType>
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  <xs:sequence>
    <xs:element ref="uro:IfcProjectedCRS"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="IfcMapConversion" type="uro:IfcMapConversionType" substitutionGroup="uro:IfcAttribute">
  <xs:annotation>
    <xs:documentation>IfcCoordinateReferenceSystem に対応 (IFC4 から導入) </xs:documentation>
  </xs:annotation>
</xs:element>
<!-- ===== -->
<xs:complexType name="IfcMapConversionType">
  <xs:complexContent>
    <xs:extension base="uro:IfcAttributeType">
      <xs:sequence>
        <xs:element name="sourceCRS" type="uro:IfcCoordinateReferenceSystemSelectType" minOccurs="0"/>
        <xs:element name="targetCRS" type="uro:IfcCoordinateReferenceSystemPropertyType" minOccurs="0"/>
        <xs:element name="eastings" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="northings" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="orthogonalHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="xAxisAbscissa" type="xs:double" minOccurs="0"/>
        <xs:element name="xAxisOrdinate" type="xs:double" minOccurs="0"/>
        <xs:element name="scale" type="xs:double" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcMapConversionPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcMapConversion"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="IfcCoordinateReferenceSystemSelectType">
  <xs:choice>
    <xs:element name="crs" type="uro:IfcCoordinateReferenceSystemPropertyType"/>
    <xs:element name="context" type="uro:IfcGeometricRepresentationContextPropertyType"/>
  </xs:choice>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcSpace" type="uro:IfcSpaceType" substitutionGroup="uro:IfcSpatialStructureElement">
  <xs:annotation>
    <xs:documentation>IfcSpace に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcSpaceType">
  <xs:complexContent>
    <xs:extension base="uro:IfcSpatialStructureElementType">
      <xs:sequence>
        <xs:element name="interiorOrExteriorSpace" type="uro:IfcInternalOrExternalEnum" minOccurs="0"/>
        <xs:element name="elevationWithFlooring" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcSpacePropertyType">
  <xs:sequence>

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<xs:element ref="uro:IfcSpace"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcClassificationReference" type="uro:IfcClassificationReferenceType" substitutionGroup="uro:IfcAttribute">
  <xs:annotation>
    <xs:documentation>IfcClassificationReference に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcClassificationReferenceType">
  <xs:complexContent>
    <xs:extension base="uro:IfcAttributeType">
      <xs:sequence>
        <xs:element name="location" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="itemReference" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="name" type="xs:string" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 3.2 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="referenceSource" type="uro:IfcClassificationPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcClassificationReferencePropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcClassificationReference"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcClassification" type="uro:IfcClassificationType">
  <xs:annotation>
    <xs:documentation>IfcClassification に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcClassificationType">
  <xs:sequence>
    <xs:element name="source" type="xs:string" minOccurs="0"/>
    <xs:element name="edition" type="xs:string" minOccurs="0"/>
    <xs:element name="editionDate" type="xs:date" minOccurs="0"/>
    <xs:element name="name" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="IfcClassificationPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcClassification"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcPsetSpaceCommon" type="uro:IfcPsetSpaceCommonType" substitutionGroup="uro:IfcAttribute">
  <xs:annotation>
    <xs:documentation>IfcPsetSpaceCommon に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcPsetSpaceCommonType">
  <xs:complexContent>
    <xs:extension base="uro:IfcAttributeType">
      <xs:sequence>

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<xs:element name="category" type="xs:string" minOccurs="0"/>
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<xs:element name="wallCovering" type="xs:string" minOccurs="0"/>
<xs:element name="ceilingCovering" type="xs:string" minOccurs="0"/>
<xs:element name="skirtingBoard" type="xs:string" minOccurs="0"/>
<xs:element name="grossPlannedArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netPlannedArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="publiclyAccessible" type="xs:boolean" minOccurs="0"/>
<xs:element name="handicapAccessible" type="xs:boolean" minOccurs="0"/>
<xs:element name="concealedFlooring" type="xs:boolean" minOccurs="0"/>
<xs:element name="concealedCeiling" type="xs:boolean" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcPsetSpaceCommonPropertyType">
<xs:sequence>
<xs:element ref="uro:IfcPsetSpaceCommon"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcSpaceBaseQuantity" type="uro:IfcSpaceBaseQuantityType" substitutionGroup="uro:IfcAttribute">
<xs:annotation>
<xs:documentation>IfcSpaceBaseQuantity に対応</xs:documentation>
</xs:annotation>
</xs:element>
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<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>
<xs:element name="nominalHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="clearHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="finishCeilingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="grossPerimeter" type="gml:LengthType" minOccurs="0"/>
<xs:element name="netPerimeter" type="gml:LengthType" minOccurs="0"/>
<xs:element name="grossCeilingArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netCeilingArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossWallArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netWallArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossVolume" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netVolume" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcSpaceBaseQuantityPropertyType">
<xs:sequence>
<xs:element ref="uro:IfcSpaceBaseQuantity"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcElement" type="uro:IfcElementType" abstract="true" substitutionGroup="uro:IfcProduct">
<xs:annotation>
<xs:documentation>IfcElement に対応</xs:documentation>
</xs:annotation>
</xs:element>

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<xs:complexType name="IfcElementType" abstract="true">
  <xs:complexContent>
    <xs:extension base="uro:IfcProductType">
      <xs:sequence>
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      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcElementPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcElement"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcBuildingElement" type="uro:IfcBuildingElementType" substitutionGroup="uro:IfcElement">
  <xs:annotation>
    <xs:documentation>IfcBuildingElement に対応</xs:documentation>
    <xs:documentation>IfcSlab 等、 IfcBuildingElement の下位クラスを表現するために使用する</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcBuildingElementType">
  <xs:complexContent>
    <xs:extension base="uro:IfcElementType">
      <xs:sequence>
        <xs:element name="elementType" type="gml:CodeType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>この属性で、 IfcBuildingElement の下位型のいずれであるかを特定する。</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="predefinedType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="shapeType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="numberOfRiser" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfTreads" type="xs:integer" minOccurs="0"/>
        <xs:element name="riserHeight" type="gml:LengthType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 3.2 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="treadLength" type="gml:LengthType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 3.2 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="operationType" type="uro:IfcTransportElementTypeEnum" minOccurs="0"/>
        <xs:element name="capacityByWeight" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="capacityByNumber" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcBuildingElementPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcBuildingElement"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcWall" type="uro:IfcWallType" substitutionGroup="uro:IfcBuildingElement">
  <xs:annotation>
    <xs:documentation>IfcWall に対応</xs:documentation>
  </xs:annotation>

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</xs:annotation>
</xs:element>
<xs:complexType name="IfcWallType">
<xs:complexContent>
<xs:extension base="uro:IfcBuildingElementType">
<xs:sequence>
<xs:element name="nominalLength" type="gml:LengthType" minOccurs="0"/>
<xs:element name="nominalWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="nominalHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="grossFootPrintArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netFootPrintArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossSideArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netSideArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossSideAreaLeft" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netSideAreaLeft" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossSideAreaRight" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netSideAreaRight" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="grossVolume" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="netVolume" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcWallPropertyType">
<xs:sequence>
<xs:element ref="uro:IfcWall"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcWallStandardCase" type="uro:IfcWallStandardCaseType" substitutionGroup="uro:IfcWall">
<xs:annotation>
<xs:documentation>IfcWallStandardCase に対応</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="IfcWallStandardCaseType">
<xs:complexContent>
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</xs:complexType>
<xs:complexType name="IfcWallStandardCasePropertyType">
<xs:sequence>
<xs:element ref="uro:IfcWallStandardCase"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcCurtainWall" type="uro:IfcCurtainWallType" substitutionGroup="uro:IfcBuildingElement">
<xs:annotation>
<xs:documentation>IfcWall に対応</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="IfcCurtainWallType">
<xs:complexContent>
<xs:extension base="uro:IfcBuildingElementType"/>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcCurtainWallPropertyType">
<xs:sequence>
<xs:element ref="uro:IfcCurtainWall"/>
</xs:sequence>

```

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</xs:complexType>
<!-- ===== -->
<xs:element name="IfcRoof" type="uro:IfcRoofType" substitutionGroup="uro:IfcBuildingElement">
  <xs:annotation>
    <xs:documentation>IfcRoof に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcRoofType">
  <xs:complexContent>
    <xs:extension base="uro:IfcBuildingElementType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcRoofPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcRoof"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcWindow" type="uro:IfcWindowType" substitutionGroup="uro:IfcBuildingElement">
  <xs:annotation>
    <xs:documentation>IfcWindow に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcWindowType">
  <xs:complexContent>
    <xs:extension base="uro:IfcBuildingElementType">
      <xs:sequence>
        <xs:element name="overallHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="overallWidth" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcWindowPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcWindow"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcDoor" type="uro:IfcDoorType" substitutionGroup="uro:IfcBuildingElement">
  <xs:annotation>
    <xs:documentation>IfcDoor に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcDoorType">
  <xs:complexContent>
    <xs:extension base="uro:IfcBuildingElementType">
      <xs:sequence>
        <xs:element name="overallHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="overallWidth" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcDoorPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcDoor"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->

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<xs:element name="IfcOpeningElement" type="uro:IfcOpeningElementType" substitutionGroup="uro:IfcElement">
  <xs:annotation>
    <xs:documentation>IfcOpeningElement に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcOpeningElementType">
  <xs:complexContent>
    <xs:extension base="uro:IfcElementType">
      <xs:sequence>
        <xs:element name="nominalArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="nominalVolume" type="gml:MeasureType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcOpeningElementPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcOpeningElement"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcPsetWindowCommon" type="uro:IfcPsetWindowCommonType" substitutionGroup="uro:IfcAttribute">
  <xs:annotation>
    <xs:documentation>IfcPsetWindowCommon に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcPsetWindowCommonType">
  <xs:complexContent>
    <xs:extension base="uro:IfcAttributeType">
      <xs:sequence>
        <xs:element name="reference" type="xs:string" minOccurs="0"/>
        <xs:element name="acousticRating" type="xs:string" minOccurs="0"/>
        <xs:element name="fireRating" type="xs:string" minOccurs="0"/>
        <xs:element name="securityRating" type="xs:string" minOccurs="0"/>
        <xs:element name="isExternal" type="xs:boolean" minOccurs="0"/>
        <xs:element name="infiltration" type="xs:double" minOccurs="0"/>
        <xs:element name="thermalTransmittance" type="xs:double" minOccurs="0"/>
        <xs:element name="glazingAreaFraction" type="xs:double" minOccurs="0"/>
        <xs:element name="smokeStop" type="xs:boolean" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcPsetWindowCommonPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcPsetWindowCommon"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcPsetDoorCommon" type="uro:IfcPsetDoorCommonType" substitutionGroup="uro:IfcAttribute">
  <xs:annotation>
    <xs:documentation>IfcPsetDoorCommon に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcPsetDoorCommonType">
  <xs:complexContent>
    <xs:extension base="uro:IfcAttributeType">
      <xs:sequence>

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<xs:element name="reference" type="xs:string" minOccurs="0"/>
<xs:element name="acousticRating" type="xs:string" minOccurs="0"/>
<xs:element name="firerating" type="xs:string" minOccurs="0"/>
<xs:element name="securityRating" type="xs:string" minOccurs="0"/>
<xs:element name="isExternal" type="xs:boolean" minOccurs="0"/>
<xs:element name="infiltration" type="xs:double" minOccurs="0"/>
<xs:element name="thermalTransmittance" type="xs:double" minOccurs="0"/>
<xs:element name="glazingAreaFraction" type="xs:double" minOccurs="0"/>
<xs:element name="handicapAccessible" type="xs:boolean" minOccurs="0"/>
<xs:element name="fireExit" type="xs:boolean" minOccurs="0"/>
<xs:element name="selfClosing" type="xs:boolean" minOccurs="0"/>
<xs:element name="smokeStop" type="xs:boolean" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcPsetDoorCommonPropertyType">
<xs:sequence>
<xs:element ref="uro:IfcPsetDoorCommon"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcPsetOpeningElementCommon" type="uro:IfcPsetOpeningElementCommonType" substitutionGroup
="uro:IfcAttribute">
<xs:annotation>
<xs:documentation>IfcPsetOpeningElementCommon に対応</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="IfcPsetOpeningElementCommonType">
<xs:complexContent>
<xs:extension base="uro:IfcAttributeType">
<xs:sequence>
<xs:element name="reference" type="xs:string" minOccurs="0"/>
<xs:element name="purpose" type="xs:string" minOccurs="0"/>
<xs:element name="fireExit" type="xs:boolean" minOccurs="0"/>
<xs:element name="protectedOpening" type="xs:boolean" minOccurs="0"/>
<xs:element name="parallelJamb" type="xs:boolean" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcPsetOpeningElementCommonPropertyType">
<xs:sequence>
<xs:element ref="uro:IfcPsetOpeningElementCommon"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcFurnishingElement" type="uro:IfcFurnishingElementType" substitutionGroup="uro:IfcElement">
<xs:annotation>
<xs:documentation>IfcFurnishingElement に対応</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="IfcFurnishingElementType">
<xs:complexContent>
<xs:extension base="uro:IfcElementType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcFurnishingElementPropertyType">

```



```

<xs:sequence>
  <xs:element ref="uro:IfcFurnishingElement"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="IfcBuildingStorey" type="uro:IfcBuildingStoreyType" substitutionGroup="uro:IfcSpatialStructureElement">
  <xs:annotation>
    <xs:documentation>IfcBuildingStorey に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcBuildingStoreyType">
  <xs:complexContent>
    <xs:extension base="uro:IfcSpatialStructureElementType">
      <xs:sequence>
        <xs:element name="elevation" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcBuildingStoreyPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcBuildingStorey"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="IfcGroup" type="uro:IfcGroupType" substitutionGroup="uro:IfcObject">
  <xs:annotation>
    <xs:documentation>IfcGroup に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcGroupType">
  <xs:complexContent>
    <xs:extension base="uro:IfcObjectType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcGroupPropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcGroup"/>
  </xs:sequence>
</xs:complexType>
<!-- IfcZone を追加 -->
<xs:element name="IfcZone" type="uro:IfcZoneType" substitutionGroup="uro:IfcGroup">
  <xs:annotation>
    <xs:documentation>IfcZone に対応</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IfcZoneType">
  <xs:complexContent>
    <xs:extension base="uro:IfcGroupType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IfcZonePropertyType">
  <xs:sequence>
    <xs:element ref="uro:IfcZone"/>
  </xs:sequence>

```

```

</xs:complexType>
<!-- 3次元屋内地理空間情報データ仕様書（案）に定義されたデータ型 -->
<xs:element name="indoorBuildingAttribute" type="uro:IndoorAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfAbstractBuilding"/>
<xs:element name="indoorBoundarySurfaceAttribute" type="uro:IndoorAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfBoundarySurface"/>
<xs:element name="indoorIntInstallationAttribute" type="uro:IndoorAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfIntBuildingInstallation"/>
<xs:element name="indoorOpeningAttribute" type="uro:IndoorAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfOpening"/>
<xs:element name="indoorFurnitureAttribute" type="uro:IndoorAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfBuildingFurniture"/>
<xs:element name="indoorRoomAttribute" type="uro:IndoorAttributePropertyType" substitutionGroup="bldg:_GenericApplicationPropertyOfRoom"/>
<xs:element name="indoorStoreyAttribute" type="uro:IndoorAttributePropertyType" substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>
<xs:element name="IndoorAttribute" type="uro:IndoorAttributeType" abstract="true"/>
<xs:complexType name="IndoorAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:IndoorAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="IndoorAttributeType" abstract="true">
  <xs:sequence>
    <xs:element name="source" type="gml:CodeType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>第 3.2 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:element name="IndoorFurnishingAttribute" type="uro:IndoorFurnishingAttributeType" substitutionGroup="uro:IndoorAttribute"/>
<xs:complexType name="IndoorFurnishingAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:IndoorFurnishingAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="IndoorFurnishingAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="floorId" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="IndoorZoneAttribute" type="uro:IndoorZoneAttributeType" substitutionGroup="uro:IndoorAttribute"/>
<xs:complexType name="IndoorZoneAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:IndoorZoneAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="IndoorZoneAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="floorId" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="IndoorPublicTagAttribute" type="uro:IndoorPublicTagAttributeType" substitutionGroup="uro:Indoor
Attribute"/>
<xs:complexType name="IndoorPublicTagAttributePropertyType">
<xs:sequence>
<xs:element ref="uro:IndoorPublicTagAttribute"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="IndoorPublicTagAttributeType">
<xs:complexContent>
<xs:extension base="uro:IndoorAttributeType">
<xs:sequence>
<xs:element name="ucode" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="IndoorSpaceAttribute" type="uro:IndoorSpaceAttributeType" substitutionGroup="uro:IndoorAttribut
e"/>
<xs:complexType name="IndoorSpaceAttributePropertyType">
<xs:sequence>
<xs:element ref="uro:IndoorSpaceAttribute"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="IndoorSpaceAttributeType">
<xs:complexContent>
<xs:extension base="uro:IndoorAttributeType">
<xs:sequence>
<xs:element name="floorId" type="xs:string" minOccurs="0"/>
<xs:element name="isRestricted" type="xs:boolean" minOccurs="0"/>
<xs:element name="suite" type="xs:string" minOccurs="0"/>
<xs:element name="isPublic" type="xs:boolean" minOccurs="0"/>
<xs:element name="tollType" type="gml:CodeType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="IndoorFacilityAttribute" type="uro:IndoorFacilityAttributeType" substitutionGroup="uro:IndoorAttrib
ute"/>
<xs:complexType name="IndoorFacilityAttributePropertyType">
<xs:sequence>
<xs:element ref="uro:IndoorFacilityAttribute"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="IndoorFacilityAttributeType">
<xs:complexContent>
<xs:extension base="uro:IndoorAttributeType">
<xs:sequence>
<xs:element name="weekdayHours" type="xs:string" minOccurs="0"/>
<xs:element name="weekendHours" type="xs:string" minOccurs="0"/>
<xs:element name="phone" type="xs:string" minOccurs="0"/>
<xs:element name="website" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

```

<xs:element name="IndoorStoreyAttribute" type="uro:IndoorStoreyAttributeType" substitutionGroup="uro:IndoorAttribut
e"/>
<xs:complexType name="IndoorStoreyAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:IndoorStoreyAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="IndoorStoreyAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="category" type="xs:boolean" minOccurs="0"/>
        <xs:element name="ordinal" type="xs:double" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="IndoorTacatileTileAttribute" type="uro:IndoorTacatileTileAttributeType" substitutionGroup="uro:In
doorAttribute"/>
<xs:complexType name="IndoorTacatileTileAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:IndoorTacatileTileAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="IndoorTacatileTileAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="startNode" type="xs:string" minOccurs="0"/>
        <xs:element name="endNode" type="xs:string" minOccurs="0"/>
        <xs:element name="category" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="roof" type="xs:string" minOccurs="0"/>
        <xs:element name="floorId" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="IndoorUserDefinedAttribute" type="uro:IndoorUserDefinedAttributeType" substitutionGroup="uro:In
doorAttribute"/>
<xs:complexType name="IndoorUserDefinedAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:IndoorUserDefinedAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="IndoorUserDefinedAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:IndoorAttributeType">
      <xs:sequence>
        <xs:element name="name" type="xs:string" minOccurs="0"/>
        <xs:element name="nominalValue" type="uro:UserDefinedValuePropertyType" minOccurs="0"/>
        <xs:element name="description" type="xs:string" minOccurs="0"/>
        <xs:element name="unit" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="UserDefinedValue" type="uro:UserDefinedValueType"/>
<xs:complexType name="UserDefinedValuePropertyType">
  <xs:sequence>
    <xs:element ref="uro:UserDefinedValue"/>
  </xs:sequence>

```

```

</xs:sequence>
</xs:complexType>
<xs:complexType name="UserDefinedValueType">
  <xs:sequence>
    <xs:element name="stringValue" type="xs:string" minOccurs="0"/>
    <xs:element name="intValue" type="xs:integer" minOccurs="0"/>
    <xs:element name="doubleValue" type="xs:double" minOccurs="0"/>
    <xs:element name="codeValue" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="dateValue" type="xs:date" minOccurs="0"/>
    <xs:element name="uriValue" type="xs:anyURI" minOccurs="0"/>
    <xs:element name="measuredValue" type="gml:MeasureType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<!-- Enumeration -->
<xs:simpleType name="IfcElementCompositionEnum">
  <xs:restriction base="xs:string">
    <xs:enumeration value="COMPLEX"/>
    <xs:enumeration value="ELEMENT"/>
    <xs:enumeration value="PARTIAL"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="IfcInternalOrExternalEnum">
  <xs:restriction base="xs:string">
    <xs:enumeration value="INTERNAL"/>
    <xs:enumeration value="EXTERNAL"/>
    <xs:enumeration value="NOTDEFINED"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="IfcTransportElementTypeEnum">
  <xs:restriction base="xs:string">
    <xs:enumeration value="ELEVATOR"/>
    <xs:enumeration value="ESCALATOR"/>
    <xs:enumeration value="NOTDEFINED"/>
    <xs:enumeration value="USERDEFINED"/>
    <xs:enumeration value="NOTDEFINED"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="IfcSIPrefix">
  <xs:restriction base="xs:string">
    <xs:enumeration value="EXA"/>
    <xs:enumeration value="PETA"/>
    <xs:enumeration value="TERA"/>
    <xs:enumeration value="GIGA"/>
    <xs:enumeration value="MEGA"/>
    <xs:enumeration value="KILO"/>
    <xs:enumeration value="HECTO"/>
    <xs:enumeration value="DECA"/>
    <xs:enumeration value="DECI"/>
    <xs:enumeration value="CENTI"/>
    <xs:enumeration value="MILLI"/>
    <xs:enumeration value="MICRO"/>
    <xs:enumeration value="NANO"/>
    <xs:enumeration value="PICO"/>
    <xs:enumeration value="FEMTO"/>
    <xs:enumeration value="ATTO"/>
  </xs:restriction>
</xs:simpleType>
<xs:simpleType name="IfcUnitEnum">
  <xs:restriction base="xs:string">

```

```

<xs:enumeration value="ABSORBEDDOSEUNIT"/>
<xs:enumeration value="AMOUNTOFSUBSTANCEUNIT"/>
<xs:enumeration value="AREAUNIT"/>
<xs:enumeration value="DOSEEQUIVALENTUNIT"/>
<xs:enumeration value="ELECTRICCAPACITANCEUNIT"/>
<xs:enumeration value="ELECTRICCHARGEUNIT"/>
<xs:enumeration value="ELECTRICCONDUCTANCEUNIT"/>
<xs:enumeration value="ELECTRICCURRENTUNIT"/>
<xs:enumeration value="ELECTRICRESISTANCEUNIT"/>
<xs:enumeration value="ELECTRICVOLTAGEUNIT"/>
<xs:enumeration value="ENERGYUNIT"/>
<xs:enumeration value="FORCEUNIT"/>
<xs:enumeration value="FREQUENCYUNIT"/>
<xs:enumeration value="ILLUMINANCEUNIT"/>
<xs:enumeration value="INDUCTANCEUNIT"/>
<xs:enumeration value="LENGTHUNIT"/>
<xs:enumeration value="LUMINOUSFLUXUNIT"/>
<xs:enumeration value="LUMINOUSINTENSITYUNIT"/>
<xs:enumeration value="MAGNETICFLUXDENSITYUNIT"/>
<xs:enumeration value="MAGNETICFLUXUNIT"/>
<xs:enumeration value="MASSUNIT"/>
<xs:enumeration value="PLANEANGLEUNIT"/>
<xs:enumeration value="POWERUNIT"/>
<xs:enumeration value="PRESSUREUNIT"/>
<xs:enumeration value="RADIOACTIVITYUNIT"/>
<xs:enumeration value="SOLIDANGLEUNIT"/>
<xs:enumeration value="THERMODYNAMICTEMPERATUREUNIT"/>
<xs:enumeration value="TIMEUNIT"/>
<xs:enumeration value="VOLUMEUNIT"/>
<xs:enumeration value="USERDEFINED"/>
</xs:restriction>
</xs:simpleType>
<xs:element name="RoomAttribute" type="uro:RoomAttributeType" abstract="true"/>
<xs:complexType name="RoomAttributeType" abstract="true">
  <xs:sequence/>
</xs:complexType>
<xs:complexType name="RoomAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:RoomAttribute"/>
  </xs:sequence>
</xs:complexType>

<!-- ===== DM Attribute =====>
<xs:element name="DmAttribute" type="uro:DmAttributeType" abstract="true"/>
<xs:complexType name="DmAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:DmAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="DmAttributeType" abstract="true">
  <xs:sequence>
    <xs:element name="dmCode" type="gml:CodeType"/>
    <xs:element name="meshCode" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="dmElement" type="uro:DmElementPropertyType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="DmElement" type="uro:DmElementType"/>
<xs:complexType name="DmElementPropertyType">
  <xs:sequence>
    <xs:element ref="uro:DmElement"/>
  </xs:sequence>

```

```

</xs:sequence>
</xs:complexType>
<xs:complexType name="DmElementType">
  <xs:sequence>
    <xs:element name="locationType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="infoType" type="gml:CodeType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>第 3.2 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="elementKey" type="xs:string" minOccurs="0"/>
    <xs:element name="hierarchyLevel" type="xs:string" minOccurs="0"/>
    <xs:element name="dataType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="annotationType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="precisionType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="dislocationType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="breakType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="attributeValue" type="xs:string" minOccurs="0"/>
    <xs:element name="attributeType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="attributeValueType" type="xs:string" minOccurs="0"/>
    <xs:element name="creationDate" type="xs:gYearMonth" minOccurs="0"/>
    <xs:element name="updateDate" type="xs:gYearMonth" minOccurs="0">
      <xs:annotation>
        <xs:documentation>第 3.2 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="terminationDate" type="xs:gYearMonth" minOccurs="0"/>
    <xs:element name="freeSpace" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="DmGeometricAttribute" type="uro:DmGeometricAttributeType" substitutionGroup="uro:DmAttribute" />
<xs:complexType name="DmGeometricAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:DmGeometricAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="DmGeometricAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:DmAttributeType">
      <xs:sequence>
        <xs:element name="geometryType" type="gml:CodeType">
          <xs:annotation>
            <xs:documentation>第 3.2 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="mapLevel" type="gml:CodeType">
          <xs:annotation>
            <xs:documentation>第 3.2 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="shapeType" type="gml:CodeType">
          <xs:annotation>
            <xs:documentation>第 3.2 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="visibility" type="xs:boolean" minOccurs="0"/>
        <xs:element name="is3d" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isInstallation" type="xs:boolean" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

<xs:element name="isEdited" type="xs:boolean" minOccurs="0"/>
<xs:element name="isSupplementarySymbol" type="xs:boolean" minOccurs="0"/>
<xs:element name="angle" type="xs:double" minOccurs="0"/>
<xs:element name="elevation" type="gml:LengthType" minOccurs="0"/>
<xs:element name="lod0Geometry" type="gml:GeometryPropertyType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="DmAnnotation" type="uro:DmAnnotationType" substitutionGroup="uro:DmAttribute"/>
<xs:complexType name="DmAnnotationPropertyType">
<xs:sequence>
<xs:element ref="uro:DmAnnotation"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="DmAnnotationType">
<xs:complexContent>
<xs:extension base="uro:DmAttributeType">
<xs:sequence>
<xs:element name="geometryType" type="gml:CodeType">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="shapeType" type="gml:CodeType">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="label" type="xs:string">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="isVertical" type="xs:boolean">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="size" type="xs:integer">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="orientation" type="xs:integer">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="linewidth" type="xs:integer">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="spacing" type="xs:integer">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="lod0AnchorPoint" type="gml:GeometryPropertyType">

```



```

    <xs:annotation>
      <xs:documentation>第 3.2 版修正</xs:documentation>
    </xs:annotation>
  </xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="PublicLand" type="uro:PublicLandType" substitutionGroup="luse:LandUse"/>
<xs:complexType name="PublicLandPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="uro:PublicLand"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="PublicLandType">
  <xs:complexContent>
    <xs:extension base="luse:LandUseType">
      <xs:sequence>
        <xs:element name="id" type="xs:string"/>
        <xs:element name="ownerName" type="xs:string" minOccurs="0"/>
        <xs:element name="ownerType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="landCategory" type="xs:string" minOccurs="0"/>
        <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="status" type="xs:string" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="roadStatus" type="uro:RoadTypePropertyType" substitutionGroup="tran:_GenericApplicationPropertyOfRoad"/>
<xs:element name="RoadType" type="uro:RoadTypeType"/>
<xs:complexType name="RoadTypePropertyType">
  <xs:sequence>
    <xs:element ref="uro:RoadType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="RoadTypeType">
  <xs:sequence>
    <xs:element name="id" type="xs:string" minOccurs="0"/>
    <xs:element name="creationDate" type="xs:date" minOccurs="0"/>
    <xs:element name="isTemporary" type="xs:boolean" minOccurs="0"/>
    <xs:element name="roadType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="widthType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="isTollRoad" type="xs:boolean" minOccurs="0"/>
    <xs:element name="separator" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="isHighWay" type="xs:boolean" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== i-UR ver2.0 ===== -->
<!-- ===== Extended attribute for Building ===== -->
<!-- ===== -->
<xs:element name="BuildingAttribute" type="uro:BuildingAttributeType" abstract="true"/>
<xs:complexType name="BuildingAttributeType" abstract="true">
  <xs:sequence/>
</xs:complexType>
<xs:complexType name="BuildingAttributePropertyType">
  <xs:sequence>

```

```

<xs:element ref="uro:BuildingAttribute"/>
</xs:sequence>
</xs:complexType>
<!-- ===== Subtypes of Extended attribute for Building ===== -->
<xs:element name="BuildingIDAttribute" type="uro:BuildingIDAttributeType" substitutionGroup="uro:BuildingAttribute">
<xs:annotation>
<xs:documentation>建物識別属性</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="BuildingIDAttributeType">
<xs:complexContent>
<xs:extension base="uro:BuildingAttributeType">
<xs:sequence>
<xs:element name="buildingID" type="xs:string">
<xs:annotation>
<xs:documentation>3D 都市モデルでは必須</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="branchID" type="xs:integer" minOccurs="0"/>
<xs:element name="partID" type="xs:integer" minOccurs="0"/>
<xs:element name="prefecture" type="gml:CodeType" minOccurs="0"/>
<xs:element name="city" type="gml:CodeType">
<xs:annotation>
<xs:documentation>3D 都市モデルでは必須</xs:documentation>
</xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="BuildingIDAttributePropertyType">
<xs:sequence>
<xs:element ref="uro:BuildingIDAttribute"/>
</xs:sequence>
</xs:complexType>
<xs:element name="BuildingDetailAttribute" type="uro:BuildingDetailAttributeType" substitutionGroup="uro:BuildingAttribute">
<xs:annotation>
<xs:documentation>建物利用現況</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="BuildingDetailAttributeType">
<xs:complexContent>
<xs:extension base="uro:BuildingAttributeType">
<xs:sequence>
<xs:element name="serialNumberOfBuildingCertification" type="xs:string" minOccurs="0"/>
<xs:element name="siteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="buildingFootprintArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="buildingRoofEdgeArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="developmentArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="buildingStructureType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="buildingStructureOrgType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="fireproofStructureType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="implementingBody" type="xs:string" minOccurs="0"/>
<xs:element name="urbanPlanType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="areaClassificationType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="districtsAndZonesType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="landUseType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="reference" type="xs:string" minOccurs="0"/>

```

```

<xs:element name="majorUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="majorUsage2" type="gml:CodeType" minOccurs="0"/>
<xs:element name="orgUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="orgUsage2" type="gml:CodeType" minOccurs="0"/>
<xs:element name="detailedUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="detailedUsage2" type="gml:CodeType" minOccurs="0"/>
<xs:element name="detailedUsage3" type="gml:CodeType" minOccurs="0"/>
<xs:element name="groundFloorUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="secondFloorUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="thirdFloorUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="basementUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="basementFirstUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="basementSecondUsage" type="gml:CodeType" minOccurs="0"/>
<xs:element name="vacancy" type="gml:CodeType" minOccurs="0"/>
<xs:element name="buildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="floorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="specifiedBuildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="specifiedFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="standardFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="buildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="eaveHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0"/>
<xs:element name="surveyYear" type="xs:gYear"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="BuildingDetailAttributePropertyType">
<xs:sequence>
<xs:element ref="uro:BuildingDetailAttribute"/>
</xs:sequence>
</xs:complexType>
<xs:element name="LargeCustomerFacilityAttribute" type="uro:LargeCustomerFacilityAttributeType" substitutionGroup
="uro:BuildingAttribute">
<xs:annotation>
<xs:documentation>集客施設立地現況</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="LargeCustomerFacilityAttributeType">
<xs:complexContent>
<xs:extension base="uro:BuildingAttributeType">
<xs:sequence>
<xs:element name="class" type="gml:CodeType" minOccurs="0"/>
<xs:element name="name" type="xs:string" minOccurs="0"/>
<xs:element name="capacity" type="xs:integer" minOccurs="0"/>
<xs:element name="owner" type="xs:string" minOccurs="0"/>
<xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="totalStoreFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="inauguralDate" type="xs:date" minOccurs="0"/>
<xs:element name="yearOpened" type="xs:gYear" minOccurs="0"/>
<xs:element name="yearClosed" type="xs:gYear" minOccurs="0"/>
<xs:element name="keyTenants" type="xs:string" minOccurs="0"/>
<xs:element name="availability" type="xs:boolean" minOccurs="0"/>
<xs:element name="urbanPlanType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="areaClassificationType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="districtsAndZonesType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="landUseType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="reference" type="xs:string" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0"/>

```

```

    <xs:element name="surveyYear" type="xs:gYear"/>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="LargeCustomerFacilityAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:LargeCustomerFacilityAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="BuildingUsecaseAttribute" type="uro:BuildingUsecaseAttributeType" substitutionGroup="uro:Buildin
gAttribute">
  <xs:annotation>
    <xs:documentation>R6 i-都市再生</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="BuildingUsecaseAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:BuildingAttributeType">
      <xs:sequence>
        <xs:element name="isTemporal" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="floorHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="isGroundFloorOpen" type="xs:boolean" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="BuildingUsecaseAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:BuildingUsecaseAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== Attribute type for further extension ===== -->
<xs:element name="KeyValuePairAttribute" type="uro:KeyValuePairAttributeType">
  <xs:annotation>
    <xs:documentation>拡張属性</xs:documentation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="KeyValuePairAttributeType">
  <xs:sequence>
    <xs:element name="key" type="gml:CodeType"/>
    <xs:element name="codeValue" type="gml:CodeType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="KeyValuePairAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:KeyValuePairAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== Extended attribute for Land Use ===== -->
<!-- ===== -->
<xs:element name="LandUseAttribute" type="uro:LandUseAttributeType" abstract="true"/>
<xs:complexType name="LandUseAttributeType" abstract="true">
  <xs:sequence/>
</xs:complexType>
<xs:complexType name="LandUseAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:LandUseAttribute"/>
  </xs:sequence>

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```

</xs:complexType>
<xs:complexType name="LandUseDetailAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:LandUseDetailAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== Subtypes of Extended attribute for LandUse ===== -->
<xs:element name="LandUseDetailAttribute" type="uro:LandUseDetailAttributeType" substitutionGroup="uro:LandUseAttribute">
  <xs:annotation>
    <xs:documentation>土地利用現況</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="LandUseDetailAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:LandUseAttributeType">
      <xs:sequence>
        <xs:element name="id" type="xs:string" minOccurs="0"/>
        <xs:element name="orgLandUse" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="nominalArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="ownerType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="owner" type="xs:string" minOccurs="0"/>
        <xs:element name="areaInSquareMeter" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="areaInHa" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="buildingCoverageRate" type="xs:double" minOccurs="0"/>
        <xs:element name="floorAreaRate" type="xs:double" minOccurs="0"/>
        <xs:element name="specifiedBuildingCoverageRate" type="xs:double" minOccurs="0"/>
        <xs:element name="specifiedFloorAreaRate" type="xs:double" minOccurs="0"/>
        <xs:element name="standardFloorAreaRate" type="xs:double" minOccurs="0"/>
        <xs:element name="urbanPlanType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="areaClassificationType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="districtsAndZonesType" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="prefecture" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="city" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="reference" type="xs:string" minOccurs="0"/>
        <xs:element name="note" type="xs:string" minOccurs="0"/>
        <xs:element name="surveyYear" type="xs:gYear" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== Extended attribute for Road ===== -->
<!-- ===== -->
<xs:element name="RoadAttribute" type="uro:RoadAttributeType" abstract="true"/>
<xs:complexType name="RoadAttributeType" abstract="true">
  <xs:sequence/>
</xs:complexType>
<xs:complexType name="RoadAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:RoadAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== Subtypes of Extended attribute for Road ===== -->
<xs:element name="TrafficVolumeAttribute" type="uro:TrafficVolumeAttributeType" substitutionGroup="uro:RoadAttribute">
  <xs:annotation>
    <xs:documentation>交通量属性</xs:documentation>
  </xs:annotation>
</xs:element>

```

```

<xs:complexType name="TrafficVolumeAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:RoadAttributeType">
      <xs:sequence>
        <xs:element name="sectionID" type="xs:string" minOccurs="0"/>
        <xs:element name="routeName" type="xs:string" minOccurs="0"/>
        <xs:element name="weekday12hourTrafficVolume" type="xs:integer" minOccurs="0"/>
        <xs:element name="weekday24hourTrafficVolume" type="xs:integer" minOccurs="0"/>
        <xs:element name="largeVehicleRate" type="xs:double" minOccurs="0"/>
        <xs:element name="congestionRate" type="xs:double" minOccurs="0"/>
        <xs:element name="averageTravelSpeedInCongestion" type="xs:double" minOccurs="0"/>
        <xs:element name="averageInboundTravelSpeedInCongestion" type="xs:double" minOccurs="0"/>
        <xs:element name="averageOutboundTravelSpeedInCongestion" type="xs:double" minOccurs="0"/>
        <xs:element name="averageInboundTravelSpeedNotCongestion" type="xs:double" minOccurs="0"/>
        <xs:element name="averageOutboundTravelSpeedNotCongestion" type="xs:double" minOccurs="0"/>
        <xs:element name="observationPointName" type="xs:string" minOccurs="0"/>
        <xs:element name="reference" type="xs:string" minOccurs="0"/>
        <xs:element name="surveyYear" type="xs:gYear" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="TrafficVolumeAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:TrafficVolumeAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="RoadStructureAttribute" type="uro:RoadStructureAttributeType" substitutionGroup="uro:RoadAttribute"
  >
  <xs:annotation>
    <xs:documentation>道路構造属性</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="RoadStructureAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:RoadAttributeType">
      <xs:sequence>
        <xs:element name="widthType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="numberOfLanes" type="xs:integer" minOccurs="0"/>
        <xs:element name="sectionType" type="gml:CodeType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="RoadStructureAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:RoadStructureAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="TrafficAreaAttribute" type="uro:TrafficAreaAttributeType" abstract="true"/>
<xs:complexType name="TrafficAreaAttributeType" abstract="true">
  <xs:sequence/>
</xs:complexType>
<xs:complexType name="TrafficAreaAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:TrafficAreaAttribute"/>
  </xs:sequence>
</xs:complexType>

```

```

<xs:element name="TrafficAreaStructureAttribute" type="uro:TrafficAreaStructureAttributeType" substitutionGroup="uro:TrafficAreaAttribute">
  <xs:annotation>
    <xs:documentation>交通領域構造属性</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="TrafficAreaStructureAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:TrafficAreaAttributeType">
      <xs:sequence>
        <xs:element name="numberOfLanes" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="TrafficAreaStructureAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:TrafficAreaStructureAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="TrafficObjectUseCaseAttribute" type="uro:TrafficObjectUseCaseAttributeType">
  <xs:annotation>
    <xs:documentation>R6 i-都市再生</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="TrafficObjectUseCaseAttributeType">
  <xs:sequence>
    <xs:element name="minWidth" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="maxWidth" type="gml:LengthType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="TrafficObjectUseCaseAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:TrafficObjectUseCaseAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== CityFurniture Attribute ===== -->
<!-- ===== -->
<xs:element name="CityFurnitureAttribute" type="uro:CityFurnitureAttributeType" abstract="true"/>
<xs:complexType name="CityFurnitureAttributeType" abstract="true">
  <xs:sequence/>
</xs:complexType>
<xs:complexType name="CityFurnitureAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:CityFurnitureAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== Subtypes of Extended attribute for CityFurniture ===== -->
<xs:element name="CityFurnitureDetailAttribute" type="uro:CityFurnitureDetailAttributeType" substitutionGroup="uro:CityFurnitureAttribute">
  <xs:annotation>
    <xs:documentation>都市設備詳細属性</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="CityFurnitureDetailAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:CityFurnitureAttributeType">
      <xs:sequence>
        <xs:element name="facilityType" type="gml:CodeType" minOccurs="0">

```

```

<xs:annotation>
  <xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="description" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="CityFurnitureDetailAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:CityFurnitureDetailAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== WaterBody Attribute ===== -->
<xs:element name="WaterBodyDetailAttribute" type="uro:WaterBodyDetailAttributeType"/>
<xs:complexType name="WaterBodyDetailAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:WaterBodyDetailAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="WaterBodyDetailAttributeType">
  <xs:sequence>
    <xs:element name="kana" type="xs:string" minOccurs="0"/>
    <xs:element name="waterSystemCode" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="riverCode" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="adminType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="flowDirection" type="xs:boolean" minOccurs="0"/>
    <xs:element name="maximumDepth" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="waterSurfaceElevation" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
    <xs:element name="measurementYearMonth" type="xs:gYearMonth" minOccurs="0"/>
    <xs:element name="prefecture" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="city" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>

<!-- ===== 災害リスク属性 ===== -->
<xs:element name="DisasterRiskAttribute" type="uro:DisasterRiskAttributeType" abstract="true">
  <xs:annotation>
    <xs:documentation>災害リスク属性</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="DisasterRiskAttributeType" abstract="true">
  <xs:sequence>
    <xs:element name="description" type="gml:CodeType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="DisasterRiskAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:DisasterRiskAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="FloodingRiskAttribute" type="uro:FloodingRiskAttributeType" abstract="true" substitutionGroup="uro:DisasterRiskAttribute">
  <xs:annotation>
    <xs:documentation>浸水想定属性</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="FloodingRiskAttributeType" abstract="true">

```



```

<xs:complexContent>
  <xs:extension base="uro:DisasterRiskAttributeType">
    <xs:sequence>
      <xs:element name="rank" type="gml:CodeType" minOccurs="0"/>
      <xs:element name="rankOrg" type="gml:CodeType" minOccurs="0"/>
      <xs:element name="depth" type="gml:LengthType" minOccurs="0"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="FloodingRiskAttributePropertyType">
  <xs:sequence>
    <xs:element ref="uro:FloodingRiskAttribute"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="RiverFloodingRiskAttribute" type="uro:RiverFloodingRiskAttributeType" substitutionGroup="uro:FloodingRiskAttribute">
  <xs:annotation>
    <xs:documentation>洪水浸水想定リスク属性</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="RiverFloodingRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FloodingRiskAttributeType">
      <xs:sequence>
        <xs:element name="adminType" type="gml:CodeType"/>
        <xs:element name="scale" type="gml:CodeType"/>
        <xs:element name="duration" type="gml:MeasureType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="TsunamiRiskAttribute" type="uro:TsunamiRiskAttributeType" substitutionGroup="uro:FloodingRiskAttribute">
  <xs:annotation>
    <xs:documentation>津波浸水想定リスク属性</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="TsunamiRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FloodingRiskAttributeType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="InlandFloodingRiskAttribute" type="uro:InlandFloodingRiskAttributeType" substitutionGroup="uro:FloodingRiskAttribute">
  <xs:annotation>
    <xs:documentation>内水浸水想定リスク属性</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="InlandFloodingRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FloodingRiskAttributeType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="HighTideRiskAttribute" type="uro:HighTideRiskAttributeType" substitutionGroup="uro:FloodingRiskAttribute">
  <xs:annotation>
    <xs:documentation>高潮浸水想定リスク属性</xs:documentation>
  </xs:annotation>

```

```

</xs:element>
<xs:complexType name="HighTideRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FloodingRiskAttributeType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="ReservoirFloodingRiskAttribute" type="uro:ReservoirFloodingRiskAttributeType" substitutionGroup="uro:FloodingRiskAttribute">
  <xs:annotation>
    <xs:documentation>ため池ハザードマップ属性</xs:documentation>
    <xs:documentation>第 4.0 版追加</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ReservoirFloodingRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:FloodingRiskAttributeType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="LandSlideRiskAttribute" type="uro:LandSlideRiskAttributeType" substitutionGroup="uro:DisasterRiskAttribute">
  <xs:annotation>
    <xs:documentation>土砂災害リスク属性</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="LandSlideRiskAttributeType">
  <xs:complexContent>
    <xs:extension base="uro:DisasterRiskAttributeType">
      <xs:sequence>
        <xs:element name="areaType" type="gml:CodeType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="waterBodyDetailAttribute" type="uro:WaterBodyDetailAttributePropertyType" substitutionGroup="water:_GenericApplicationPropertyOfWaterBody">
  <xs:annotation>
    <xs:documentation>第 3.1 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:schema>

```

A.2 Sample data (informative)

```

<?xml version="1.0" encoding="UTF-8"?>
<core:CityModel xmlns:core="http://www.opengis.net/citygml/2.0" xmlns:uro="https://www.geospatial.jp/iur/uro/3.1"
  xmlns:bldg="http://www.opengis.net/citygml/building/2.0" xmlns:gml="http://www.opengis.net/gml" xmlns:xlink="
  http://www.w3.org/1999/xlink" xmlns:xAL="urn:oasis:names:tc:ciq:xsdschema:xAL:2.0" xmlns:xsi="http://www.w3.org
  /2001/XMLSchema-instance" xsi:schemaLocation="https://www.geospatial.jp/iur/uro/3.1 urbanObject.xsd http://ww
  w.opengis.net/citygml/2.0 http://schemas.opengis.net/citygml/2.0/cityGMLBase.xsd http://www.opengis.net/citygml
  /building/2.0 http://schemas.opengis.net/citygml/building/2.0/building.xsd http://www.opengis.net/gml http://sche
  mas.opengis.net/gml/3.1.1/base/gml.xsd">
<gml:boundedBy>
  <gml:Envelope srsName="http://www.opengis.net/def/crs/EPSSG/0/6697" srsDimension="3">
    <gml:lowerCorner>35.66938778399524 139.71265394509714 22.164474</gml:lowerCorner>
    <gml:upperCorner>35.68061650843716 139.72060919109035 170.542664</gml:upperCorner>
  </gml:Envelope>
</gml:boundedBy>

```

```

<core:cityObjectMember>
<bldg:Building>
<gml:name>サンプル建物</gml:name>
<bldg:usage codeSpace="..../codelists/Building_usage.xml">402</bldg:usage>
<bldg:storeysAboveGround>2</bldg:storeysAboveGround>
<bldg:lod0RoofEdge>
<gml:MultiSurface>
<gml:surfaceMember>
<gml:Polygon>
<gml:exterior>
<gml:LinearRing>
<gml:posList>35.67391535057662 139.71431378623316 60.054
-- omitted --
35.67391535057662 139.71431378623316 60.054 </gml:posList>
</gml:LinearRing>
</gml:exterior>
</gml:Polygon>
</gml:surfaceMember>
</gml:MultiSurface>
</bldg:lod0RoofEdge>
<bldg:lod1Solid>
<gml:Solid>
<gml:exterior>
<gml:CompositeSurface>
<gml:surfaceMember>
<gml:Polygon>
<gml:exterior>
<gml:LinearRing>
<gml:posList>35.67391535057662 139.71431378623316 60.054
-- omitted --
35.67391535057662 139.71431378623316 60.054 </gml:posList>
</gml:LinearRing>
</gml:exterior>
</gml:Polygon>
</gml:surfaceMember>
<gml:surfaceMember>
<gml:Polygon>
<gml:exterior>
<gml:LinearRing>
<gml:posList>35.673926501121926 139.7145879533491 32.783798 35.67398079231825 139.71462122894337 32.
783798 35.67398079231825 139.71462122894337 60.054 35.673926501121926 139.7145879533491 60.054 35.6739265011
21926 139.7145879533491 32.783798 </gml:posList>
</gml:LinearRing>
</gml:exterior>
</gml:Polygon>
</gml:surfaceMember>
</gml:CompositeSurface>
</gml:exterior>
</gml:Solid>
</bldg:lod1Solid>
<uro:buildingIDAttribute>
<uro:BuildingIDAttribute>
<uro:buildingID>27100-bldg-134</uro:buildingID>
<uro:city codeSpace="..../codelists/Common_localPublicAuthorities.xml">27100</uro:city>
</uro:BuildingIDAttribute>
</uro:buildingDetailAttribute>
<uro:buildingDisasterRiskAttribute>
<uro:BuildingLandSlideRiskAttribute>
<uro:description codeSpace="..../codelists/BuildingLandSlideRiskAttribute_description.xml">1</uro:description>

```

```
<uro:areaType codeSpace="../../codelists/BuildingLandSlideRiskAttribute_areaType.xml">1</uro:areaType>
</uro:BuildingLandSlideRiskAttribute>
</uro:buildingDisasterRiskAttribute>
<uro:buildingDataQualityAttribute>
  <uro:BuildingDataQualityAttribute>
    <uro:srcScale codeSpace="../../codelists/BuildingDataQualityAttribute_srcScale.xml">1</uro:srcScale>
    <uro:lod1HeightType codeSpace="../../codelists/BuildingDataQualityAttribute_lod1HeightType.xml">2</uro:lod1HeightType>
  </uro:BuildingDataQualityAttribute>
</uro:buildingDataQualityAttribute>
</bldg:Building>
</core:cityObjectMember>
</core:CityModel>
```

Annex B

(informative)

Code lists for Urban Object Data

A code list is a form of enumeration where the valid values are defined in a separate register. The code list values consist of a link or identifier for the register as well as the value from that register which is being used. In contrast to fixed enumerations, modifications and extensions to the value domain become possible with code lists. The values for all code lists in Urban Planning ADE are defined externally as in CityGML. This could, for example, be by adopting classifications from global, national, or community standards.

Examples of code lists for Urban Planning ADE can be found in Geospatial Information Center (<https://www.geospatial.jp/iur/codelists/>) which reflect the results of the Project "PLATEAU" (<https://www.mlit.go.jp/plateau/>) led by the Ministry of Land, Infrastructure, Transport and Tourism of Japan.

Please note that this annex is non-normative and the example code lists are neither mandatory nor complete.

Part 2. Urban Function Data Encoding Specification

1. Scope

Plans and regulations are important information in urban development, landscape preservation, and disaster management. Information related to plans and regulation, such as administrative boundaries and zoning works, are conditions or constraints for spatial planning and are conceptual and virtual objects in urban areas.

This document defines conceptual and virtual objects in urban areas as “urban function objects” and specifies the encoding format of these objects.

Regarding urban planning, feature types and properties are defined according to the City Planning Act of Japan.

2. Normative references

Followings are normative references of this document.

- OpenGIS® OGC City Geography Markup Language (CityGML) Encoding Standard, Version 2.0, OGC document 12-019

3. Conventions

3.1 Terms and definitions

No terms and definitions are listed in this document.

3.2 Abbreviated terms

ADE Application Domain Extensions

CityGML City Geography Markup Language

GML Geography Markup Language

OGC Open Geospatial Consortium

UML Unified Modeling Language

4. Urban Function Data Encoding

4.1 Overview

The Urban Function Data Encoding is an extension of CityGML. This document defines the elements and types according to the rules of the Application Domain Extensions (ADE) which are necessary for describing urban functions but not defined in CityGML. Those already defined in CityGML are imported without any inconsistency.

Figure 2-1 shows the structure of the Urban Function Data and the XML Schema Definition is attached in Annex A.

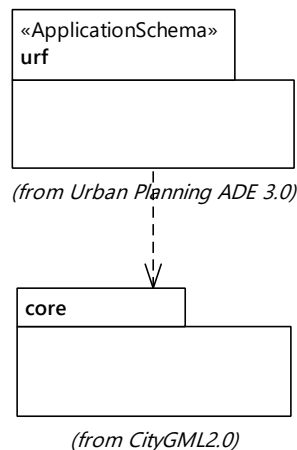


Figure 2-1 Package diagram of Urban Function Data

Urban function module defines conceptual and virtual objects such as administrative boundaries and zoning in urban areas. These objects (hereafter “urban function objects”) are not visible in the real world, but guide and lead city objects such as land use and building to what they should be. The urban function objects have associations with visible city object/objects to add them new functions.

Module name	Urban Function
XML namespace identifier	https://www.geospatial.jp/iur/urf/3.1/
XMLSchema location	https://www.geospatial.jp/iur/schemas/urf/3.1/urbanFunction.xsd
Recommended namespace prefix	urf
Description	This module defines conceptual or virtual objects in the urban areas which give a meaning to specific area, boundary or position. e.g. Administration area, Urban planning area

4.2 Object definition

4.2.1 UrbanFunctionType, _UrbanFunction

A *urf::_UrbanFunction* is a root class of this module and inherits from *core::_CityObjets*. The *urf::_UrbanFunction* and its child elements can obtain its geometry directly or indirectly through associations. When it has an association with a city object, the city object is added enriched with a new function. For example, a substantial well-constructed public building (e.g. school) is designated as an evacuation shelter when a disaster occurs. Figure 2-2 shows the structure of *urf::_UrbanFunction*.

A *uro::_UrbanFunction* is represented in three levels of Levels of Detail (LOD): LOD-2 (minus two), LOD-1 (minus one) and LOD0. The LOD-2 and LOD-1 are new LOD for a broad description of city models. These extended LODs enable user to describe rough city models which do not have to be detailed but should be necessary regional or national planning. This ExtendedLOD concept is described in Annex C of this document.

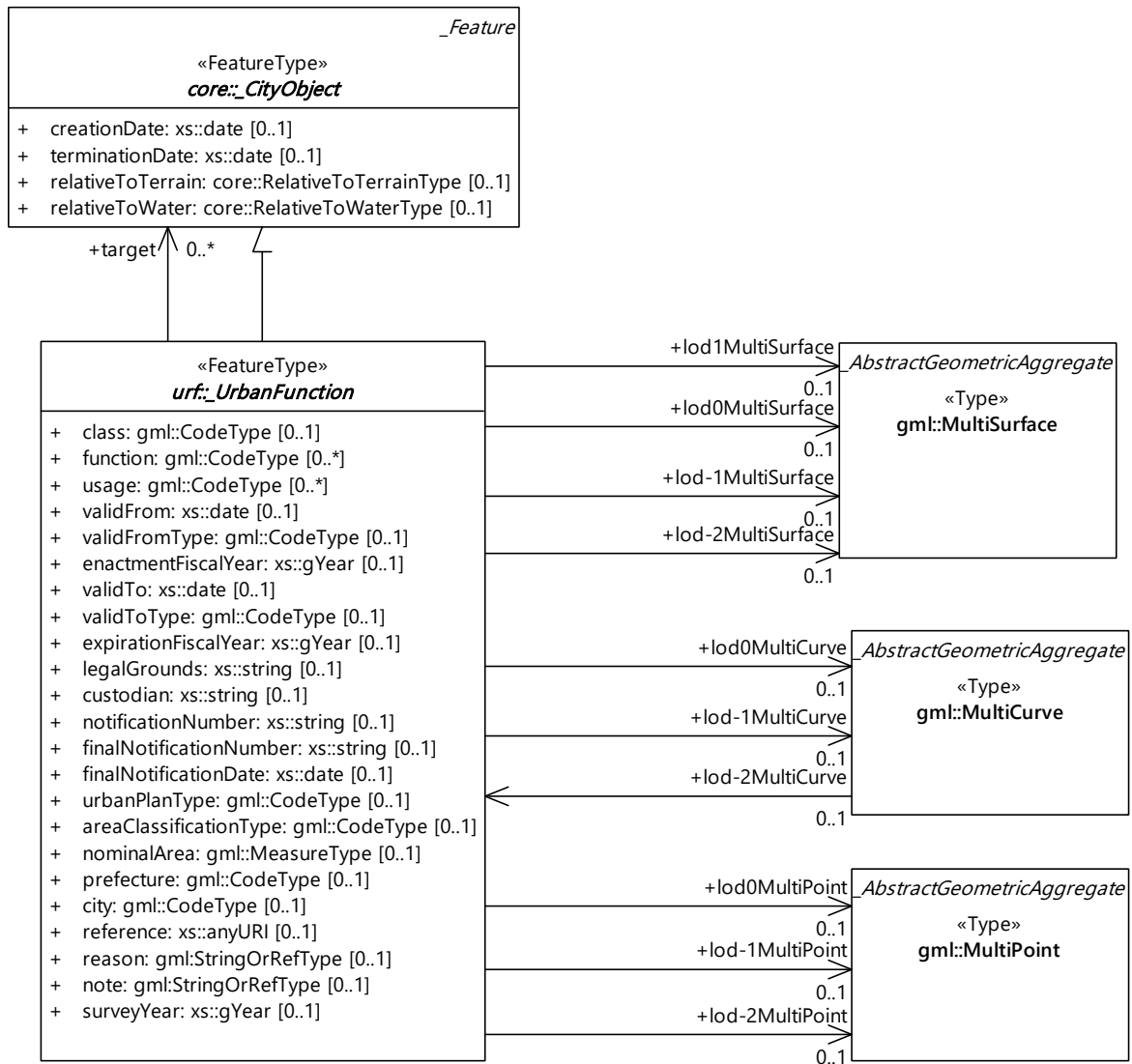


Figure 2-2 UML diagram of urf::_UrbanFunction

Object	Definition
_UrbanFunction	Conceptual and virtual objects which give a function to city objects.
Property	Definition
class	Classification of the urban function.
function	Main purposes of the urban function.
usage	Other purposes of the urban function.
validFrom	The date at which the urban function started to exist.
validFromType	The reason why the urban function started to exist.
enactmentFiscalYear	Fiscal year of enactment.
validTo	The date at which the urban function ended to exist.
validToType	The reason why the urban function ended to exist.
expirationFiscalYear	Fiscal year of expiration.
legalGrounds	Legal basis of the designation.
custodian	Name of the party who designated the urban function.
notificationNumber	The original official identification number assigned to identify this feature.
finalNotificationNumber	The latest official identification number assigned to identify this feature.
finalNotificationDate	The latest notification date of this feature.

urbanPlanType	Type of the location designated by Urban Plan.
areaClassificationType	Type of the location designated by Area Classification.
nominalArea	Nominal area of the urban function.
prefecture	Prefecture name of the location.
city	City name of the location.
reference	Reference information of the urban function.
reason	The reason why the urban function is specified.
note	Additional remarks.
surveyYear	The year when the traffic survey was performed.
lod-2MultiSurface	A specific area which someone may find useful or interesting at LOD-2 level.
lod-1MultiSurface	A specific area which someone may find useful or interesting at LOD-1 level.
lod0MultiSurface	A specific area which someone may find useful or interesting at LOD0 level.
lod1MultiSurface	A specific area which someone may find useful or interesting at LOD1 level.
lod-2MultiCurve	A specific linear location which someone may find useful or interesting at LOD-2 level.
lod-1MultiCurve	A specific linear location which someone may find useful or interesting at LOD-1 level.
lod0MultiCurve	A specific linear location which someone may find useful or interesting at LOD0 level.
lod-2MultiPoint	A specific location which someone may find useful or interesting at LOD-2 level.
lod-1MultiPoint	A specific location which someone may find useful or interesting at LOD-1 level.
lod0MultiPoint	A specific location which someone may find useful or interesting at LOD0 level.
target	Reference to more than one city object.

```

<xs:complexType name="UrbanFunctionType" abstract="true">
  <xs:annotation>
    <xs:documentation>The root type for urban function. As subclass of _CityObject, an
      _UrbanFunction inherits all attributes and relations, in particular description, an
      id, names and description from _AbstractFeature. </xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="core:AbstractCityObjectType">
      <xs:sequence>
        <xs:element name="class" type="gml:CodeType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>UrbanFunction_class.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="function" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="usage" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="validFrom" type="xs:date" minOccurs="0"/>
        <xs:element name="validFromType" type="gml:CodeType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>Common_validType.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="enactmentFiscalYear" type="xs:gYear" minOccurs="0"/>
        <xs:element name="validTo" type="xs:date" minOccurs="0"/>
        <xs:element name="validToType" type="gml:CodeType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>Common_validType.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

<xs:element name="expirationFiscalYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="legalGrounds" type="xs:string" minOccurs="0"/>
<xs:element name="custodian" type="xs:string" minOccurs="0"/>
<xs:element name="notificationNumber" type="xs:string" minOccurs="0"/>
<xs:element name="nominalArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="urbanPlanType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="areaClassificationType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="prefecture" type="gml:CodeType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Common_localPublicAuthorities.xml</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="city" type="gml:CodeType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Common_localPublicAuthorities.xml</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="reference" type="xs:anyURI" minOccurs="0"/>
<xs:element name="reason" type="gml:StringOrRef" minOccurs="0"/>
<xs:element name="note" type="gml:StringOrRef" minOccurs="0"/>
<xs:element name="surveyYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="lod-2MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
<xs:element name="lod-1MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
<xs:element name="lod0MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
<xs:element name="lod1MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
<xs:element name="lod-2MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0"/>
<xs:element name="lod-1MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0"/>
<xs:element name="lod0MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0"/>
<xs:element name="lod1MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0"/>
<xs:element name="lod-2MultiPoint" type="gml:MultiPointPropertyType" minOccurs="0"/>
<xs:element name="lod-1MultiPoint" type="gml:MultiPointPropertyType" minOccurs="0"/>
<xs:element name="lod0MultiPoint" type="gml:MultiPointPropertyType" minOccurs="0"/>
<xs:element name="target" type="urf:TargetPropertyType" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="_UrbanFunction" type="urf:UrbanFunctionType" abstract="true"
substitutionGroup="core:_CityObject"/>
<xs:complexType name="UrbanFunctionPropertyType">
<xs:complexType name="TargetPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="core:_CityObject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

The type “TargetPropertyType” is used for an association with a *core:_CityObject*.

Specific objects such as administrative boundary and land use regulation are defined as subclasses of *urf:_UrbanFunction* (Figure 2-3).



Figure 2-3 Subclasses of *urf::_UrbanFunction*

4.2.2 AdministrationType, Administration

Object	Definition
Administration	Territorial units which an administrative section is divided into.

```

<xs:complexType name="AdministrationType">
  <xs:complexContent>
    <xs:extension base="UrbanFunctionType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Administration" type="AdministrationType" substitutionGroup="_UrbanFunction"/>

```

4.2.3 CensusBlockType, CensusBlock

Object	Definition
--------	------------

CensusBlock	Census survey unit.
Property	Definition
daytimePopulation	Daytime population.
daytimePopulationDensity	Daytime population density.
numberOfOrdinaryHousehold	Total number of ordinary households those who dwell under the same roof and compose a family.
numberOfHouseholdsByOwnership	Number of households by house ownership.
numberOfMainHouseholds	Number of main households except households living in lodgings.
numberOfHouseholdsByStructure	Number of households by house structure.

```

<xs:complexType name="CensusBlockType">
  <xs:annotation>
    <xs:documentation>Block for census survey</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="UrbanFunctionType">
      <xs:sequence>
        <xs:element name="daytimePopulation" type="xs:integer" minOccurs="0"/>
        <xs:element name="daytimePopulationDensity" type="xs:double" minOccurs="0"/>
        <xs:element name="numberOfOrdinaryHouseholds" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfHouseholdsByOwnership" type="NumberOfHouseholdsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="numberOfMainHouseholds" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfHouseholdsByStructure" type="NumberOfHouseholdsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="CensusBlock" type="CensusBlockType" substitutionGroup="_UrbanFunction"/>

```

NumberOfHouseholdsType, NumberOfHouseholds

Type	Definition
NumberOfHouseholds	Number of households by house type
Property	Definition
class	Type of house ownership
number	Number of households

```

<xs:element name="NumberOfHouseholds" type="NumberOfHouseholdsType"/>
<xs:complexType name="NumberOfHouseholdsType">
  <xs:sequence>
    <xs:element name="class" type="gml:CodeType"/>
    <xs:element name="number" type="xs:integer"/>
  </xs:sequence>
</xs:complexType>

```

4.2.4 DisasterDamageType, DisasterDamage

Object	Definition
DisasterDamage	Damaged area or location of disaster.
Property	Definition
damagedArea	Area of the disaster affected area.
numberOfDamagedHouses	Number of houses damaged by the disaster.

numberOfHousesFloodedAboveFloorLevel	Number of houses flooded above floor level.
numberOfHousesFloodedBelowFloorLevel	Number of houses flooded below floor level.
maximumRainfallPerHour	Maximum rainfall per hour.
totalRainfall	Total rainfall.

```
<xs:complexType name="DisasterDamageType">
  <xs:complexContent>
    <xs:extension base="UrbanFunctionType">
      <xs:sequence>
        <xs:element name="damagedArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="numberOfDamagedHouses" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfHousesFloodedAboveFloorLevel" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfHousesFloodedBelowFloorLevel" type="xs:integer" minOccurs="0"/>
        <xs:element name="maximumRainfallPerHour" type="xs:integer" minOccurs="0"/>
        <xs:element name="totalRainfall" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="DisasterDamage" type="DisasterDamageType" substitutionGroup="_UrbanFunction"/>
```

4.2.5 PollutionType, Pollution

Object	Definition
Pollution	Pollution source.
Property	Definition
cause	Description of the pollution source.
damagedArea	Area of the disaster affected area.

```
<xs:complexType name="PollutionType">
  <xs:annotation>
    <xs:documentation>Source of pollution</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="UrbanFunctionType">
      <xs:sequence>
        <xs:element name="damagedArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="cause" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Pollution" type="PollutionType" substitutionGroup="_UrbanFunction"/>
```

4.2.6 DisasterPreventionBaseType, DisasterPreventionBase

Object	Definition
DisasterPreventionBase	Off-site center and shelter during disaster.
Property	Definition
capacity	Maximum number of people who can be accommodated.

```
<xs:complexType name="DisasterPreventionBaseType">
  <xs:complexContent>
    <xs:extension base="UrbanFunctionType">
      <xs:sequence>
```

```

<xs:element name="capacity" type="xs::integer" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="DisasterPreventionBase" type="DisasterPreventionBaseType" substitutionGroup="_UrbanFunction"/>

```

4.2.7 RecreationsType, Recreations

Object	Definition
Recreations	Facilities for recreation.
Property	Definition
capacity	Total area of the facilities.
numberOfUsers	Number of annual users of the facilities.

```

<xs:complexType name="RecreationsType">
<xs:complexContent>
<xs:extension base="urf:UrbanFunctionType">
<xs:sequence>
<xs:element name="capacity" type="xs:integer" minOccurs="0"/>
<xs:element name="numberOfUsers" type="xs:integer" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="Recreations" type="urf:RecreationsType" substitutionGroup="urf:_UrbanFunction"/>

```

4.2.8 HubCityType, HubCity

Object	Definition
HubCity	Regional core urban areas or cities.

```

<xs:complexType name="HubCityType">
<xs:complexContent>
<xs:extension base="UrbanFunctionType"/>
</xs:complexContent>
</xs:complexType>
<xs:element name="HubCity" type="HubCityType" substitutionGroup="_UrbanFunction"/>

```

4.2.9 LandUseDiversionType, LandUseDiversion

Object	Definition
urf::LandUseDiversion	Change of the landuse.

```

<xs:complexType name="LandUseDiversionType">
<xs:complexContent>
<xs:extension base="UrbanFunctionType"/>
</xs:complexContent>
</xs:complexType>
<xs:element name="LandUseDiversion" type="LandUseDiversionType" substitutionGroup="_UrbanFunction"/>

```

4.2.10 UrbanizationType, Urbanization

Object	Definition
Urbanization	Change of the urban area.
Property	Definition
period	Name of ege or era of the urban area.
resources	Name of the resources.

```

<xs:complexType name="UrbanizationType">
  <xs:complexContent>
    <xs:extension base="UrbanFunctionType">
      <xs:sequence>
        <xs:element name="period" type="xs:string" minOccurs="0"/>
        <xs:element name="resources" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Urbanization" type="UrbanizationType" substitutionGroup="_UrbanFunction"/>

```

4.2.11 PublicTransitFacilityType, PublicTransitFacility

Object	Definition
PublicTransitFacility	Information for public transit facility.
Property	Definition
routeName	Name of the route.
sectionName	Name of the section.
companyName	Name of the operating company.
frequencyOfService	Number of times for operation per day.
numberOfCustomers	Total number of customers per day.

```

<xs:complexType name="PublicTransitFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="routeName" type="xs:string" minOccurs="0"/>
        <xs:element name="sectionName" type="xs:string" minOccurs="0"/>
        <xs:element name="companyName" type="xs:string" minOccurs="0"/>
        <xs:element name="frequencyOfService" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfCustomers" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="PublicTransitFacility" type="urf:PublicTransportationFacilityType"/>

```

4.2.12 ZoneType, Zone

Object	Definition
Zone	Root class of designated area.
Property	Definition
location	location name of the zone.

```

<xs:complexType name="ZoneType" abstract="true">
  <xs:complexContent>
    <xs:extension base="UrbanFunctionType">
      <xs:sequence>
        <xs:element name="location" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Zone" type="ZoneType" abstract="true" substitutionGroup="_UrbanFunction"/>

```

urf::Zone is a root class of designated area, and is specialized to one of subclasses described below.

4.2.13 SedimentDisasterProneAreaType, SedimentDisasterProneArea

Object	Definition
SedimentDisasterProneArea	Precautionary area for landslide disasters
Property	Definition
disasterType	Type of the disaster.
areaType	Type of the designated sediment disaster prone area.
zoneNumber	Serial identification number of the sediment disaster prone area.
zoneName	Location name of the sediment disaster prone area.
status	Disignation status of the sediment disaster prone area.

```

<xs:element name="SedimentDisasterProneArea" type="urf:SedimentDisasterProneAreaType"
substitutionGroup="urf:Zone"/>
<xs:complexType name="SedimentDisasterProneAreaType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="disasterType" type="gml:CodeType"/>
        <xs:element name="areaType" type="gml:CodeType"/>
        <xs:element name="zoneNumber" type="xs:string"/>
        <xs:element name="zoneName" type="xs:string"/>
        <xs:element name="status" type="gml:CodeType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```


4.2.14 UnclassifiedBlankAreaType, UnclassifiedBlankArea

Object	Definition
UnclassifiedBlankArea	An area without designated use in less urbanized areas, with less potential for rapid urbanization and less restrictive land regulations and development permits

```
<xs:element name="UnclassifiedBlankArea" type="urf:UnclassifiedBlankAreaType"
substitutionGroup="urf:Zone"></xs:element>
<xs:complexType name="UnclassifiedBlankAreaType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.15 UnclassifiedUseDistrictType, UnclassifiedUseDistrict

Object	Definition
UnclassifiedUseDistrict	An area with designated use in less urbanized areas, with less potential for rapid urbanization and less restrictive land regulations and development permits.

```
<xs:element name="UnclassifiedUseDistrict" type="urf:UnclassifiedUseDistrictType"
substitutionGroup="urf:Zone"></xs:element>
<xs:complexType name="UnclassifiedUseDistrictType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.16 ResidenceAttractionAreaType, ResidenceAttractionArea

Object	Definition
ResidenceAttractionArea	Areas where population density should be maintained in a certain area even in the midst of a population decline, in order to ensure the continuity of services and community life.

```
<xs:element name="ResidenceAttractionArea" type="urf:ResidenceAttractionAreaType"
substitutionGroup="urf:Zone"></xs:element>
<xs:complexType name="ResidenceAttractionAreaType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.17 UrbanFunctionAttractionAreaType, UrbanFunctionAttractionArea

Object	Definition
--------	------------

UrbanFunctionAttractionArea	A zone where urban functions such as medical care, welfare, and commerce are guided and concentrated in central urban centers and lifestyle centers to efficiently provide these various services.
-----------------------------	--

```

<xs:element name="UrbanFunctionAttractionArea" type="urf:UrbanFunctionAttractionAreaType"
substitutionGroup="urf:Zone"></xs:element>
<xs:complexType name="UrbanFunctionAttractionAreaType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

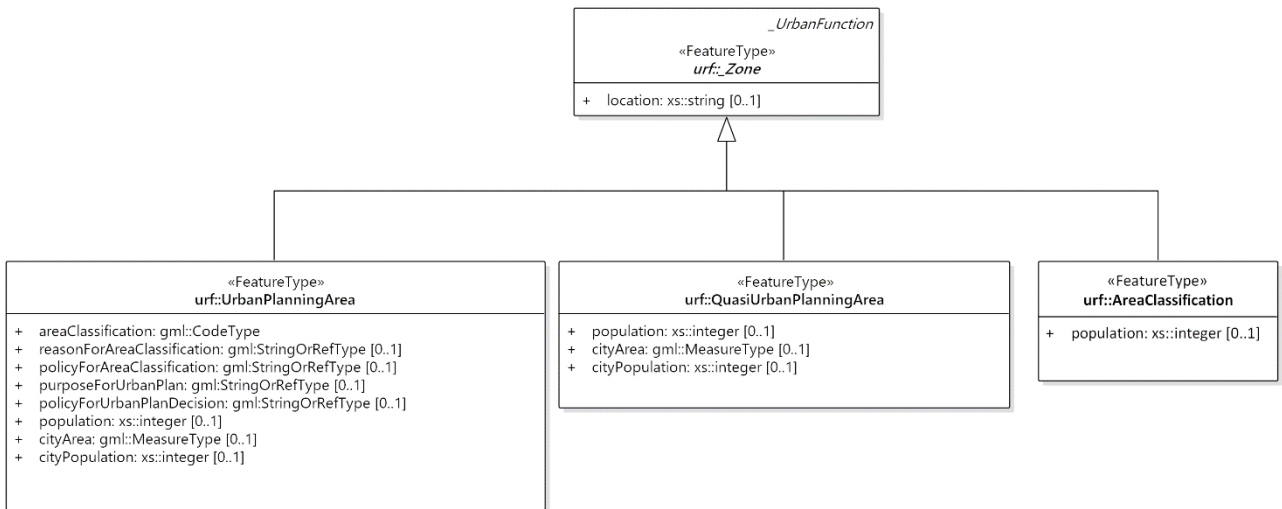


Figure 2-4 Subclasses of urf::Zone: UrbanPlanningArea, QuasiUrbanPlanningArea and AreaClassification

4.2.18 Zoning Feature for Urban Planning

4.2.18.1 UrbanPlanningAreaType, UrbanPlanningArea

Object	Definition
UrbanPlanningArea	An urban planning area designated in accordance with City Planning Act.
Property	Definition
areaClassification	Whether or not a decision has been made on area classification.
reasonForAreaClassification	Reason for the decision on area classification.
policyForAreaClassification	Decision-making policy for the relevant area classification.
purposeForUrbanPlan	Objectives of the city plan.
policyForUrbanPlanDecision	The policy for major city planning decisions concerning land use, urban facility improvement and urban development projects.
population	Total population of the urban planning area.
cityArea	Area of the city in the urban planning area.
cityPopulation	Polulation of the city in the urban planning area.

```

<xs:element name="UrbanPlanningArea" type="urf:UrbanPlanningAreaType" substitutionGroup="urf:Zone"/>
<xs:complexType name="UrbanPlanningAreaType">

```

```

<xs:complexContent>
  <xs:extension base="urf:ZoneType">
    <xs:sequence>
      <xs:element name="areaClassification" type="gml:CodeType">
        <xs:annotation>
          <xs:documentation>Common_availabilityType.xml</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="reasonForAreaClassification" type="gml:StringOrRefType" minOccurs="0"/>
      <xs:element name="policyForAreaClassification" type="gml:StringOrRefType" minOccurs="0"/>
      <xs:element name="purposeForUrbanPlan" type="gml:StringOrRefType" minOccurs="0"/>
      <xs:element name="policyForUrbanPlanDecision" type="gml:StringOrRefType" minOccurs="0"/>
      <xs:element name="population" type="xs:integer" minOccurs="0"/>
      <xs:element name="cityArea" type="gml:MeasureType" minOccurs="0"/>
      <xs:element name="cityPopulation" type="xs:integer" minOccurs="0"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.2 QuasiUrbanPlanningAreaType, QuasiUrbanPlanningArea

Object	Definition
QuasiUrbanPlanningArea	A quasi-urban planning area designated in accordance with City Planning Act.
Property	Definition
population	Total population of the quasi-urban planning area.
cityArea	Area of the city in the quasi-urban planning area.
cityPopulation	Polulation of the city in the quasi-urban planning area.

```

<xs:element name="QuasiUrbanPlanningArea" type="urf:QuasiUrbanPlanningAreaType" substitutionGroup="urf:Zone"/>
<xs:complexType name="QuasiUrbanPlanningAreaType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="population" type="xs:integer" minOccurs="0"/>
        <xs:element name="cityArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="cityPopulation" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.3 AreaClassificationType, AreaClassification

Object	Definition
AreaClassification	Classification between urbanization promotion areas and urbanization control areas.
Property	Definition
population	Total population of the classified area.

```

<xs:element name="AreaClassification" type="urf:AreaClassificationType" substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="AreaClassificationType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="population" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

</xs:extension>
</xs:complexContent>
</xs:complexType>

```

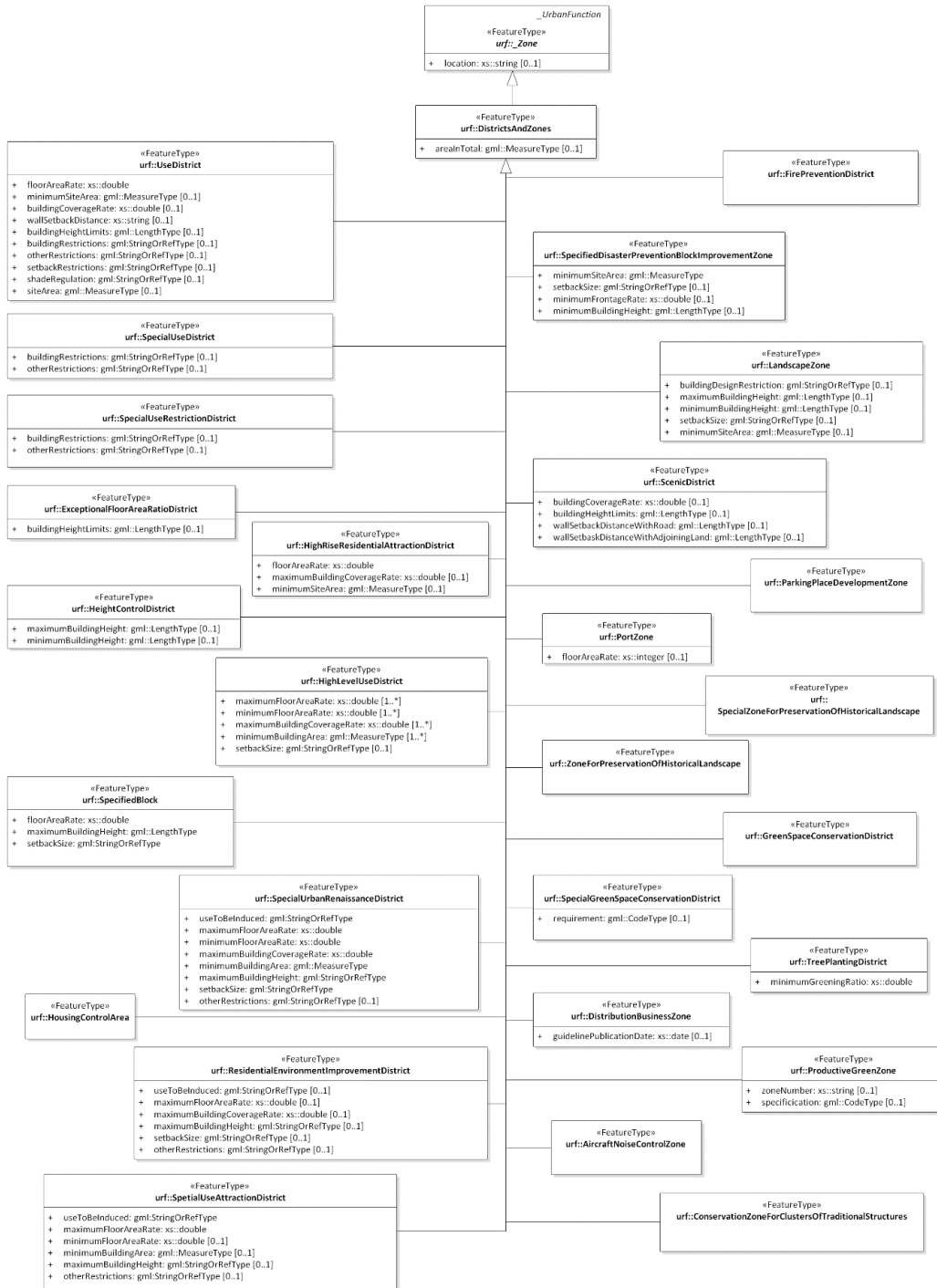


Figure 2-5 UML Diagram of Districts And Zones

4.2.18.4 DistrictsAndZonesType, DistrictsAndZones

Object	Definition
DistrictsAndZones	Districts, zones and blocks established as necessary regarding urban planning area.
Property	Definition
areaInTotal	Total area of the districts and zones in the city.

```

<xs:element name="DistrictsAndZones" type="urf:DistrictsAndZonesType" substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="DistrictsAndZonesType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="areaInTotal" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.5 UseDistrictType, UseDistrict

Object	Definition
UseDistrict	Category 1 low-rise exclusive residential districts, category 2 low-rise exclusive residential districts, category 1 medium-to-high-rise exclusive residential districts, category 2 medium- to-high-rise exclusive residential districts, category 1 residential districts, category 2 residential districts, quasi-residential districts, neighborhood commercial districts, commercial districts, quasi-industrial districts, industrial districts, and exclusive industrial districts.
Property	Definition
floorAreaRate	Rate of the total floor-area of buildings to the site area.
minimumSiteArea	Minimum site area for buildings.
buildingCoverageRate	Rate of the building area to the site area.
wallSetbackDistance	Minimum required setback distance from the external wall.
buildingHeightLimits	Building height limits.
buildingRestrictions	Restrictions on buildings.
otherRestrictions	Restrictions on other structures.
setbackRestrictions	Restrictions on buildings and other structures.
frontRoadRestrictions	Restrictions regarding front road.
adjacentLandRestrictions	Restrictions regarding adjacent land.
northDirectionRestrictions	Restrictions regarding north direction.
shadeRegulation	Regulations on shade.

```

<xs:element name="UseDistrict" type="urf:UseDistrictType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="UseDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="floorAreaRate" type="xs:double"/>
<xs:element name="minimumSiteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="buildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="wallSetbackDistance" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="buildingHeightLimits" type="gml:LengthType" minOccurs="0"/>
<xs:element name="buildingRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="setbackRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="shadeRegulation" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="siteArea" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.6 SpecialUseDistrictType, SpecialUseDistrict

Object	Definition
SpecialUseDistrict	A special use district is a district within a use district which, in order to realize a special purpose such as environmental protection or promotion land use suitable to the characteristics of that district, is designated to complement the designation of the use district that it is part of.
Property	Definition
buildingRestrictions	Restrictions on buildings.
otherRestrictions	Restrictions on other structures.

```
<xs:element name="SpecialUseDistrict" type="urf:SpecialUseDistrictType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="SpecialUseDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="buildingRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.7 SpecialUseRestrictionDistrictType, SpecialUseRestrictionDistrict

Object	Definition
SpecialUseRestrictionDistrict	Special use restriction districts, located in districts containing land without a use designation (excluding urbanization control areas), are districts designated to outline the use of special buildings, etc. that require restriction to ensure that reasonable land use in line with the characteristics of the relevant district is implemented in order to develop or maintain a favorable environment.
Property	Definition
buildingRestrictions	Restrictions on buildings.
otherRestrictions	Restrictions on other structures.

```
<xs:element name="SpecialUseRestrictionDistrict" type="urf:SpecialUseRestrictionDistrictType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="SpecialUseRestrictionDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="buildingRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.8 ExceptionalFloorAreaRateDistrictType, ExceptionalFloorAreaRateDistrict

Object	Definition
ExceptionalFloorAreaRateDistrict	Exceptional floor area ratio districts are districts designated to promote high-level land use by utilizing building floor area deemed unused pursuant floor-area ratio limits.
Property	Definition

buildingHeightLimits	Building height limits.
----------------------	-------------------------

```
<xs:element name="ExceptionalFloorAreaRateDistrict" type="urf:ExceptionalFloorAreaRateDistrictType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="ExceptionalFloorAreaRateDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="buildingHeightLimits" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.9 HighRiseResidentialAttractionDistrictType, HighRiseResidentialAttractionDistrict

Object	Definition
HighRiseResidentialAttractionDistrict	High-rise residential attraction districts are districts in which maximum floor area, maximum building coverage ratio and minimum site area of buildings are established in order to make appropriate divisions between residential and non-residential uses and to attract highly-convenient high-rise residential buildings.
Property	Definition
floorAreaRate	Rate of the total floor-area of buildings to the site area.
maximumBuildingCoverageRate	Maximum ratio of the building area to the site area.
minimumSiteArea	Minimum site area for buildings.

```
<xs:element name="HighRiseResidentialAttractionDistrict" type="urf:HighRiseResidentialAttractionDistrictType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="HighRiseResidentialAttractionDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="floorAreaRate" type="xs:double"/>
<xs:element name="maximumBuildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="minimumSiteArea" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.10 HeightControlDistrictType, HeightControlDistrict

Object	Definition
HeightControlDistrict	Height control districts are districts designated within use districts for which maximum or minimum building heights are stipulated in order to maintain the urban environment or to promote enhanced land use.
Property	Definition
maximumBuildingHeight	Maximum building height limits.
minimumBuildingHeight	Minimum building height limits.

```
<xs:element name="HeightControlDistrict" type="urf:HeightControlDistrictType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="HeightControlDistrictType">
```

```

<xs:complexContent>
  <xs:extension base="urf:DistrictsAndZonesType">
    <xs:sequence>
      <xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
      <xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.11 HighLevelUseDistrictType, HighLevelUseDistrict

Object	Definition
HighLevelUseDistrict	High-level usage districts are districts in which maximum and minimum limits on the ratio of the total floor area of buildings to the site area, maximum floor-area ratio, minimum building coverage ratio, minimum building area of buildings, and restrictions on the location of walls are stipulated in order to promote reasonable and sound high-level land use and to renew urban functions in use districts.
Property	Definition
maximumFloorAreaRate	Maximum ratio of the total floor-area of buildings to the site area.
minimumFloorAreaRate	Minimum ratio of the total floor-area of buildings to the site area.
maximumBuildingCoverageRate	Maximum ratio of the building area to the site area.
minimumBuildingArea	Minimum building area of buildings.
setbackSize	Required setback distance from the external wall.

```

<xs:element name="HighLevelUseDistrict" type="urf:HighLevelUseDistrictType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="HighLevelUseDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="maximumFloorAreaRate" type="xs:double" minOccurs="1" maxOccurs="unbounded"/>
        <xs:element name="minimumFloorAreaRate" type="xs:double" minOccurs="1" maxOccurs="unbounded"/>
        <xs:element name="maximumBuildingCoverageRate" type="xs:double" minOccurs="1" maxOccurs="unbounded"/>
        <xs:element name="minimumBuildingArea" type="gml:MeasureType" minOccurs="1" maxOccurs="unbounded"/>
        <xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.12 SpecifiedBlockType, SpecifiedBlock

Object	Definition
SpecifidBlockType	Specified blocks are blocks designated within districts where the improvement and development of blocks will be implemented to promote the renewal of urban areas, and in which the maximum floor-area ratio, building height, and restrictions on the location of walls are stipulated.
Property	Definition
floorAreaRate	Rate of the total floor-area of buildings to the site area.
maximumBuildingHeight	Maximum building height limits.
setbackSize	Minimum required setback distance from the external wall.

```

<xs:element name="SpecifiedBlock" type="urf:SpecifiedBlockType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="SpecifiedBlockType">

```



```

<xs:complexContent>
  <xs:extension base="urf:DistrictsAndZonesType">
    <xs:sequence>
      <xs:element name="floorAreaRate" type="xs:double"/>
      <xs:element name="maximumBuildingHeight" type="gml:LengthType"/>
      <xs:element name="setbackSize" type="gml:StringOrRefType"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.13 SpecialUrbanRenaissanceDistrictType, SpecialUrbanRenaissanceDistrict

Object	Definition
SpecialUrbanRenaissanceDistrict	Special urban renaissance districts.
Property	Definition
useToBeInduced	Use of the district to be induced.
maximumFloorAreaRate	Maximum ratio of the total floor-area of buildings to the site area.
minimumFloorAreaRate	Minimum ratio of the total floor-area of buildings to the site area.
maximumBuildingCoverageRate	Maximum ratio of the building area to the site area.
minimumBuildingArea	Minimum building area of buildings.
maximumBuildingHeight	Maximum building height.
setbackSize	Required setback distance from the external wall.
otherRestrictions	Restrictions on other structures.

```

<xs:complexType name="SpecialUrbanRenaissanceDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="useToBeInduced" type="xs:StringOrRefType"/>
        <xs:element name="maximumFloorAreaRate" type="xs:double"/>
        <xs:element name="minimumFloorAreaRate" type="xs:double"/>
        <xs:element name="maximumBuildingCoverageRate" type="xs:double"/>
        <xs:element name="minimumBuildingArea" type="gml:MeasureType"/>
        <xs:element name="maximumBuildingHeight" type="xs:StringOrRefType"/>
        <xs:element name="setbackSize" type="gml:StringOrRefType"/>
        <xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.14 HousingControlAreaType, HousingControlArea

Object	Definition
HousingControlArea	Areas where residential development should be controlled in order to achieve urban renaissance.

```

<xs:element name="HousingControlArea" type="urf:HousingControlAreaType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="HousingControlAreaType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence />
    </xs:extension>
  </xs:complexContent>

```

```
</xs:complexType>
```

4.2.18.15 ResidentialEnvironmentImprovementDistrictType, ResidentialEnvironmentImprovementDistrict

Object	Definition
ResidentialEnvironmentImprovementDistrict	Areas where it is deemed necessary to guide the construction of buildings with facilities to improve the living environment.
Property	Definition
useToBeInduced	Use of the district to be induced.
maximumFloorAreaRate	Maximum ratio of the total floor-area of buildings to the site area.
maximumBuildingCoverageRate	Maximum ratio of the building area to the site area.
maximumBuildingHeight	Maximum building height.
setbackSize	Required setback distance from the external wall.
otherRestrictions	Restrictions on other structures.

```
<xs:element name="ResidentialEnvironmentImprovementDistrict"
type="urf:ResidentialEnvironmentImprovementDistrictType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="ResidentialEnvironmentImprovementDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="useToBeInduced" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="maximumFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="maximumBuildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="maximumBuildingHeight" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.16 SpetialUseAttractionDistrictType, SpetialUseAttractionDistrict

Object	Definition
SpetialUseAttractionDistrict	Areas where facilities that enhance urban functions are to be induced.
Property	Definition
useToBeInduced	Use of the district to be induced.
maximumFloorAreaRate	Maximum ratio of the total floor-area of buildings to the site area.
minimumFloorAreaRate	Minimum ratio of the total floor-area of buildings to the site area.
minimumBuildingArea	Minimum building area of buildings.
maximumBuildingHeight	Maximum building height.
otherRestrictions	Restrictions on other structures.

```
<xs:element name="SpetialUseAttractionDistrict" type="urf:SpetialUseAttractionDistrictType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="SpetialUseAttractionDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="useToBeInduced" type="gml:StringOrRefType"/>
<xs:element name="maximumFloorAreaRate" type="xs:double"/>
<xs:element name="minimumFloorAreaRate" type="xs:double" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

```

<xs:element name="minimumBuildingArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="maximumBuildingHeight" type="xs:string" minOccurs="0"/>
<xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.17 FirePreventionDistrictType, FirePreventionDistrict

Object	Definition
FirePreventionDistrict	Areas designated as areas to prevent fire hazards in urban areas.

```

<xs:element name="FirePreventionDistrict" type="urf:FirePreventionDistrictType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="FirePreventionDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.18 SpecifiedDisasterPreventionBlockImprovementZoneType, SpecifiedDisasterPreventionBlockImprovementZone

Object	Definition
SpecifiedDisasterPreventionBlockImprovementZone	Districts with restrictions and evacuation roads and parks to prevent the spread of disasters in densely populated urban areas.
Property	Definition
minimumSiteArea	Minimum site area for buildings.
setbackSize	Required setback distance from the external wall.
minimumFrontageRate	Minimum ratio of building frontage to length of lot abutting a street.
minimumBuildingHeightLimits	Minimum building height limits.

```

<xs:element name="SpecifiedDisasterPreventionBlockImprovementZone"
type="urf:SpecifiedDisasterPreventionBlockImprovementZoneType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="SpecifiedDisasterPreventionBlockImprovementZoneType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="minimumSiteArea" type="gml:MeasureType"/>
<xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="minimumFrontageRate" type="xs:double" minOccurs="0"/>
<xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.19 LandscapeZoneType, LandscapeZone

Object	Definition
LandscapeZone	Districts defined in city planning to create a good landscape in the city area.
Property	Definition

buildingDesignRestriction	Restrictions on building design.
maximumBuildingHeight	Maximum building height limits.
minimumBuildingHeight	Minimum building height limits.
setbackSize	Required setback distance from the external wall.
minimumSiteArea	Minimum site area for buildings.

```
<xs:element name="LandscapeZone" type="urf:LandscapeZoneType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="LandscapeZoneType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="buildingDesignRestriction" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="minimumSiteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.20 ScenicDistrictType, ScenicDistrict

Object	Definition
ScenicDistrict	Scenic districts are districts designated to maintain the scenic beauty of cities.
Property	Definition
buildingCoverageRate	Rate of the building area to the site area.
buildingheightLimits	Building height limits.
wallSetbackDistanceWithRoad	Setback distance with road from the wall.
wallSetbackDistanceWithAdjoiningLand	Setback distance with adjoining land from the wall.

```
<xs:element name="ScenicDistrict" type="urf:ScenicDistrictType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="ScenicDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="buildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="buildingHeightLimits" type="gml:LengthType" minOccurs="0"/>
<xs:element name="wallSetbackDistanceWithRoad" type="gml:LengthType" minOccurs="0"/>
<xs:element name="wallSetbackDistanceWithAdjoiningLand" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.21 ParkingPlaceDevelopmentZoneType, ParkingPlaceDevelopmentZone

Object	Definition
ParkingPlaceDevelopmentZone	parking place develoA district in which parking facilities are required to be attached within the district, as defined by city planning in order to reduce automobile traffic congestion.

```
<xs:element name="ParkingPlaceDevelopmentZone" type="urf:ParkingPlaceDevelopmentZoneType"
substitutionGroup="urf:DistrictsAndZones">
```

```

</xs:element>
<xs:complexType name="ParkingPlaceDevelopmentZoneType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType"/>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.22 PortZoneType, PortZone

Object	Definition
PortZone	Districts necessary for the smooth management and operation of the port.
Property	Definition
floorAreaRate	Rate of the total floor-area of buildings to the site area

```

<xs:element name="PortZone" type="urf:PortZoneType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="PortZoneType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="floorAreaRate" type="xs:double" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.23 SpecialZoneForPreservationOfHistoricalLandscapeType, SpecialZoneForPreservationOfHistoricalLandscape

Object	Definition
SpecialZoneForPreservationOfHistoricalLandscape	Areas designated as particularly important for climate preservation, where new construction of houses and other buildings and changes in land form are restricted.

```

<xs:element name="SpecialZoneForPreservationOfHistoricalLandscape"
type="urf:SpecialZoneForPreservationOfHistoricalLandscapeType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="SpecialZoneForPreservationOfHistoricalLandscapeType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.24 ZoneForPreservationOfHistoricalLandscapeType, ZoneForPreservationOfHistoricalLandscape

Object	Definition
ZoneForPreservationOfHistoricalLandscape	Areas where changes to the existing conditions should be strictly controlled and the historic climate should be maintained and preserved as it constitutes an essential part of the historic climate for its preservation.

```

<xs:element name="ZoneForPreservationOfHistoricalLandscape"
type="urf:ZoneForPreservationOfHistoricalLandscapeType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="ZoneForPreservationOfHistoricalLandscapeType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">

```

```

</xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.25 GreenSpaceConservationDistrictType, GreenSpaceConservationDistrict

Object	Definition
GreenSpaceConservationDistrict	Areas of considerable green space that need to be preserved to prevent uncontrolled urbanization and to secure the living environment.

```

<xs:element name="GreenSpaceConservationDistrict" type="urf:GreenSpaceConservationDistrictType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="GreenSpaceConservationDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.26 SpecialGreenSpaceConservationDistrictType, SpecialGreenSpaceConservationDistrict

Object	Definition
SpecialGreenSpaceConservationDistrict	Green areas in the city planning area, such as woodlands, grasslands, and marshes, either alone or in combination with their surroundings, form a favorable natural environment that can be used to prevent uncontrolled urbanization, pollution, and disasters.
Property	Definition
requirement	Designation Requirements.

```

<xs:element name="SpecialGreenSpaceConservationDistrict" type="urf:SpecialGreenSpaceConservationDistrictType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="SpecialGreenSpaceConservationDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="requirement" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>SpecialGreenSpaceConservationDistricts_requirement.xml</xs:documentation>
</xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.27 TreePlantingDistrictType, TreePlantingDistrict

Object	Definition
TreePlantingDistrict	Areas where greening should be promoted on building sites to create a favorable urban environment.
Property	Definition
minimumGreeningRate	Minimum ratio of greening.

```

<xs:element name="TreePlantingDistrict" type="urf:TreePlantingDistrictType"
substitutionGroup="urf:DistrictsAndZones">

```

```

</xs:element>
<xs:complexType name="TreePlantingDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="minimumGreeningRate" type="xs:double" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.28 DistributionBusinessZoneType, DistributionBusinessZone

Object	Definition
DistributionBusinessZone	Districts defined in urban planning to improve distribution functions.
Property	Definition
guidelinePublicationDate	The date when the basic policy for the development of distribution business facilities was established.

```

<xs:element name="DistributionBusinessZone" type="urf:DistributionBusinessZoneType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="DistributionBusinessZoneType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="guidelinePublicationDate" type="xs:date" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.29 ProductiveGreenZoneType, ProductiveGreenZone

Object	Definition
ProductiveGreenZone	Designated agricultural land in an urbanized area that is useful for securing a good living environment and suitable as a site for public facilities, etc.
Property	Definition
zoneNumber	Identification number of the zone.
specification	Designation of specific green space.

```

<xs:element name="ProductiveGreenZone" type="urf:ProductiveGreenZoneType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="ProductiveGreenZoneType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="zoneNumber" type="xs:string" minOccurs="0"/>
        <xs:element name="specification" type="gml:CodeType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>Common_availabilityType.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.30 ConservationZoneForClustersOfTraditionalStructuresType, ConservationZoneForClustersOfTraditionalStructures

Object	Definition
ConservationZoneForClustersOfTraditionalStructures	preservation districts for groups for traditional building.

```

<xs:element name="ConservationZoneForClustersOfTraditionalStructures"
type="urf:ConservationZoneForClustersOfTraditionalStructuresType" substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="ConservationZoneForClustersOfTraditionalStructuresType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.31 AircraftNoiseControlZoneType, AircraftNoiseControlZone

Object	Definition
AircraftNoiseControlZone	Aircraft noise control zones or aircraft noise control special zones.

```

<xs:element name="AircraftNoiseControlZone" type="urf:AircraftNoiseControlZoneType"
substitutionGroup="urf:DistrictsAndZones">
</xs:element>
<xs:complexType name="AircraftNoiseControlZoneType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

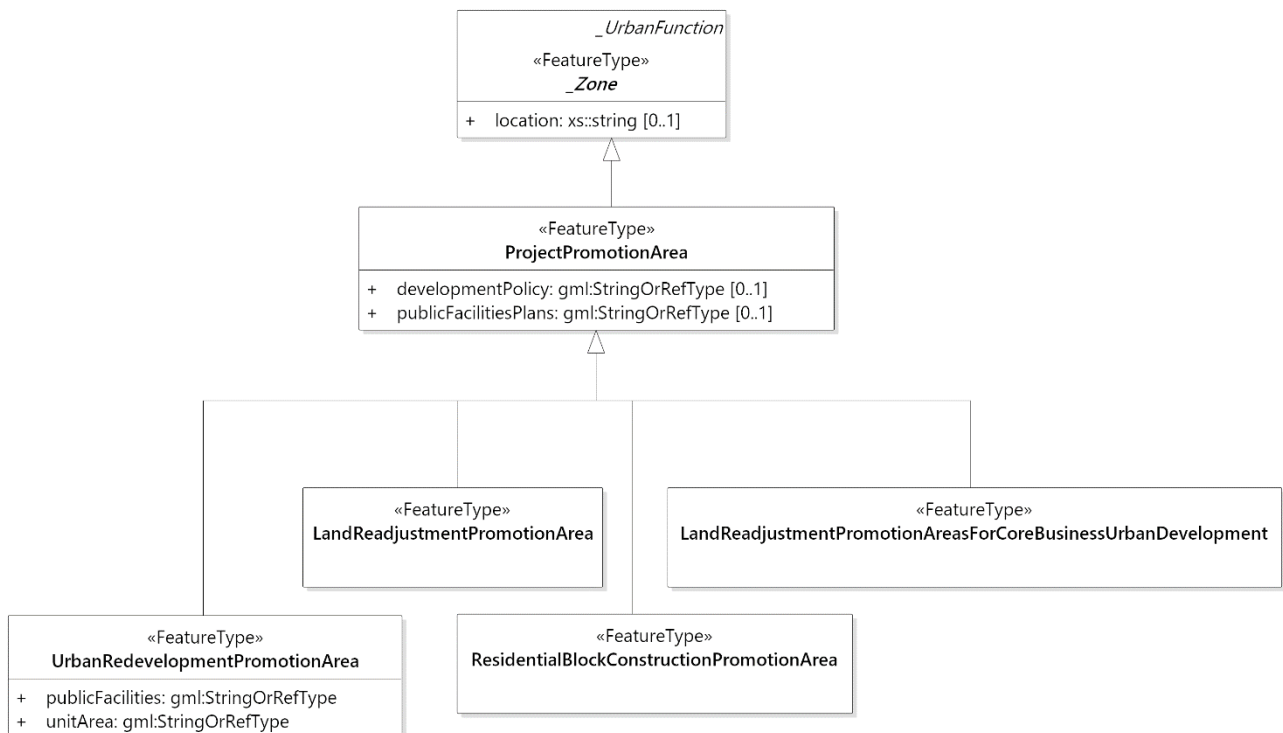


Figure 2-6 UML diagram of Project Promotion Area

4.2.18.32 ProjectPromotionAreaType, ProjectPromotionAreaZone

Object	Definition
ProjectPromotionArea	Areas designated to promote redevelopment of urban areas, etc.
Property	Definition
developmentPolicy	Policies for the development of the promotion area.
publicFacilityPlans	Urban plans for public facilities necessary for the development of the said area.

```
<xs:element name="ProjectPromotionArea" type="urf:ProjectPromotionAreaType" substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="ProjectPromotionAreaType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="developmentPolicy" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="publicFacilitiesPlans" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.33 UrbanRedevelopmentPromotionAreaType, UrbanRedevelopmentPromotionArea

Object	Definition
UrbanRedevelopmentPromotionArea	Promotion area for urban redevelopment.
Property	Definition
publicFacilities	The layout and scale of roads, parks, plazas, and other facilities for public use.
unitArea	The unit of the development zone.

```
<xs:element name="UrbanRedevelopmentPromotionArea" type="urf:UrbanRedevelopmentPromotionAreaType"
substitutionGroup="urf:ProjectPromotionArea">
</xs:element>
<xs:complexType name="UrbanRedevelopmentPromotionAreaType">
<xs:complexContent>
<xs:extension base="urf:ProjectPromotionAreaType">
<xs:sequence>
<xs:element name="publicFacilities" type="gml:StringOrRefType"/>
<xs:element name="unitArea" type="gml:StringOrRefType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.34 LandReadjustmentPromotionAreaType, LandReadjustmentPromotionArea

Object	Definition
LandReadjustmentPromotionArea	Urbanized areas in metropolitan areas that need to be promoted as good residential areas.

```
<xs:element name="LandReadjustmentPromotionArea" type="urf:LandReadjustmentPromotionAreaType"
substitutionGroup="urf:ProjectPromotionArea">
</xs:element>
<xs:complexType name="LandReadjustmentPromotionAreaType">
```

```

<xs:complexContent>
  <xs:extension base="urf:ProjectPromotionAreaType">
    <xs:sequence/>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.35 ResidentialBlockConstructionPromotionAreasType, ResidentialBlockConstructionPromotionAreas

Object	Definition
ResidentialBlockConstructionPromotionAreas	Areas designated to promote the supply of housing and residential land in large urban areas.

```

<xs:element name="ResidentialBlockConstructionPromotionAreas"
type="urf:ResidentialBlockConstructionPromotionAreasType" substitutionGroup="urf:ProjectPromotionArea">
</xs:element>
<xs:complexType name="ResidentialBlockConstructionPromotionAreasType">
  <xs:complexContent>
    <xs:extension base="urf:ProjectPromotionAreaType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.36 LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopmentType, LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopment

Object	Definition
LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopment	Areas designated as "areas where landowners in the area must make efforts to carry out land readjustment projects, etc." for the purpose of promoting urban functions and improving the residential environment in regional hub cities.

```

<xs:element name="LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopment"
type="urf:LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopmentType"
substitutionGroup="urf:ProjectPromotionArea">
</xs:element>
<xs:complexType name="LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopmentType">
  <xs:complexContent>
    <xs:extension base="urf:ProjectPromotionAreaType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

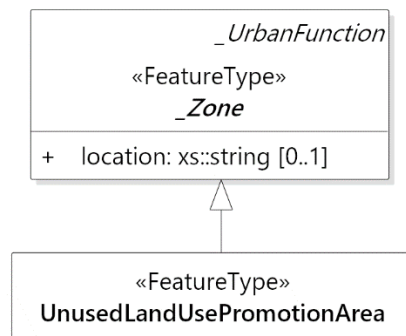


Figure 2-7 UML diagram of Unused Land Use Promotion Area

4.2.18.37 UnusedLandUsePromotionAreaType, UnusedLandUsePromotionArea

Object	Definition
UnusedLandUsePromotionArea	Districts designated by municipalities to promote the effective use of idle land in urbanization areas.

```

<xs:element name="UnusedLandUsePromotionArea" type="urf:UnusedLandUsePromotionAreaType"
substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="UnusedLandUsePromotionAreaType">
<xs:complexContent>
<xs:extension base="urf:ZoneType"/>
</xs:complexContent>
</xs:complexType>

```

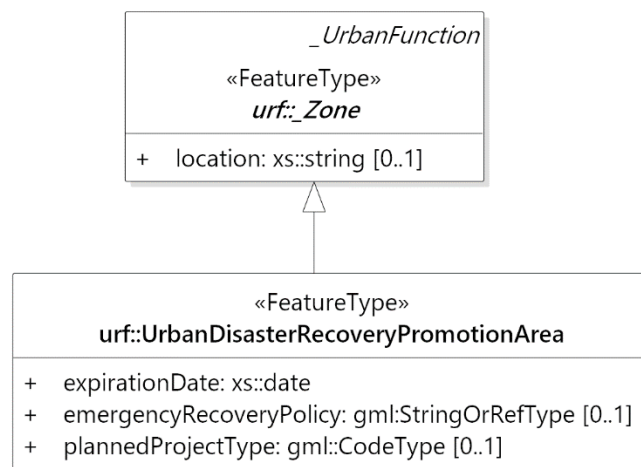


Figure 2-8 UML diagram of Unused Land Use Promotion Area

4.2.18.38 UrbanDisasterRecoveryPromotionAreaType, UrbanDisasterRecoveryPromotionArea

Object	Definition
UrbanDisasterRecoveryPromotionArea	Areas designated to promote the reconstruction of urban areas damaged by large-scale disasters.
Property	Definition
expirationDate	The date of expiration of the period.
emergencyRecoveryPolicy	The policy for the development and improvement of urban areas for urgent and sound recovery.
plannedProjectType	The type of project to be implemented in the area.

```

<xs:element name="UrbanDisasterRecoveryPromotionArea" type="urf:UrbanDisasterRecoveryPromotionAreaType"
substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="UrbanDisasterRecoveryPromotionAreaType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="expirationDate" type="xs:date"/>
<xs:element name="emergencyRecoveryPolicy" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="plannedProjectType" type="gml:CodeType" minOccurs="0"/>
</xs:sequence>
</xs:complexContent>

```

</xs:complexType>

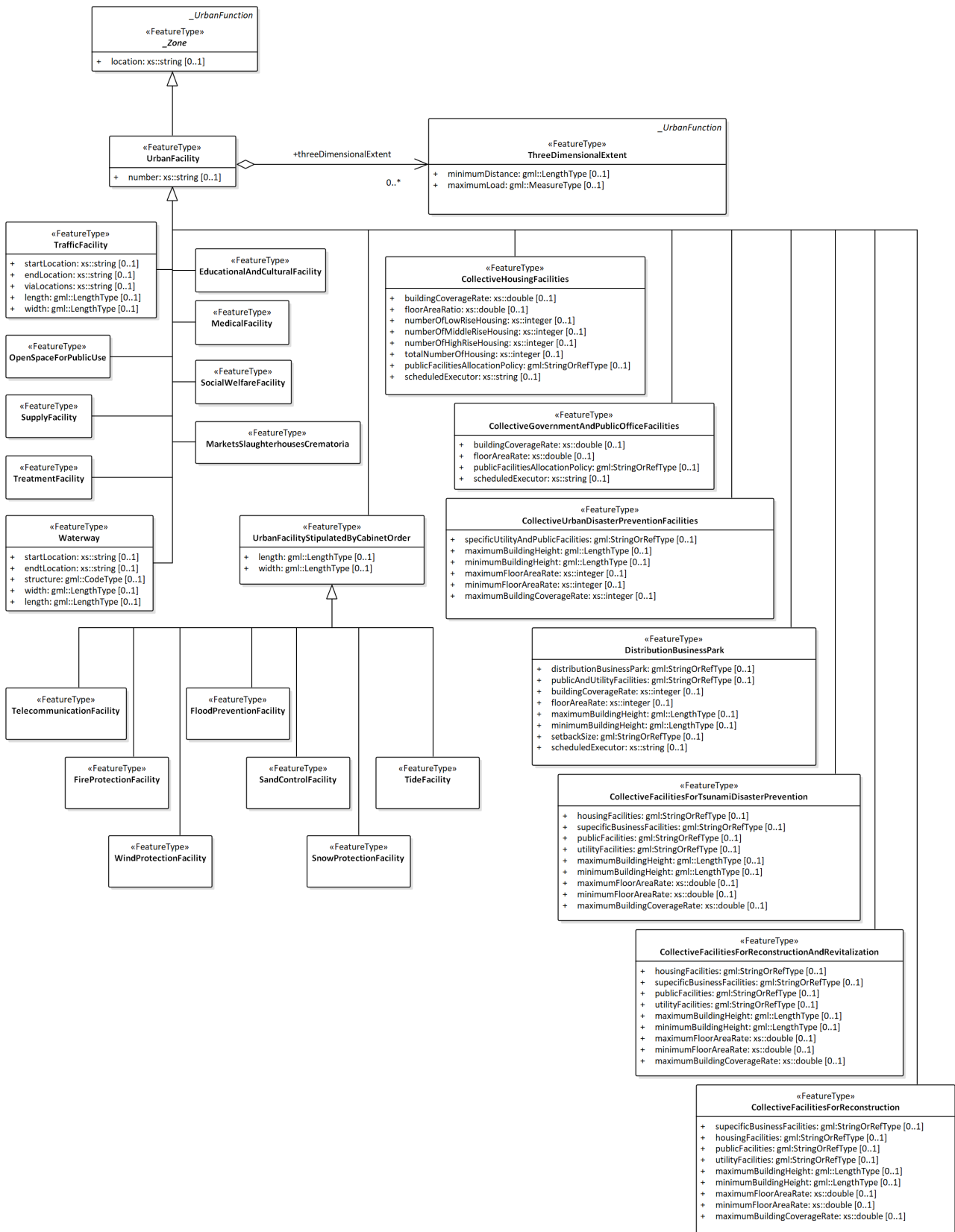


Figure 2-9 UML diagram of Urban Facility

4.2.18.39 UrbanFacilityType, UrbanFacility

Object	Definition
UrbanFacility	Facility that is to be stipulated in a city plan.
Property	Definition
number	Identification number for the urban facility.
threeDimensionalExtent	Three-dimensional extent defined for urban facilities

```
<xs:element name="UrbanFacility" type="urf:UrbanFacilityType" substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="UrbanFacilityType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="number" type="xs:string" minOccurs="0"/>
<xs:element name="threeDimensionalExtent" type="urf:ThreeDimensionalExtentPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.40 TrafficFacilityType, TrafficFacility

Object	Definition
TrafficFacility	Roads, urban rapid-transit railroads, parking places, motor vehicle terminals and other traffic facilities.
Property	Definition
startLocation	Name of the start location.
endLocation	Name of the final location.
viaLocations	Name of the via location.
length	Length of the traffic facility.
width	Width of the traffic facility.
urbanRoadAttribute	Detailed information of road.
urbanRapidTransitRailroadAttribute	Detailed information of urban rapid transit railroad.
parkingAttribute	Detailed information of parking.
vehicleTerminalAttribute	Detailed information of vehicle terminal.

```
<xs:element name="TrafficFacility" type="urf:TrafficFacilityType" substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="TrafficFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="startLocation" type="xs:string" minOccurs="0"/>
<xs:element name="endLocation" type="xs:string" minOccurs="0"/>
<xs:element name="viaLocations" type="xs:string" minOccurs="0"/>
<xs:element name="length" type="gml:LengthType" minOccurs="0"/>
<xs:element name="width" type="gml:LengthType" minOccurs="0"/>
<xs:element name="urbanRoadAttribute" type="urf:UrbanRoadAttributePropertyType" minOccurs="0"/>
<xs:element name="urbanRapidTransitRailroadAttribute"
type="urf:UrbanRapidTransitRailroadAttributePropertyType" minOccurs="0"/>
<xs:element name="parkingPlaceAttribute" type="urf:ParkingPlaceAttributePropertyType" minOccurs="0"/>
<xs:element name="vehicleTerminalAttribute" type="urf:VehicleTerminalAttributePropertyType" minOccurs="0"/>
</xs:sequence>
```

```

</xs:extension>
</xs:complexContent>
</xs:complexType>

```

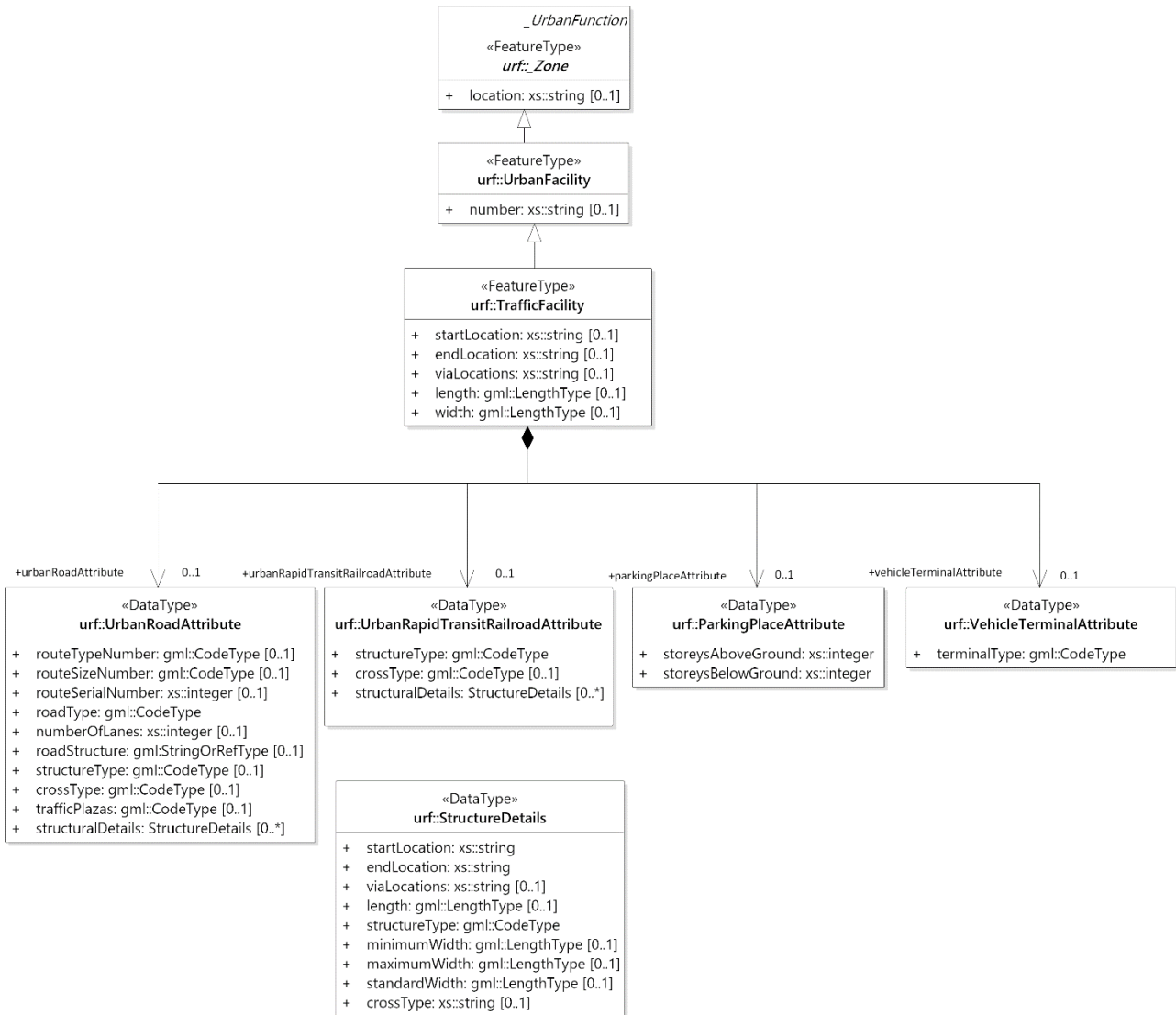


Figure 2-10 UML diagram of Traffic Facility Attributes

4.2.18.41 UrbanRoadAttributeType, UrbanRoadAttribute

Type	Definition
UrbanRoadAttribute	The most fundamental urban facility for urban transportation, which ensures Roads that have been decided in accordance with city planning.
Property	Definition
routeTypeNumber	The first of a tuple of three numbers that assigned to a city planning road.
routeSizeNumber	The second of a tuple of three numbers that assigned to a city planning road.
routeSerialNumber	The third of a tuple of three numbers that assigned to a city planning road.
roadType	Classification assigned according to the function required of the urban planning road.
numberOfLanes	Number of lanes.
roadStructure	Description of the road structure.
structureType	Structure type of the urban planning road.

crossType	Structure type of crossing.
trafficPlazas	Availability of traffic plazas.
structuralDetails	Detailed information on road structure.

```

<xs:element name="UrbanRoadAttribute" type="urf:UrbanRoadAttributeType">
</xs:element>
<xs:complexType name="UrbanRoadAttributeType">
<xs:sequence>
<xs:element name="routeTypeNumber" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>UrbanRoad_routeTypeNumber.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="routeSizeNumber" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>UrbanRoad_routeSizeNumber.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="routeSerialNumber" type="xs:integer" minOccurs="0"/>
<xs:element name="roadType" type="gml:CodeType"/>
<xs:element name="numberOfLanes" type="xs:integer"/>
<xs:element name="roadStructure" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="structureType" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>TransportationFacility_structureType.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="crossType" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>TransportationFacility_crossType.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="trafficPlazas" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>Common_availabilityType.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="structuralDetails" type="urf:StructureDetailsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>

```

4.2.18.42 UrbanRapidTransitRailroadAttributeType, UrbanRapidTransitRailroadAttribute

Type	Definition
UrbanRapidTransitRailroadAttribute	One of the urban traffic facilities stipulated in the City Planning Law, public transportation plays an important role in activities in the city, such as subways, urban monorails, and new transit systems.
Property	Definition
structureType	Structure type of the urban planning road.
crossType	Structure type of crossing.
structuralDetails	Detailed information on road structure.

```

<xs:element name="UrbanRapidTransitRailroadAttribute" type="urf:UrbanRapidTransitRailroadAttributeType">
</xs:element>
<xs:complexType name="UrbanRapidTransitRailroadAttributeType">
<xs:sequence>
<xs:element name="structureType" type="gml:CodeType" minOccurs="0">

```

```

<xs:annotation>
<xs:documentation>TransportationFacility_structureType.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="crossType" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>TransportationFacility_crossType.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="structuralDetails" type="urf:StructureDetailsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>

```

4.2.18.43 StructureDetailsType, StructureDetails

Type	Definition
StructureDetails	Data type to describe the structure of each section of urban planning road and urban rapid transit railroad.
Property	Definition
startLocation	Name of the start location.
endLocation	Name of the final location.
viaLocations	Name of the via location.
length	Length of the the section.
structureType	Structure type of the section.
minimumWidth	Minimum width.
maximumWidth	Maximum width.
standardWidth	Standard width of the road set according to the road size.
crossType	Structure type of crossing.

```

<xs:element name="StructureDetails" type="urf:StructureDetailsType">
</xs:element>
<xs:complexType name="StructureDetailsType">
<xs:sequence>
<xs:element name="startLocation" type="xs:string" minOccurs="0"/>
<xs:element name="endLocation" type="xs:string" minOccurs="0"/>
<xs:element name="viaLocations" type="xs:string" minOccurs="0"/>
<xs:element name="length" type="gml:LengthType" minOccurs="0"/>
<xs:element name="structureType" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>TransportationFacility_structureType.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="minimumWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maximumWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="standardWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="crossType" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>TransportationFacility_crossType.xml</xs:documentation>
</xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>

```

4.2.18.44 ParkingPlaceAttributeType, ParkingPlaceAttribute

Type	Definition
------	------------

ParkingPlaceAttribute	Parking spaces provided for in city plans to be permanently reserved for general public use.
Property	Definition
storeysAboveGround	Number of floors above ground for the parking.
storeysBelowGround	Number of floors below ground for the parking.

```
<xs:element name="ParkingPlaceAttribute" type="urf:ParkingPlaceAttributeType">
</xs:element>
<xs:complexType name="ParkingPlaceAttributeType">
<xs:sequence>
<xs:element name="storeysAboveGround" type="xs:integer" minOccurs="0"/>
<xs:element name="storeysBelowGround" type="xs:integer" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
```

4.2.18.45 VehicleTerminalAttributeType, VehicleTerminalAttribute

Type	Definition
VehicleTerminalAttribute	Vehicle terminals as defined in urban planning.
Property	Definition
terminalType	The use of the vehicle terminal.

```
<xs:element name="VehicleTerminalAttribute" type="urf:VehicleTerminalAttributeType">
</xs:element>
<xs:complexType name="VehicleTerminalAttributeType">
<xs:sequence>
<xs:element name="terminalType" type="gml:CodeType"/>
</xs:sequence>
</xs:complexType>
```

4.2.18.46 OpenSpaceForPublicUseType, OpenSpaceForPublicUse

Object	Definition
OpenSpaceForPublicUse	Public open space that mainly has a natural environment and is used for environmental preservation, pollution mitigation, disaster prevention, landscape improvement, and greenways.
Property	Definition
parkAttribute	Detailed information for urban park.

```
<xs:element name="OpenSpaceForPublicUse" type="urf:OpenSpaceForPublicUseType"
substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="OpenSpaceForPublicUseType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="parkAttribute" type="urf:ParkAttributePropertyType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

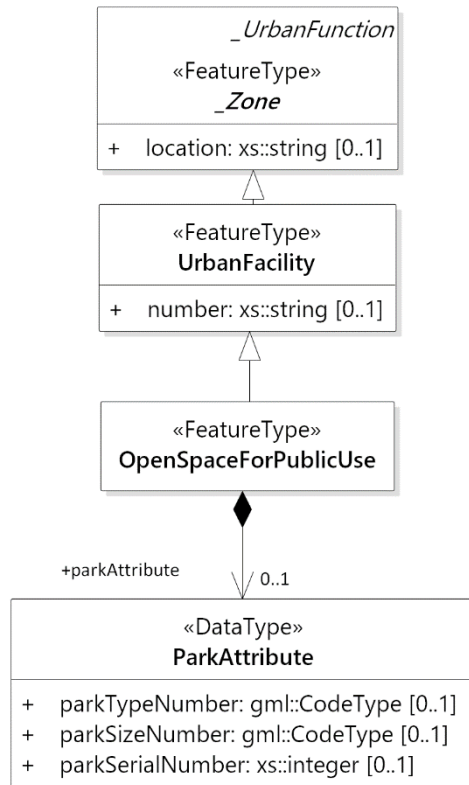


Figure 2-11 UML diagram of Open space for public use

4.2.18.47 ParkAttributeType, ParkAttribute

Type	Definition
ParkAttribute	Detailed information on urban planning park.
Property	Definition
parkTypeNumber	The first of a tuple of three numbers that assigned to a city planning park.
parkSizeNumber	The second of a tuple of three numbers that assigned to a city planning park.
parkSerialNumber	The third of a tuple of three numbers that assigned to a city planning park.

```

<xs:element name="ParkAttribute" type="urf:ParkAttributeType">
</xs:element>
<xs:complexType name="ParkAttributeType">
<xs:sequence>
<xs:element name="parkTypeNumber" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>Park_parkTypeNumber.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="parkSizeNumber" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>Park_parkSizeNumber.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="parkSerialNumber" type="xs:integer" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
  
```

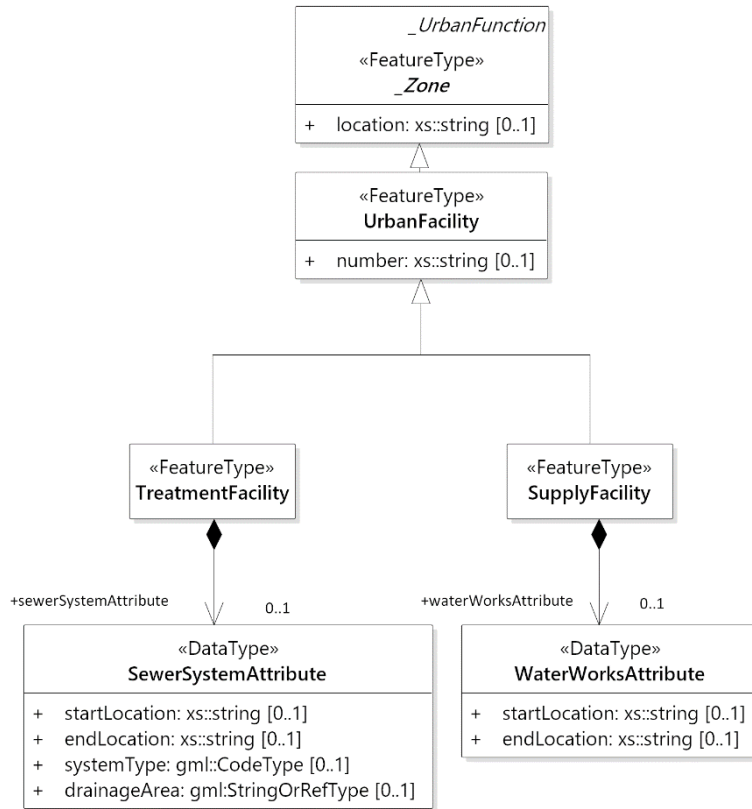


Figure 2-12 UML diagram of Treatment facility and Supply facility

4.2.18.48 SupplyFacilityType, SupplyFacility

Object	Definition
SupplyFacility	Waterworks, electricity supply facilities, gas supply facilities, and other supply facilities stipulated as necessary in city plans.
Property	Definition
waterWorksAttribute	Detailed information for urban water works.

```

<xs:element name="SupplyFacility" type="urf:SupplyFacilityType" substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="SupplyFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="waterWorksAttribute" type="urf:WaterWorksAttributePropertyType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
  
```

4.2.18.49 TreatmentFacilityType, TreatmentFacility

Object	Definition
TreatmentFacility	Sewerage systems, wastewater treatment facilities, garbage incinerators, and other treatment facilities stipulated as necessary in city plans.
Property	Definition
sewerSystemsAttribute	Detailed information for urban sewerage systems.

```

<xs:element name="TreatmentFacility" type="urf:TreatmentFacilityType" substitutionGroup="urf:UrbanFacility">
  
```

```

</xs:element>
<xs:complexType name="TreatmentFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="sewerSystemsAttribute" type="urf:SewerSystemAttributePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.50 WaterWorksAttributeType, WaterWorksAttribute

Object	Definition
WaterWorksAttribute	Detailed information on water works.
Property	Definition
startLocation	Name of the start location.
endLocation	Name of the final location.

```

<xs:element name="WaterWorksAttribute" type="urf:WaterWorksAttributeType">
</xs:element>
<xs:complexType name="WaterWorksAttributeType">
  <xs:sequence>
    <xs:element name="startLocation" type="xs:string" minOccurs="0"/>
    <xs:element name="endLocation" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

4.2.18.51 SewerSystemAttributeType, SewerSystemAttribute

Object	Definition
ParkAttribute	Detailed information on urban planning park.
Property	Definition
startLocation	Name of the start location.
endLocation	Name of the final location.
systemType	Type of sewer systems.
drainageArea	Description of sewer drainage area.

```

<xs:element name="SewerSystemAttribute" type="urf:SewerSystemAttributeType">
</xs:element>
<xs:complexType name="SewerSystemAttributeType">
  <xs:sequence>
    <xs:element name="startLocation" type="xs:string" minOccurs="0"/>
    <xs:element name="endLocation" type="xs:string" minOccurs="0"/>
    <xs:element name="systemType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="drainageArea" type="gml:StringOrRefType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```

4.2.18.52 WaterwayType, Waterway

Object	Definition
Waterway	Rivers, canals, and other waterways stipulated as necessary in city plans.
Property	Definition
startLocation	Name of the start location.
endLocation	Name of the final location.
structure	Type of waterway structure.

width	Width of the waterway.
length	Length of the waterway,

```

<xs:element name="Waterway" type="urf:WaterwayType" substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="WaterwayType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="startLocation" type="xs:string" minOccurs="0"/>
<xs:element name="endLocation" type="xs:string" minOccurs="0"/>
<xs:element name="structure" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>Waterway_structure.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="width" type="gml:LengthType" minOccurs="0"/>
<xs:element name="length" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.53 EducationalAndCulturalFacilityType, EducationalAndCulturalFacility

Object	Definition
EducationalAndCulturalFacility	Schools, libraries, research facilities, and other educational and cultural facilities stipulated as necessary in city plans.

```

<xs:element name="EducationalAndCulturalFacility" type="urf:EducationalAndCulturalFacilityType"
substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="EducationalAndCulturalFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType"/>
</xs:complexContent>
</xs:complexType>

```

4.2.18.54 MedicalFacilityType, MedicalFacility

Object	Definition
MedicalFacility	Hospitals and other medical facilities stipulated as necessary in city plans.

```

<xs:element name="MedicalFacility" type="urf:MedicalFacilityType" substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="MedicalFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType"/>
</xs:complexContent>
</xs:complexType>

```

4.2.18.55 SocialWelfareFacilityType, SocialWelfareFacility

Object	Definition
SocialWelfareFacility	Nursery schools and other social welfare facilities stipulated as necessary in city plans.

```

<xs:element name="SocialWelfareFacility" type="urf:SocialWelfareFacilityType" substitutionGroup="urf:UrbanFacility">
</xs:element>

```

```

<xs:complexType name="SocialWelfareFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType" />
  </xs:complexContent>
</xs:complexType>

```

4.2.18.56 MarketsSlaughterhousesCrematoriaType, MarketsSlaughterhousesCrematoria

Object	Definition
MarketsSlaughterhousesCrematoria	Markets, slaughterhouses, and crematoria stipulated as necessary in city plans.

```

<xs:element name="MarketsSlaughterhousesCrematoria" type="urf:MarketsSlaughterhousesCrematoriaType"
substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="MarketsSlaughterhousesCrematoriaType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType" />
  </xs:complexContent>
</xs:complexType>

```

4.2.18.57 CollectiveHousingFacilitiesType, CollectiveHousingFacilities

Object	Definition
CollectiveHousingFacilities	Collective housing facilities (meaning collective housing facilities with 50 or more dwellings per estate, attached roads and other facilities).
Property	Definition
buildingCoverageRate	Rate of the building area to the site area.
floorAreaRate	Rate of the total floor-area of buildings to the site area.
numberOfLowRiseHousing	Number of low rise housing in the area.
numberOfMiddleRiseHousing	Number of middle rise housing in the area.
numberOfHighRiseHousing	Number of high rise housing in the area.
totalNumberOfHousing	Total number of housing in the area.
publicFacilitiesAllocationPolicy	Policy for public facilities allocation.
scheduledExcutor	Scheduled executors of city planning projects for the urban facilities.

```

<xs:element name="CollectiveHousingFacilities" type="urf:CollectiveHousingFacilitiesType"
substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="CollectiveHousingFacilitiesType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="buildingCoverageRate" type="xs:double" minOccurs="0" />
        <xs:element name="floorAreaRate" type="xs:double" minOccurs="0" />
        <xs:element name="numberOfLowRiseHousing" type="xs:integer" minOccurs="0" />
        <xs:element name="numberOfMiddleRiseHousing" type="xs:integer" minOccurs="0" />
        <xs:element name="numberOfHighRiseHousing" type="xs:integer" minOccurs="0" />
        <xs:element name="totalNumberOfHousing" type="xs:integer" minOccurs="0" />
        <xs:element name="publicFacilitiesAllocationPolicy" type="gml:StringOrRefType" minOccurs="0" />
        <xs:element name="scheduledExcutor" type="xs:string" minOccurs="0" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.58 CollectiveGovernmentAndPublicOfficeFacilitiesType, CollectiveGovernmentAndPublicOfficeFacilities

Object	Definition
CollectiveGovernmentAndPublicOfficeFacilities	collective government and public office facilities (meaning national or local government buildings and attached roads and other facilities).
Property	Definition
buildingCoverageRate	Rate of the building area to the site area.
floorAreaRate	Rate of the total floor-area of buildings to the site area.
publicFacilitiesAllocationPolicy	Policy for public facilities allocation.
scheduledExcutor	Scheduled executors of city planning projects for the urban facilities.

```
<xs:element name="CollectiveGovernmentAndPublicOfficeFacilities"
type="urf:CollectiveGovernmentAndPublicOfficeFacilitiesType" substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="CollectiveGovernmentAndPublicOfficeFacilitiesType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="buildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="floorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="publicFacilitiesAllocationPolicy" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="scheduledExcutor" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.59 DistributionBusinessParkType, DistributionBusinessPark

Object	Definition
DistributionBusinessPark	An aggregation of various distribution-related facilities, such as wholesale stores, truck terminals, warehouses, and wholesale markets.
Property	Definition
distributionBusinessPark	Location and scale of the distribution business park.
publicAndUtilityFacilities	Location and scale of the public and utility facilities
buildingCoverageRate	Rate of the building area to the site area.
floorAreaRate	Rate of the total floor-area of buildings to the site area.
maximumBuildingHeight	Maximum building height limits.
minimumBuildingHeight	Minimum building height limits.
setbackSize	Required setback distance from the external wall.
scheduledExcutor	Scheduled executors of city planning projects for the urban facilities.

```
<xs:element name="DistributionBusinessPark" type="urf:DistributionBusinessParkType"
substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="DistributionBusinessParkType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="distributionBusinessPark" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="publicAndUtilityFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="buildingCoverageRate" type="xs:double" minOccurs="0"/>
<xs:element name="floorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

```

<xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="scheduledExcutor" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.60 CollectiveFacilitiesForTsunamiDisasterPreventionType, CollectiveFacilitiesForTsunamiDisasterPrevention

Object	Definition
CollectiveFacilitiesForTsunamiDisasterPrevention	Collective facilities for tsunami disaster prevention.
Property	Definition
housingFacilities	Location and scale of housing facilities.
supecificBusinessFacilities	Location and scale of specific business facilities.
publicFacilities	Location and scale of public facilities.
utilityFacilities	Location and scale of utility facilities.
maximumBuildingHeight	Maximum building height limits.
minimumBuildingHeight	Minimum building height limits.
maximumFloorAreaRate	Maximum ratio of the total floor-area of buildings to the site area.
minimumFloorAreaRate	Minimum ratio of the total floor-area of buildings to the site area.
maximumBuildingCoverageRate	Maximum ratio of the building area to the site area.

```

<xs:element name="CollectiveFacilitiesForTsunamiDisasterPrevention"
type="urf:CollectiveFacilitiesForTsunamiDisasterPreventionType" substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="CollectiveFacilitiesForTsunamiDisasterPreventionType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="housingFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="supecificBusinessFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="publicFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="utilityFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maximumFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="minimumFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="maximumBuildingCoverageRate" type="xs:double" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.61 CollectiveFacilitiesForReconstructionAndRevitalizationType, CollectiveFacilitiesForReconstructionAndRevitalization

Object	Definition
CollectiveFacilitiesForReconstructionAndRevitalization	Collective facilities (Residential facilities, specified business facilities, specified public facilities, and specified public facilities) that form an urban area for reconstruction and revitalization.
Property	Definition
housingFacilities	Location and scale of housing facilities.
supecificBusinessFacilities	Location and scale of specific business facilities.

publicFacilities	Location and scale of public facilities.
utilityFacilities	Location and scale of utility facilities.
maximumBuildingHeight	Maximum building height limits.
minimumBuildingHeight	Minimum building height limits.
maximumFloorAreaRate	Maximum ratio of the total floor-area of buildings to the site area.
minimumFloorAreaRate	Minimum ratio of the total floor-area of buildings to the site area.
maximumBuildingCoverageRate	Maximum ratio of the building area to the site area.

```

<xs:element name="CollectiveFacilitiesForReconstructionAndRevitalization"
type="urf:CollectiveFacilitiesForReconstructionAndRevitalizationType" substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="CollectiveFacilitiesForReconstructionAndRevitalizationType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="housingFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="supecificBusinessFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="publicFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="utilityFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maximumFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="minimumFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="maximumBuildingCoverageRate" type="xs:double" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.62 CollectiveFacilitiesForReconstructionType, CollectiveFacilitiesForReconstruction

Object	Definition
CollectiveFacilitiesForReconstruction	Collective facilities (Residential facilities, specified business facilities, specified public facilities, and specified public facilities) that form an urban area for reconstruction.
Property	Definition
housingFacilities	Location and scale of housing facilities.
supecificBusinessFacilities	Location and scale of specific business facilities.
publicFacilities	Location and scale of public facilities.
utilityFacilities	Location and scale of utility facilities.
maximumBuildingHeight	Maximum building height limits.
minimumBuildingHeight	Minimum building height limits.
maximumFloorAreaRate	Maximum ratio of the total floor-area of buildings to the site area.
minimumFloorAreaRate	Minimum ratio of the total floor-area of buildings to the site area.
maximumBuildingCoverageRate	Maximum ratio of the building area to the site area.

```

<xs:element name="CollectiveFacilitiesForReconstruction" type="urf:CollectiveFacilitiesForReconstructionType"
substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="CollectiveFacilitiesForReconstructionType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>

```

```

<xs:element name="housingFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="specificBusinessFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="publicFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="utilityFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maximumFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="minimumFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="maximumBuildingCoverageRate" type="xs:double" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.63 CollectiveUrbanDisasterPreventionFacilitiesType, CollectiveUrbanDisasterPreventionFacilities

Object	Definition
CollectiveUrbanDisasterPreventionFacilities	Collective facilities for disaster prevention in urban area.
Property	Definition
specificUtilityAndPublicFacilities	Location and scale of specific utility and public facilities.
maximumBuildingHeight	Maximum building height limits.
minimumBuildingHeight	Minimum building height limits.
maximumFloorAreaRate	Maximum ratio of the total floor-area of buildings to the site area.
minimumFloorAreaRate	Minimum ratio of the total floor-area of buildings to the site area.
maximumBuildingCoverageRate	Maximum ratio of the building area to the site area.

```

<xs:element name="CollectiveUrbanDisasterPreventionFacilities"
type="urf:CollectiveUrbanDisasterPreventionFacilitiesType" substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="CollectiveUrbanDisasterPreventionFacilitiesType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="specificUtilityAndPublicFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maximumFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="minimumFloorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="maximumBuildingCoverageRate" type="xs:double" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.64 UrbanFacilityStipulatedByCabinetOrderType, UrbanFacilityStipulatedByCabinetOrder

Object	Definition
UrbanFacilityStipulatedByCabinetOrder	Other urban facilities at stipulated by Cabinet Order.
Property	Definition
length	Length of the facility.
width	Width of the facility.

```

<xs:element name="UrbanFacilityStipulatedByCabinetOrder" type="urf:UrbanFacilityStipulatedByCabinetOrderType"
substitutionGroup="urf:UrbanFacility">
</xs:element>
<xs:complexType name="UrbanFacilityStipulatedByCabinetOrderType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="length" type="gml:LengthType" minOccurs="0"/>
<xs:element name="width" type="gml:LengthType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.65 TelecommunicationFacilityType, TelecommunicationFacility

Object	Definition
TelecommunicationFacility	Telecommunication facility stipulated as necessary in city plans.

```

<xs:element name="TelecommunicationFacility" type="urf:TelecommunicationFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
</xs:element>
<xs:complexType name="TelecommunicationFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
</xs:complexContent>
</xs:complexType>

```

4.2.18.66 WindProtectionFacilityType, WindProtectionFacility

Object	Definition
WindProtectionFacility	Wind protection facility stipulated as necessary in city plans.

```

<xs:element name="WindProtectionFacility" type="urf:WindProtectionFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
</xs:element>
<xs:complexType name="WindProtectionFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
</xs:complexContent>
</xs:complexType>

```

4.2.18.67 FireProtectionFacilityType, FireProtectionFacility

Object	Definition
FireProtectionFacility	Fire prevention facility stipulated as necessary in city plans.

```

<xs:element name="FireProtectionFacility" type="urf:FireProtectionFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
</xs:element>
<xs:complexType name="FireProtectionFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
</xs:complexContent>
</xs:complexType>

```

4.2.18.68 FloodPreventionFacilityType, FloodPreventionFacility

Object	Definition
--------	------------

FloodPreventionFacility	Flood prevention facility stipulated as necessary in city plans.
-------------------------	--

```
<xs:element name="FloodPreventionFacility" type="urf:FloodPreventionFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
</xs:element>
<xs:complexType name="FloodPreventionFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
</xs:complexContent>
</xs:complexType>
```

4.2.18.69 SnowProtectionFacilityType, SnowProtectionFacility

Object	Definition
SnowProtectionFacility	Snow protection facility stipulated as necessary in city plans.

```
<xs:element name="SnowProtectionFacility" type="urf:SnowProtectionFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
</xs:element>
<xs:complexType name="SnowProtectionFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
</xs:complexContent>
</xs:complexType>
```

4.2.18.70 SandControlFacilityType, SandControlFacility

Object	Definition
SandControlFacility	Sand control facility stipulated as necessary in city plans.

```
<xs:element name="SandControlFacility" type="urf:SandControlFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
</xs:element>
<xs:complexType name="SandControlFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
</xs:complexContent>
```

4.2.18.71 TideFacilityType, TideFacility

Object	Definition
TideFacility	Tide facility stipulated as necessary in city plans.

```
<xs:element name="TideFacility" type="urf:TideFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
</xs:element>
<xs:complexType name="TideFacilityType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
</xs:complexContent>
</xs:complexType>
```

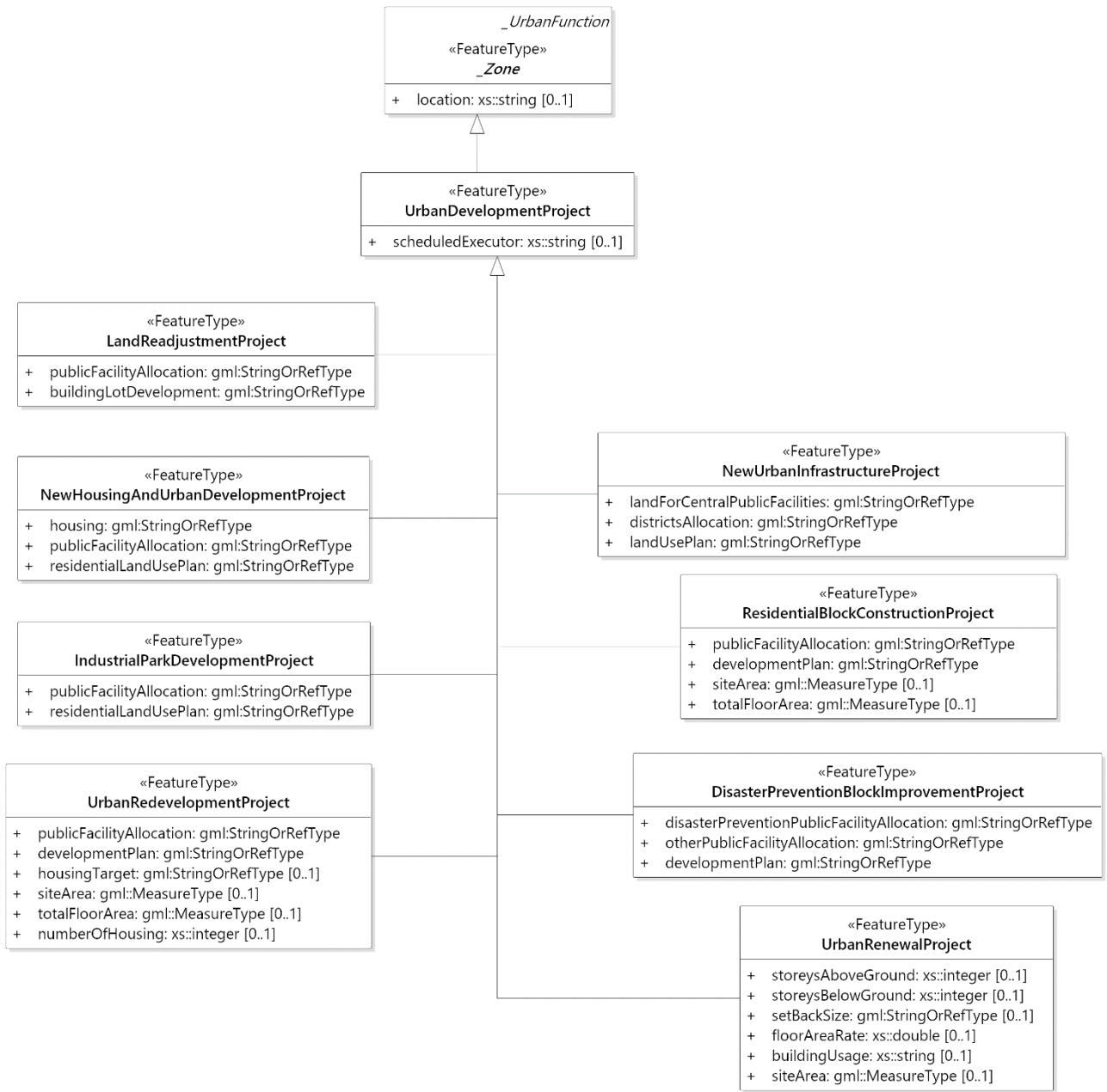


Figure 2-13 UML diagram of Urban development projects

4.2.18.72 UrbanDevelopmentProjectType, UrbanDevelopmentProject

Object	Definition
UrbanDevelopmentProject	Urban development project to newly develop or redevelop certain areas based on a comprehensive plan.
Property	Definition
scheduledExcutor	Scheduled executors of city planning projects.

```

<xs:element name="UrbanDevelopmentProject" type="urf:UrbanDevelopmentProjectType"
substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="UrbanDevelopmentProjectType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>

```

```

<xs:element name="scheduledExcutor" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.73 LandReadjustmentProjectType, LandReadjustmentProject

Object	Definition
LandReadjustmentProject	Land readjustment projects provided for in the Land Readjustment Act.
Property	Definition
publicFacilityAllocation	Location of public facilities.
buildingLotDevelopment	Matters concerning buiding lots.

```

<xs:element name="LandReadjustmentProject" type="urf:LandReadjustmentProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
</xs:element>
<xs:complexType name="LandReadjustmentProjectType">
<xs:complexContent>
<xs:extension base="urf:UrbanDevelopmentProjectType">
<xs:sequence>
<xs:element name="publicFacilityAllocation" type="gml:StringOrRefType"/>
<xs:element name="buildingLotDevelopment" type="gml:StringOrRefType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.74 NewHousingAndUrbanDevelopmentProjectType, NewHousingAndUrbanDevelopmentProject

Object	Definition
NewHousingAndUrbanDevelopmentProject	New housing and urban development projects provided for in the New Housing and Urban Development Act.
Property	Definition
housing	Location of housing units.
publicFacilityAllocation	Location of public facilities.
residentialLandUsePlan	Land use plan for residential area.

```

<xs:element name="NewHousingAndUrbanDevelopmentProject"
type="urf:NewHousingAndUrbanDevelopmentProjectType" substitutionGroup="urf:UrbanDevelopmentProject">
</xs:element>
<xs:complexType name="NewHousingAndUrbanDevelopmentProjectType">
<xs:complexContent>
<xs:extension base="urf:UrbanDevelopmentProjectType">
<xs:sequence>
<xs:element name="housing" type="gml:StringOrRefType"/>
<xs:element name="publicFacilityAllocation" type="gml:StringOrRefType"/>
<xs:element name="residentialLandUsePlan" type="gml:StringOrRefType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.75 IndustrialParkDevelopmentProjectType, IndustrialParkDevelopmentProject

Object	Definition
--------	------------

IndustrialParkDevelopmentProject	Industrial park development projects provided for in the Act Concerning the Development of the Suburban Consolidation Zone and Urban Development Zones of the National Capital Region (Act No. 98 of 1958) and industrial park development projects provided for in the Act Concerning the Development of the Suburban Consolidation Zone and Urban Development Zones of the Kinki Region.
Property	Definition
publicFacilityAllocation	Location of public facilities.
residentialLandUsePlan	Land use plan for residential area.

```

<xs:element name="IndustrialParkDevelopmentProject" type="urf:IndustrialParkDevelopmentProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
</xs:element>
<xs:complexType name="IndustrialParkDevelopmentProjectType">
<xs:complexContent>
<xs:extension base="urf:UrbanDevelopmentProjectType">
<xs:sequence>
<xs:element name="publicFacilityAllocation" type="gml:StringOrRefType"/>
<xs:element name="residentialLandUsePlan" type="gml:StringOrRefType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.76 UrbanRedevelopmentProjectType, UrbanRedevelopmentProject

Object	Definition
UrbanRedevelopmentProject	Urban redevelopment projects provided for in the Urban Renewal Act.
Property	Definition
publicFacilityAllocation	Location and scale of public facilities.
developmentPlan	Development plan for the project.
housingTarget	Housing construction goals.
siteArea	Area of the project area.
totalFloorArea	Total floor area.
numberOfHousing	Number of housings to be constructed in the project.

```

<xs:element name="UrbanRedevelopmentProject" type="urf:UrbanRedevelopmentProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
</xs:element>
<xs:complexType name="UrbanRedevelopmentProjectType">
<xs:complexContent>
<xs:extension base="urf:UrbanDevelopmentProjectType">
<xs:sequence>
<xs:element name="publicFacilityAllocation" type="gml:StringOrRefType"/>
<xs:element name="developmentPlan" type="gml:StringOrRefType"/>
<xs:element name="housingTarget" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="siteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="numberOfHousing" type="xs:integer" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.77 NewUrbanInfrastructureProjectType, NewUrbanInfrastructureProject

Object	Definition
---------------	-------------------

NewUrbanInfrastructureProject	New urban infrastructure projects provided for in the New Urban Infrastructure Act.
Property	Definition
landForCentralPublicFacilities	Areas for central public facilities.
districtsAllocation	Location and scale of districts that promote development.
landUsePlan	Land use plan for the districts that promote development.

```

<xs:element name="NewUrbanInfrastructureProject" type="urf:NewUrbanInfrastructureProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
</xs:element>
<xs:complexType name="NewUrbanInfrastructureProjectType">
<xs:complexContent>
<xs:extension base="urf:UrbanDevelopmentProjectType">
<xs:sequence>
<xs:element name="landForCentralPublicFacilities" type="gml:StringOrRefType"/>
<xs:element name="districtsAllocation" type="gml:StringOrRefType"/>
<xs:element name="landUsePlan" type="gml:StringOrRefType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.78 ResidentialBlockConstructionProjectType, ResidentialBlockConstructionProject

Object	Definition
ResidentialBlockConstructionProject	Residential-block construction projects provided for in the Act on Special Measures Concerning the Promotion of Housing and Residential Land Supply in Major Urban Areas.
Property	Definition
publicFacilityAllocation	Location of public facilities.
developmentPlan	Development plan for the project.
siteArea	Area of the project area.
totalFloorArea	Total floor area.

```

<xs:element name="ResidentialBlockConstructionProject" type="urf:ResidentialBlockConstructionProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
</xs:element>
<xs:complexType name="ResidentialBlockConstructionProjectType">
<xs:complexContent>
<xs:extension base="urf:UrbanDevelopmentProjectType">
<xs:sequence>
<xs:element name="publicFacilityAllocation" type="gml:StringOrRefType"/>
<xs:element name="developmentPlan" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="siteArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.79 DisasterPreventionBlockImprovementProjectType, DisasterPreventionBlockImprovementProject

Object	Definition
DisasterPreventionBlockImprovementProject	Disaster prevention blocks improvement projects provided for in the Concentrated Urban Areas Development Act.
Property	Definition

disasterPreventionPublicFacilityAllocation	Location of disaster prevention public facilities.
otherPublicFacilityAllocation	Location of other public facilities.
developmentPlan	Development plan for the project.

```

<xs:element name="DisasterPreventionBlockImprovementProject"
type="urf:DisasterPreventionBlockImprovementProjectType" substitutionGroup="urf:UrbanDevelopmentProject">
</xs:element>
<xs:complexType name="DisasterPreventionBlockImprovementProjectType">
<xs:complexContent>
<xs:extension base="urf:UrbanDevelopmentProjectType">
<xs:sequence>
<xs:element name="disasterPreventionPublicFacilityAllocation" type="gml:StringOrRefType"/>
<xs:element name="otherPublicFacilityAllocation" type="gml:StringOrRefType"/>
<xs:element name="developmentPlan" type="gml:StringOrRefType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.80 UrbanRenewalProjectType, UrbanRenewalProject

Object	Definition
UrbanRenewalProject	Urban renewal project that integrate public facilities such as roads and plazas with buildings.
Property	Definition
storeysAboveGround	Number of floors above ground.
storeysBelowGround	Number of floors below ground.
setbackSize	Required setback distance from the external wall.
floorAreaRate	Rate of the total floor-area of buildings to the site area.
buildingUsage	Main usage of buildings specified in the plan.
siteArea	Area of the project area.

```

<xs:element name="UrbanRenewalProject" type="urf:UrbanRenewalProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
</xs:element>
<xs:complexType name="UrbanRenewalProjectType">
<xs:complexContent>
<xs:extension base="urf:UrbanDevelopmentProjectType">
<xs:sequence>
<xs:element name="storeysAboveGround" type="xs:integer" minOccurs="0"/>
<xs:element name="storeysBelowGround" type="xs:integer" minOccurs="0"/>
<xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="floorAreaRate" type="xs:double" minOccurs="0"/>
<xs:element name="buildingUsage" type="xs:string" minOccurs="0"/>
<xs:element name="siteArea" type="gml:MeasureType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

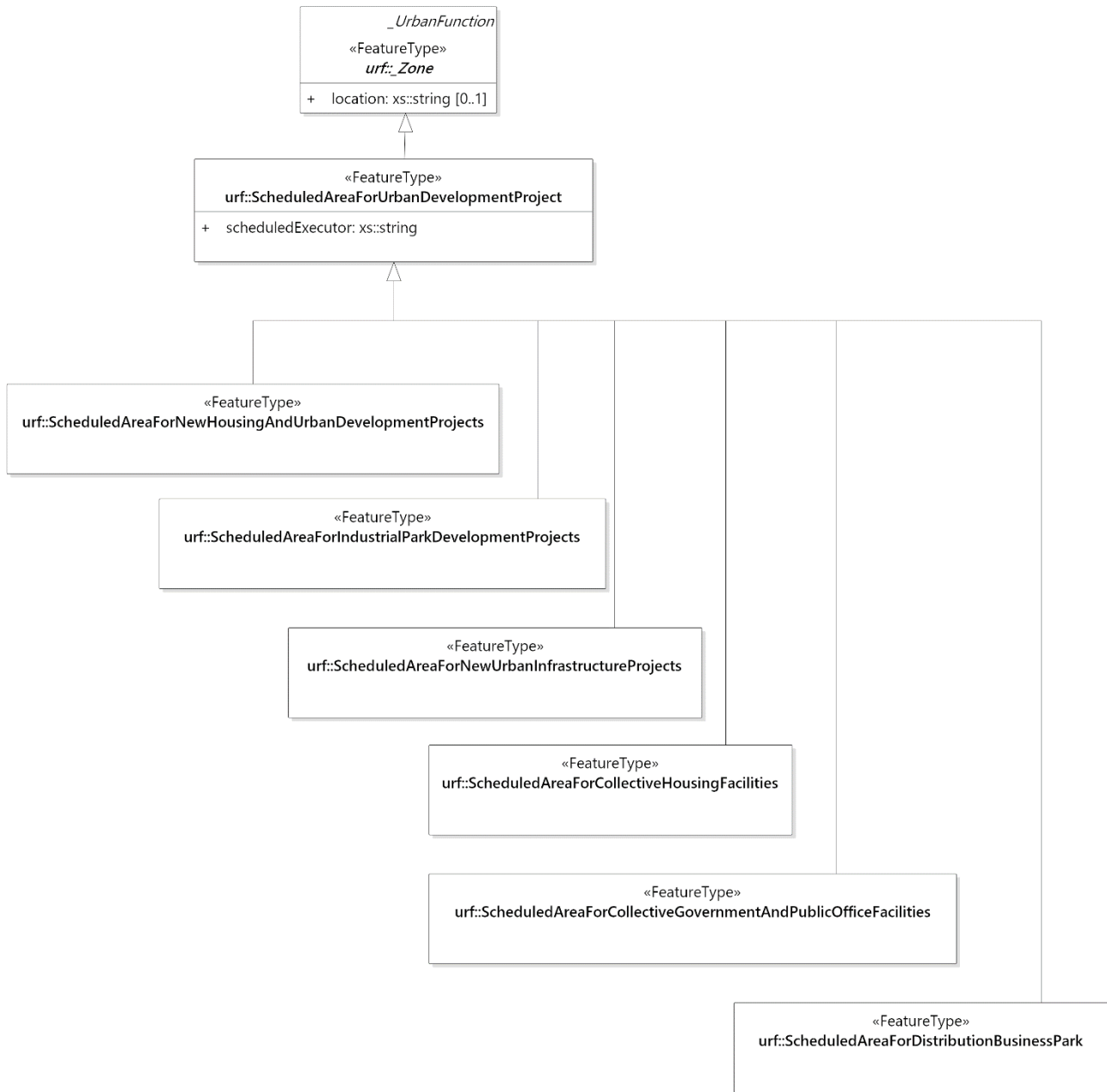


Figure 2-14 UML diagram of Scheduled area for urban development projects

4.2.18.81 ScheduledAreaForUrbanDevelopmentProjectType, ScheduledAreaForUrbanDevelopmentProject

Object	Definition
ScheduledAreaForUrbanDevelopmentProject	Scheduled Areas for Urban Development Projects where city plans for urban development projects and urban facilities are scheduled to be formulated in the future.
Property	Definition
scheduledExcutor	Scheduled executors of city planning projects.

```

<xs:element name="ScheduledAreaForUrbanDevelopmentProject"
type="urf:ScheduledAreaForUrbanDevelopmentProjectType" substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="ScheduledAreaForUrbanDevelopmentProjectType">
<xs:complexContent>

```

```

<xs:extension base="urf:ZoneType">
  <xs:sequence>
    <xs:element name="scheduledExcutor" type="xs:string"/>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.82 ScheduledAreaForNewHousingAndUrbanDevelopmentProjectsType, ScheduledAreaForNewHousingAndUrbanDevelopmentProjects

Object	Definition
ScheduledAreaForNewHousingAndUrbanDevelopmentProjects	Scheduled Areas for new housing and urban development projects.

```

<xs:element name="ScheduledAreaForNewHousingAndUrbanDevelopmentProjects"
type="urf:ScheduledAreaForNewHousingAndUrbanDevelopmentProjectsType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
</xs:element>
<xs:complexType name="ScheduledAreaForNewHousingAndUrbanDevelopmentProjectsType">
<xs:complexContent>
  <xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType"/>
</xs:complexContent>
</xs:complexType>

```

4.2.18.83 ScheduledAreaForIndustrialParkDevelopmentProjectsType, ScheduledAreaForIndustrialParkDevelopmentProjects

Object	Definition
ScheduledAreaForIndustrialParkDevelopmentProjects	Scheduled Areas for industrial park development projects.

```

<xs:element name="ScheduledAreaForIndustrialParkDevelopmentProjects"
type="urf:ScheduledAreaForIndustrialParkDevelopmentProjectsType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
</xs:element>
<xs:complexType name="ScheduledAreaForIndustrialParkDevelopmentProjectsType">
<xs:complexContent>
  <xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType"/>
</xs:complexContent>
</xs:complexType>

```

4.2.18.84 ScheduledAreaForNewUrbanInfrastructureProjectsType, ScheduledAreaForNewUrbanInfrastructureProjects

Object	Definition
ScheduledAreaForNewUrbanInfrastructureProjects	Scheduled Areas for new urban infrastructure projects.

```

<xs:element name="ScheduledAreaForNewUrbanInfrastructureProjects"
type="urf:ScheduledAreaForNewUrbanInfrastructureProjectsType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
</xs:element>
<xs:complexType name="ScheduledAreaForNewUrbanInfrastructureProjectsType">
<xs:complexContent>
  <xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType"/>
</xs:complexContent>
</xs:complexType>

```

4.2.18.85 ScheduledAreaForCollectiveHousingFacilitiesType, ScheduledAreaForCollectiveHousingFacilities

Object	Definition
ScheduledAreaForCollectiveHousingFacilities	Scheduled Areas for collective housing facilities.

```
<xs:element name="ScheduledAreaForCollectiveHousingFacilities"
type="urf:ScheduledAreaForCollectiveHousingFacilitiesType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
</xs:element>
<xs:complexType name="ScheduledAreaForCollectiveHousingFacilitiesType">
<xs:complexContent>
<xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType"/>
</xs:complexContent>
</xs:complexType>
```

4.2.18.86 ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilitiesType, ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilities

Object	Definition
ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilities	Scheduled Areas for collective government and public facilities.

```
<xs:element name="ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilities"
type="urf:ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilitiesType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
</xs:element>
<xs:complexType name="ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilitiesType">
<xs:complexContent>
<xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType"/>
</xs:complexContent>
</xs:complexType>
```

4.2.18.87 ScheduledAreaForDistributionBusinessParkType, ScheduledAreaForDistributionBusinessPark

Object	Definition
ScheduledAreaForDistributionBusinessPark	Scheduled Areas for distribution business park.

```
<xs:element name="ScheduledAreaForDistributionBusinessPark"
type="urf:ScheduledAreaForDistributionBusinessParkType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
</xs:element>
<xs:complexType name="ScheduledAreaForDistributionBusinessParkType">
<xs:complexContent>
<xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```


policy	Policy concerning improvement, development and preservation of the relevant area.
districtDevelopmentPlan	Plans concerning the construction of roads, parks, and other facilities stipulated by Cabinet Order to be used primarily by the residents in block, the construction of buildings, etc. and land use.
promotionDistrict	Promotion district stipulated in the plan.

```

<xs:element name="_AbstractDistrictPlan" type="urf:AbstractDistrictPlanType" abstract="true"
substitutionGroup="urf:Zone">
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<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="objectives" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="policy" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="districtDevelopmentPlan" type="urf:DistrictDevelopmentPlanPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
<xs:element name="promotionDistrict" type="urf:PromotionDistrictPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.89 DistrictPlanType, DistrictPlan

Object	Definition
DistrictPlan	A plan to improve, develop, and conserve favorable environments that suit the qualities of each block through uniformity in building design, public facilities layout, and the layout of other facilities.
Property	Definition
facilitiesAllocation	Location and scale of roads, parks and other facilities stipulated by Cabinet Order (excluding city planning facilities and zone facilities).
landUsePolicy	Basic policy for land use.

```

<xs:element name="DistrictPlan" type="urf:DistrictPlanType" substitutionGroup="urf:_AbstractDistrictPlan">
</xs:element>
<xs:complexType name="DistrictPlanType">
<xs:complexContent>
<xs:extension base="urf:AbstractDistrictPlanType">
<xs:sequence>
<xs:element name="facilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="landUsePolicy" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.90 DisasterPreventionBlockImprovementZonePlanType, DisasterPreventionBlockImprovementZonePlan

Object	Definition
DisasterPreventionBlockImprovementZonePlan	Disaster prevention block improvement zone plans, aiming to provide the necessary functions for preventing the spread of fire and for securing evacuation if a fire or earthquake occurs in one of the blocks in the relevant area and aiming to promote the reasonable and sound use of land, are stipulated in a

	manner that allows for uniform and comprehensive improvement of urban areas.
Property	Definition
zonalDisasterPreventionFacilitiesAllocation	Location and scale of zonal disaster prevention facilities.
specifiedZonalDisasterPreventionFacilitiesAllocation	Location and scale of specified zonal disaster prevention facilities.
zonalDisasterPreventionFacilities	Zonal disaster prevention facilities stipulated in the disaster prevention block improvement zone plan.

```

<xs:element name="DisasterPreventionBlockImprovementZonePlan"
type="urf:DisasterPreventionBlockImprovementZonePlanType" substitutionGroup="urf:_AbstractDistrictPlan">
</xs:element>
<xs:complexType name="DisasterPreventionBlockImprovementZonePlanType">
<xs:complexContent>
<xs:extension base="urf:AbstractDistrictPlanType">
<xs:sequence>
<xs:element name="zonalDisasterPreventionFacilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="specifiedZonalDisasterPreventionFacilitiesAllocation" type="gml:StringOrRefType"
minOccurs="0"/>
<xs:element name="zonalDisasterPreventionFacilities" type="urf:ZonalDisasterPreventionFacilityPropertyType"
minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.91 HistoricSceneryMaintenanceAndImprovementDistrictPlanType, HistoricSceneryMaintenanceAndImprovementDistrictPlan

Object	Definition
HistoricSceneryMaintenanceAndImprovementDistrictPlan	Historic scenery maintenance and improvement district plan stipulated in a manner that allows for the maintenance and improvement of a favorable urban environment that has been developed in unison with the surrounding urban area.
Property	Definition
landUsePolicy	Basic policy for land use.

```

<xs:element name="HistoricSceneryMaintenanceAndImprovementDistrictPlan"
type="urf:HistoricSceneryMaintenanceAndImprovementDistrictPlanType" substitutionGroup="urf:_AbstractDistrictPlan">
</xs:element>
<xs:complexType name="HistoricSceneryMaintenanceAndImprovementDistrictPlanType">
<xs:complexContent>
<xs:extension base="urf:AbstractDistrictPlanType">
<xs:sequence>
<xs:element name="landUsePolicy" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.92 RoadsideDistrictPlanType, RoadsideDistrictPlan

Object	Definition
RoadsideDistrictPlan	Roadside district plan stipulated in order to prevent nuisances arising from road traffic noise and to promote adequate and reasonable land use.
Property	Definition

facilitiesAllocation	Location and scale of roads, parks and other facilities stipulated by Cabinet Order (excluding city planning facilities and zone facilities).
landUsePolicy	Basic policy for land use.

```
<xs:element name="RoadsideDistrictPlan" type="urf:RoadsideDistrictPlanType"
substitutionGroup="urf:_AbstractDistrictPlan">
</xs:element>
<xs:complexType name="RoadsideDistrictPlanType">
<xs:complexContent>
<xs:extension base="urf:AbstractDistrictPlanType">
<xs:sequence>
<xs:element name="facilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="landUsePolicy" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.93 RuralDistrictPlanType, RuralDistrictPlan

Object	Definition
RuralDistrictPlan	Rural district plan stipulated in order to develop dwelling environments in balance with agricultural management conditions and to promote adequate land use.

```
<xs:element name="RuralDistrictPlan" type="urf:RuralDistrictPlanType" substitutionGroup="urf:_AbstractDistrictPlan">
</xs:element>
<xs:complexType name="RuralDistrictPlanType">
<xs:complexContent>
<xs:extension base="urf:AbstractDistrictPlanType"/>
</xs:complexContent>
</xs:complexType>
```

4.2.18.94 DistrictDevelopmentPlanType, DistrictDevelopmentPlan

Object	Definition
DistrictDevelopmentPlan	District development plan concerning the construction of roads, parks, and other facilities stipulated by Cabinet Order to be used primarily by the residents in block, the construction of buildings, etc. and land use.
Property	Definition
districtFacilitiesAllocation	Location and scope of district facilities.
buildingRestrictions	Restrictions for buildings.
urbanGreenSpaceConservation	Matters concerning the conservation of existing woodlands, grasslands and other areas required to secure a favorable dwelling environment
activityRestrictionInFarmland	Restrictions for farmland.
landUseRestrictions	Any other matters concerning land use.
districtFacility	District facilities stipulated to the district development plan.
district	Districts stipulated to the district development plan.

```
<xs:element name="DistrictDevelopmentPlan" type="urf:DistrictDevelopmentPlanType" substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="DistrictDevelopmentPlanType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="districtFacilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="buildingRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="urbanGreenSpaceConservation" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```



```

<xs:element name="activityRestrictionInFarmland" type="gml:StringOrRefType" minOccurs="0" />
<xs:element name="landUseRestrictions" type="gml:StringOrRefType" minOccurs="0" />
<xs:element name="districtFacility" type="urf:DistrictFacilityPropertyType" minOccurs="0"
maxOccurs="unbounded" />
<xs:element name="district" type="urf:DistrictPropertyType" minOccurs="0" maxOccurs="unbounded" />
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.95 SpecifiedBuildingZoneImprovementPlanType, SpecifiedBuildingZoneImprovementPlan

Object	Definition
SpecifiedBuildingZoneImprovementPlan	Specified building zone improvement plan.

```

<xs:element name="SpecifiedBuildingZoneImprovementPlan" type="urf:SpecifiedBuildingZoneImprovementPlanType"
substitutionGroup="urf:DistrictDevelopmentPlan">
</xs:element>
<xs:complexType name="SpecifiedBuildingZoneImprovementPlanType">
<xs:complexContent>
<xs:extension base="urf:DistrictDevelopmentPlanType" />
</xs:complexContent>
</xs:complexType>

```

4.2.18.96 DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlanType, DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlan

Object	Definition
DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlan	disaster prevention block improvement zone plan.

```

<xs:element name="DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlan"
type="urf:DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlanType"
substitutionGroup="urf:DistrictDevelopmentPlan">
</xs:element>
<xs:complexType name="DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlanType">
<xs:complexContent>
<xs:extension base="urf:DistrictDevelopmentPlanType" />
</xs:complexContent>
</xs:complexType>

```

4.2.18.97 DistrictImprovementPlanForHistoricSceneryMaintenanceAndImprovementDistrictType, DistrictImprovementPlanForHistoricSceneryMaintenanceAndImprovementDistrict

Object	Definition
DistrictImprovementPlanForHistoricSceneryMaintenanceAndImprovementDistrict	Historic scenery maintenance and improvement district plan.

```

<xs:element name="DistrictImprovementPlanForHistoricSceneryMaintenanceAndImprovementDistrict"
type="urf:DistrictImprovementPlanForHistoricSceneryMaintenanceAndImprovementDistrictType"
substitutionGroup="urf:DistrictDevelopmentPlan">
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<xs:complexContent>
<xs:extension base="urf:DistrictDevelopmentPlanType" />

```

```
</xs:complexContent>
</xs:complexType>
```

4.2.18.98 RoadsideDistrictImprovementPlanType, RoadsideDistrictImprovementPlan

Object	Definition
RoadsideDistrictImprovementPlan	Roadside district improvement plan.
Property	Definition
roadsideDistrictFacilitiesAllocation	Location and scale of roadside district facilities.

```
<xs:element name="RoadsideDistrictImprovementPlan" type="urf:RoadsideDistrictImprovementPlanType"
substitutionGroup="urf:DistrictDevelopmentPlan">
</xs:element>
<xs:complexType name="RoadsideDistrictImprovementPlanType">
<xs:complexContent>
<xs:extension base="urf:DistrictDevelopmentPlanType">
<xs:sequence>
<xs:element name="roadsideDistrictFacilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.99 RuralDistrictImprovementPlanType, RuralDistrictImprovementPlan

Object	Definition
RuralDistrictImprovementPlan	Rural hamlet district improvement plan.
Property	Definition
ruralDistrictFacilitiesAllocation	Location and scale of rural district facilities.

```
<xs:element name="RuralDistrictImprovementPlan" type="urf:RuralDistrictImprovementPlanType"
substitutionGroup="urf:DistrictDevelopmentPlan">
</xs:element>
<xs:complexType name="RuralDistrictImprovementPlanType">
<xs:complexContent>
<xs:extension base="urf:DistrictDevelopmentPlanType">
<xs:sequence>
<xs:element name="ruralDistrictFacilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
```

4.2.18.100 DistrictType, District

Object	Definition
District	District with established (e.g. restrictions such as use restrictions for buildings, maximum and minimum floor-area ratios for buildings, maximum floor coverage ratios for buildings, site area for buildings or minimum building area, restrictions on the location of walls, restrictions on structure placement in the wall setback area).
Property	Definition
buildingRestrictions	Restrictions on buildings.
useRestrictions	Building usage restrictions.
maximumFloorAreaRate	Maximum floor area ratio.

minimumFloorAreaRate	Minimum floor area ratio.
maximumBuildingCoverageRate	Maximum building coverage ratio.
minimumBuildingCoverageRate	Minimum building coverage ratio.
minimumSiteArea	Minimum area of the site.
minimumBuildingArea	Minimum area of the building in the site.
setbackSize	Required setback distance from the external wall.
minimumFloorHeight	Minimum height of the floor.
maximumBuildingHeight	Maximum height of buildings.
minimumBuildingHeight	Minimum height of buildings.
structurePlacementRestrictions	Restrictions on installation in the setback areas.
buildingDesignRestriction	Restrictions on building design.
minimumGreeningRate	Minimum ratio of greening.
fenceGuideline	Restrictions on fence.
restrictionsForFireProtection	Fire protection restrictions.
restrictionsForNoiseProtection	Noise protection restrictions.
minimumFrontageRate	Minimum ratio of building frontage to length of lot abutting a street.

```

<xs:element name="District" type="urf:DistrictType" substitutionGroup="urf:Zone"/>
<xs:complexType name="DistrictType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="buildingRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="useRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="maximumFloorAreaRate" type="xs:double" minOccurs="0"/>
        <xs:element name="minimumFloorAreaRate" type="xs:double" minOccurs="0"/>
        <xs:element name="maximumBuildingCoverageRate" type="xs:double" minOccurs="0"/>
        <xs:element name="minimumBuildingCoverageRate" type="xs:double" minOccurs="0"/>
        <xs:element name="minimumSiteArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="minimumBuildingArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="minimumGroundHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="setbackSize" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="structurePlacementRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="minimumFloorHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="buildingDesignRestriction" type="xs:string" minOccurs="0"/>
        <xs:element name="minimumGreeningRate" type="xs:double" minOccurs="0"/>
        <xs:element name="fenceGuideline" type="xs:string" minOccurs="0"/>
        <xs:element name="restrictionsForFireProtection" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="restrictionsForNoiseProtection" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="minimumFrontageRate" type="xs:double" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.101 DistrictFacilityType, DistrictFacility

Object	Definition
DistrictFacility	Roads, parks, and other facilities stipulated by Cabinet Order to be used primarily by the residents in block.

```

<xs:element name="DistrictFacility" type="urf:DistrictFacilityType" substitutionGroup="urf:Zone">
</xs:element>

```

```

<xs:complexType name="DistrictFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType"/>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.102 RuralDistrictFacilityType, RuralDistrictFacility

Object	Definition
RuralDistrictFacility	Roads, parks, and other facilities specified in the rural district improvement plan.

```

<xs:element name="RuralDistrictFacility" type="urf:RuralDistrictFacilityType" substitutionGroup="urf:DistrictFacility">
</xs:element>
<xs:complexType name="RuralDistrictFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictFacilityType"/>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.103 RoadsideDistrictFacilityType, RoadsideDistrictFacility

Object	Definition
RoadsideDistrictFacility	Roads, parks, and other facilities specified in the roadside district improvement plan.

```

<xs:element name="RoadsideDistrictFacility" type="urf:RoadsideDistrictFacilityType" substitutionGroup="urf:DistrictFacility">
</xs:element>
<xs:complexType name="RoadsideDistrictFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictFacilityType"/>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.104 ZonalDisasterPreventionFacilityType, ZonalDisasterPreventionFacility

Object	Definition
ZonalDisasterPreventionFacility	Disaster-prevention public facilities to ensure specific disaster-prevention functions in the area, as specified in the disaster-prevention urban development district plan.
Property	Definition
facilityType	Type of zonal disaster prevention facility.

```

<xs:element name="ZonalDisasterPreventionFacility" type="urf:ZonalDisasterPreventionFacilityType" substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="ZonalDisasterPreventionFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="facilityType" type="gml:CodeType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

4.2.18.105 PromotionDistrictType, PromotionDistrict

Object	Definition
--------	------------

PromotionDistrict	Promotion district as defined in the district plan.
-------------------	---

```

<xs:element name="PromotionDistrict" type="urf:PromotionDistrictType" substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="PromotionDistrictType">
<xs:complexContent>
<xs:extension base="urf:ZoneType"/>
</xs:complexContent>
</xs:complexType>

```

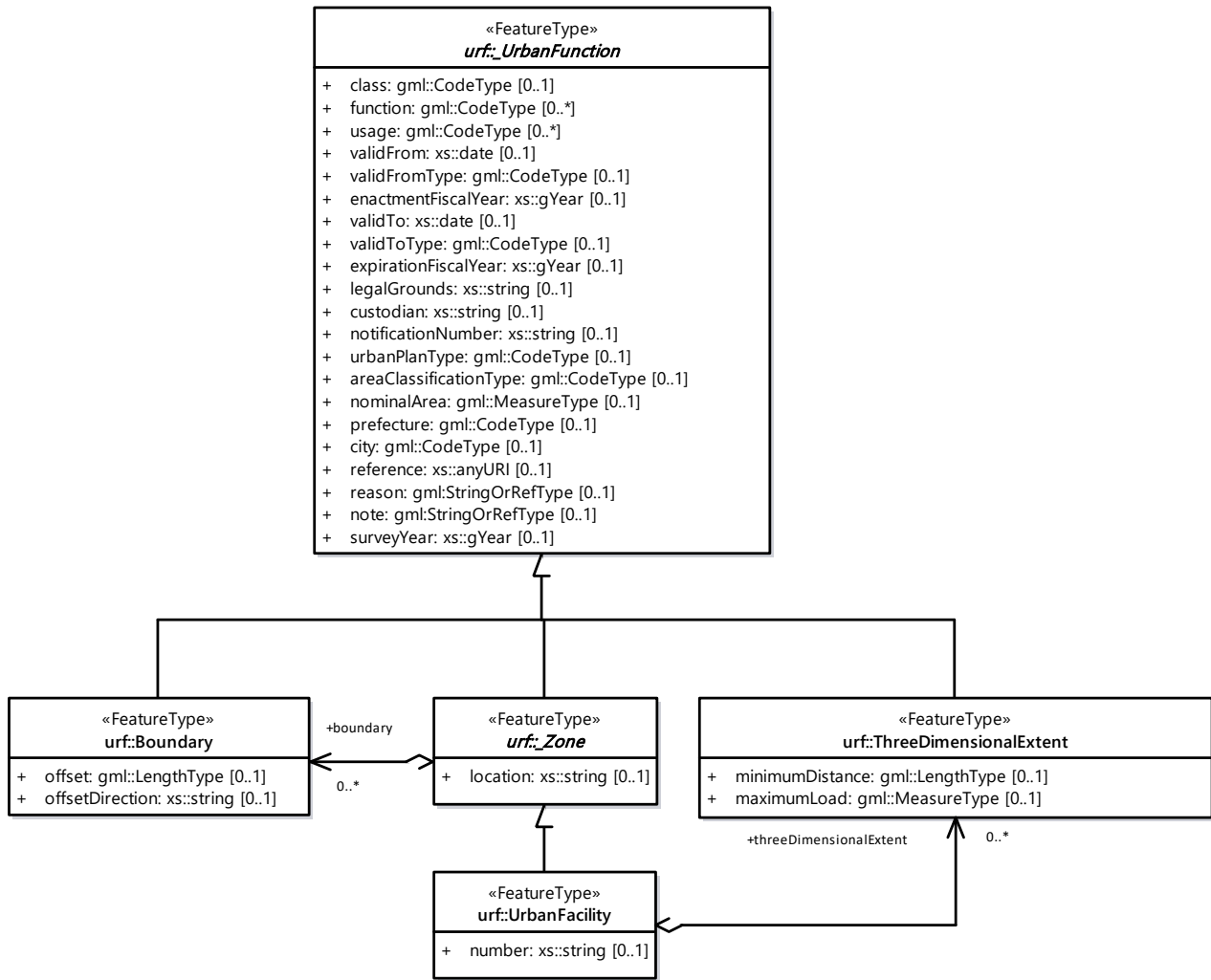


Figure 2-16 UML diagram of Boundary and Three dimensional extent

4.2.18.106 BoundaryType, Boundary

Object	Definition
Boundary	Boundary of zone.
Property	Definition
offset	Offset value of the boundary from the specified line.
offsetDirection	Offset direction of the boundary from the specified line.

```

<xs:element name="Boundary" type="urf:BoundaryType" substitutionGroup="urf:_UrbanFunction">
</xs:element>
<xs:complexType name="BoundaryType">
<xs:complexContent>

```

```

<xs:extension base="urf:UrbanFunctionType">
  <xs:sequence>
    <xs:element name="offset" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="offsetDirection" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.107 ThreeDimensionalExtentType, ThreeDimensionalExtent

Object	Definition
ThreeDimensionalExtent	Multi-level limits of underground or open spaces of the relevant urban facilities.
Property	Definition
minimumDistance	Minimum offset distance from the relevant multi-level expanse.
maximumLoad	maximum load.

```

<xs:element name="ThreeDimensionalExtent" type="urf:ThreeDimensionalExtent"
substitutionGroup="urf:_UrbanFunction">
</xs:element>
<xs:complexType name="ThreeDimensionalExtent">
<xs:complexContent>
  <xs:extension base="urf:UrbanFunctionType">
    <xs:sequence>
      <xs:element name="minimumDistance" type="gml:LengthType" minOccurs="0"/>
      <xs:element name="maximumLoad" type="gml:MeasureType" minOccurs="0"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.108 UrgentUrbanRenewalAreaType, UrgentUrbanRenewalArea

Object	Definition
UrgentUrbanRenewalArea	Urgent urban renewal area designated by government ordinance as areas where urgent and intensive urban development should be promoted through urban development projects, etc., as bases for urban revitalization.
Property	Definition
developmentPolicy	Policy on the development of urgent urban renewal area.
privateProject	Private urban renewal project plan defined in the urgent urban renewal area.
specifiedArea	Specified urgent urban renewal area defined in the urgent urban renewal area.
specialDistrict	Special urban renaissance district in the urgent urban renewal area.

```

<xs:element name="UrgentUrbanRenewalArea" type="urf:UrgentUrbanRenewalAreaType" substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="UrgentUrbanRenewalAreaType">
<xs:complexContent>
  <xs:extension base="urf:ZoneType">
    <xs:sequence>
      <xs:element name="developmentPolicy" type="gml:StringOrRefType" minOccurs="0"/>
      <xs:element name="privateProject" type="urf:PrivateUrbanRenewalProjectPlanPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
      <xs:element name="specifiedArea" type="urf:SpecifiedUrgentUrbanRenewalAreaPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
      <xs:element name="specialDistrict" type="urf:SpecialUrbanRenaissanceDistrictPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
    </xs:sequence>
  </xs:extension>

```

```

</xs:complexContent>
</xs:complexType>

```

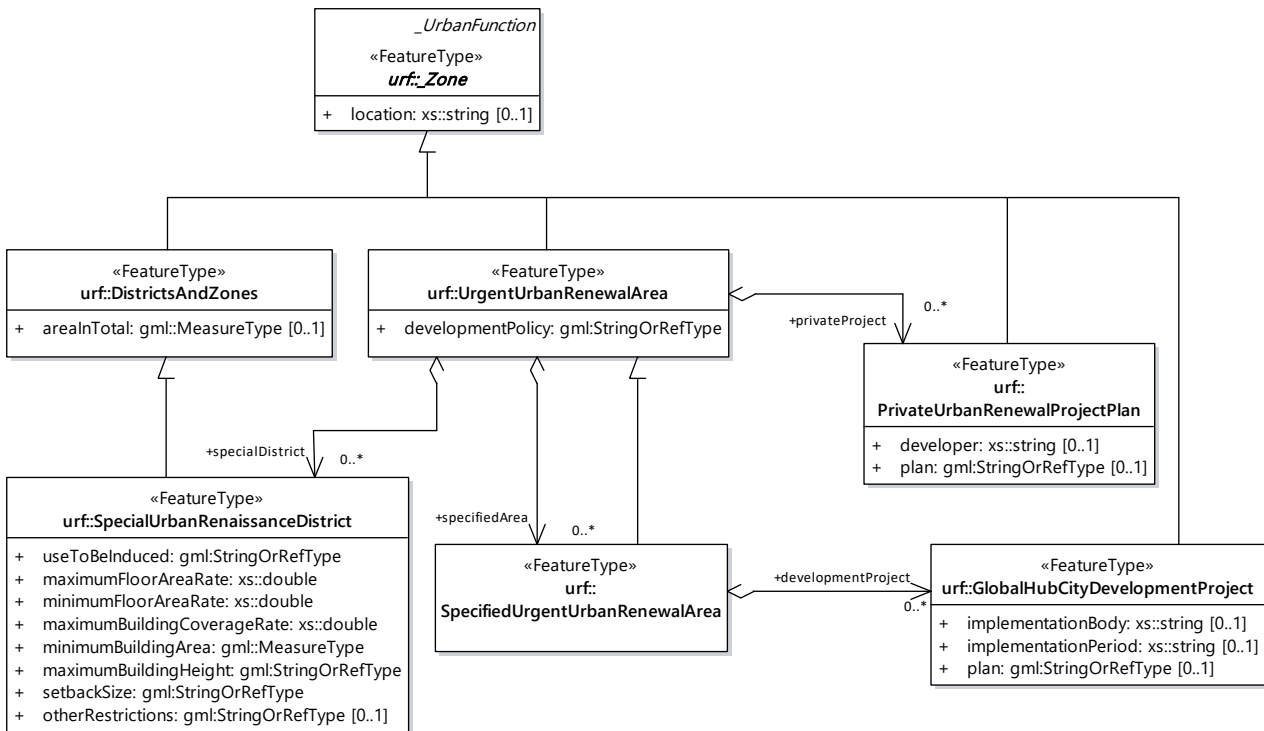


Figure 2-17 UML diagram of Urgent urban renewal areas

4.2.18.109 SpecifiedUrgentUrbanRenewalAreaType, SpecifiedUrgentUrbanRenewalArea

Object	Definition
SpecifiedUrgentUrbanRenewalArea	Specified urgent urban renewal area that are particularly effective in strengthening the international competitiveness of cities by promoting urgent and intensive urban development through the smooth and rapid implementation of urban development projects, etc.

```

<xs:element name="SpecifiedUrgentUrbanRenewalArea" type="urf:SpecifiedUrgentUrbanRenewalAreaType"
substitutionGroup="urf:UrgentUrbanRenewalArea">
</xs:element>
<xs:complexType name="SpecifiedUrgentUrbanRenewalAreaType">
<xs:complexContent>
<xs:extension base="urf:UrgentUrbanRenewalAreaType">
<xs:sequence>
<xs:element name="developmentProject" type="urf:GlobalHubCityDevelopmentProjectPropertyType"
minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.110 PrivateUrbanRenewalProjectPlanType, PrivateUrbanRenewalProjectPlan

Object	Definition
PrivateUrbanRenewalProjectPlan	Urban renewal project implemented by private sector.
Property	Definition
developer	Name of the certified developer of the project.

plan	Plan of an urban renewal project implemented by private sector.
------	---

```

<xs:element name="PrivateUrbanRenewalProjectPlan" type="urf:PrivateUrbanRenewalProjectPlanType"
substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="PrivateUrbanRenewalProjectPlanType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="developer" type="xs:string" minOccurs="0"/>
<xs:element name="plan" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

4.2.18.111 GlobalHubCityDevelopmentProjectType, GlobalHubCityDevelopmentProject

Object	Definition
GlobalHubCityDevelopmentProject	A project that is being undertaken within an Urgent Urban Renewal Area with the aim of strengthening the international competitiveness of the city.
Property	Definition
implementationBody	Name of the implementation body of the project.
implementationPeriod	Implementation period of the project.
plan	Project plan.

```

<xs:element name="GlobalHubCityDevelopmentProject" type="urf:GlobalHubCityDevelopmentProjectType"
substitutionGroup="urf:Zone">
</xs:element>
<xs:complexType name="GlobalHubCityDevelopmentProjectType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="implementationBody" type="xs:string" minOccurs="0"/>
<xs:element name="implementationPeriod" type="xs:string" minOccurs="0"/>
<xs:element name="plan" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

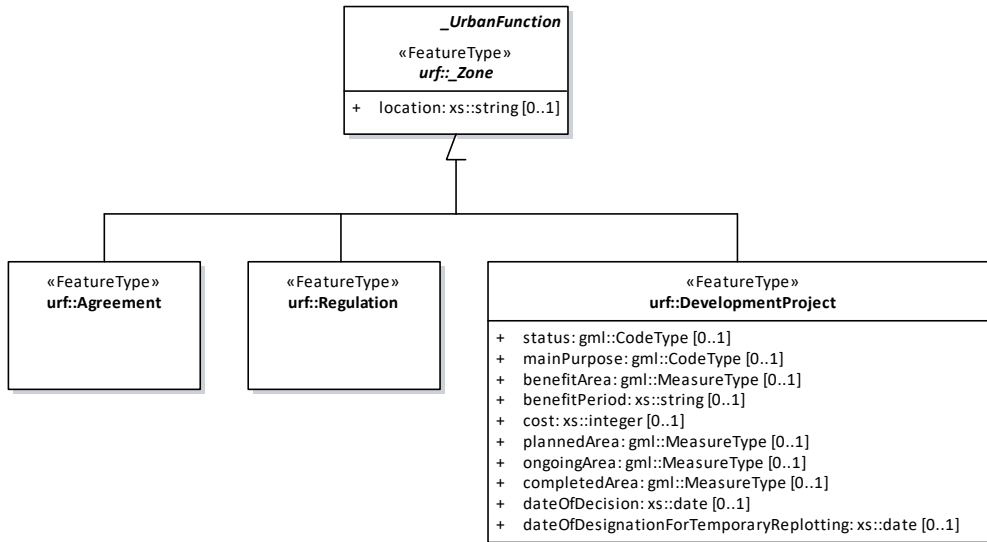



Figure 2-18 UML diagram of *_UrbanFunction*

4.2.19 AgreementType, Agreement

Object	Definition
Agreement	An area specified by the agreement between the parties upon negotiated in order to avoid conflict, competition, etc.,

```

<xs:complexType name="AgreementType" abstract="true">
  <xs:complexContent>
    <xs:extension base="ZoneType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Agreement" type="AgreementType" substitutionGroup="Zone"/>
  
```

4.2.20 RegulationType, Regulation

Object	Definition
Regulation	A specified area or location which is regulated.

```

<xs:complexType name="RegulationType" abstract="true">
  <xs:complexContent>
    <xs:extension base="ZoneType"/>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Regulation" type="RegulationType" substitutionGroup="Zone"/>
  
```

4.2.21 DevelopmentProjectType, DevelopmentProject

Object	Definition
DevelopmentProject	Scheduled or developed areas by development project.
Property	Definition
status	Status of the project.
mainPurpose	Purpose of the project.
benefitArea	Benefit area by the project.

benefitPeriod	Benefit period by the project.
cost	Project cost.
plannedArea	Planned area in the project.
ongoingArea	Ongoing area in the project.
completedArea	Completed area in the project.
dateOfDecision	Date on which project implementation was decided.
dateOfDesignationForTemporaryReplotting	Date on which temporary replotting was designated.

```

<xs:complexType name="DevelopmentProjectType">
  <xs:complexContent>
    <xs:extension base="ZoneType">
      <xs:sequence>
        <xs:element name="status" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="mainPurpose" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="benefitArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="benefitPeriod" type="xs:string" minOccurs="0"/>
        <xs:element name="cost" type="xs:integer" minOccurs="0"/>
        <xs:element name="plannedArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="ongoingArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="completedArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="dateOfDecision" type="xs:date" minOccurs="0"/>
        <xs:element name="dateOfDesignationForTemporaryReplotting" type="xs:date" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="DevelopmentProject" type="DevelopmentProjectType" substitutionGroup="Zone"/>
<xs:complexType name="DevelopmentProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="DevelopmentProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.22 Other subtypes of Urban Function

Annex A (normative)

XMLSchema Definition

A.1 XMLSchema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:urf="https://www.geospatial.jp/iur/urf/3.1" xmlns:core="http://www.opengis.net/citygml/2.0"
xmlns:xs="http://www.w3.org/2001/XMLSchema" xmlns:gml="http://www.opengis.net/gml"
xmlns:uro="https://www.geospatial.jp/iur/uro/3.1" targetNamespace="https://www.geospatial.jp/iur/urf/3.1"
elementFormDefault="qualified" attributeFormDefault="unqualified" version="3.1.-">
  <xs:annotation>
    <xs:documentation>XML Schema for City Planning Decision</xs:documentation>
    <xs:documentation>This XML Schema extends Urban Planning Module of i-UR</xs:documentation>
    <xs:documentation>3D 都市モデル標準製品仕様書第 4.0 版に対応</xs:documentation>
    <xs:documentation>都市計画データ標準製品仕様書第 1.1 版に対応</xs:documentation>
  </xs:annotation>
  <xs:import namespace="http://www.opengis.net/gml"
schemaLocation="http://schemas.opengis.net/gml/3.1.1/base/gml.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/2.0"
schemaLocation="http://schemas.opengis.net/citygml/2.0/cityGMLBase.xsd"/>
  <xs:import namespace="http://www.opengis.net/gml"
schemaLocation="http://schemas.opengis.net/gml/3.1.1/base/gml.xsd"/>
  <xs:import namespace="https://www.geospatial.jp/iur/uro/3.1" schemaLocation="../../uro/3.1/urbanObject.xsd">
    <xs:annotation>
      <xs:documentation>第 3.5 版修正</xs:documentation>
    </xs:annotation>
  </xs:import>
  <xs:complexType name="UrbanFunctionType" abstract="true">
    <xs:annotation>
      <xs:documentation>The root type for urban function. As subclass of _CityObject, an
      _UrbanFunction inherits all attributes and relations, in particular description, an
      id, names and description from _AbstractFeature. </xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="core:AbstractCityObjectType">
        <xs:sequence>
          <xs:element name="class" type="gml:CodeType" minOccurs="0">
            <xs:annotation>
              <xs:documentation>UrbanFunction_class.xml</xs:documentation>
            </xs:annotation>
          </xs:element>
          <xs:element name="function" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
          <xs:element name="usage" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
          <xs:element name="validFrom" type="xs:date" minOccurs="0"/>
          <xs:element name="validFromType" type="gml:CodeType" minOccurs="0">
            <xs:annotation>
              <xs:documentation>Common_validType.xml</xs:documentation>
            </xs:annotation>
          </xs:element>
          <xs:element name="enactmentFiscalYear" type="xs:gYear" minOccurs="0"/>
          <xs:element name="validTo" type="xs:date" minOccurs="0"/>
          <xs:element name="validToType" type="gml:CodeType" minOccurs="0">
            <xs:annotation>
              <xs:documentation>Common_validType.xml</xs:documentation>
            </xs:annotation>
          </xs:element>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>

```

```

</xs:element>
<xs:element name="expirationFiscalYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="legalGrounds" type="xs:string" minOccurs="0"/>
<xs:element name="custodian" type="xs:string" minOccurs="0"/>
<xs:element name="notificationNumber" type="xs:string" minOccurs="0"/>
<xs:element name="finalNotificationDate" type="xs:date" minOccurs="0">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="finalNotificationNumber" type="xs:string" minOccurs="0">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="urbanPlanType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="areaClassificationType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="nominalArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="prefecture" type="gml:CodeType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Common_localPublicAuthorities.xml</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="city" type="gml:CodeType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>Common_localPublicAuthorities.xml</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="reference" type="xs:anyURI" minOccurs="0"/>
<xs:element name="reason" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="note" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="surveyYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="lod-2MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
<xs:element name="lod-1MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
<xs:element name="lod0MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
<xs:element name="lod1MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
<xs:element name="lod-2MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0"/>
<xs:element name="lod-1MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0"/>
<xs:element name="lod0MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0"/>
<xs:element name="lod1MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0"/>
<xs:element name="lod-2MultiPoint" type="gml:MultiPointPropertyType" minOccurs="0"/>
<xs:element name="lod-1MultiPoint" type="gml:MultiPointPropertyType" minOccurs="0"/>
<xs:element name="lod0MultiPoint" type="gml:MultiPointPropertyType" minOccurs="0"/>
<xs:element name="target" type="urf:TargetPropertyType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="dataQualityAttribute" type="uro:DataQualityAttributePropertyType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="_UrbanFunction" type="urf:UrbanFunctionType" abstract="true"
substitutionGroup="core:_CityObject"/>
<xs:complexType name="UrbanFunctionPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:_UrbanFunction"/>
  </xs:sequence>
</xs:complexType>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="TargetPropertyType">

```

```

<xs:sequence minOccurs="0">
  <xs:element ref="core:_CityObject"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:element name="Zone" type="urf:ZoneType" substitutionGroup="urf:_UrbanFunction"/>
<!-- ===== -->
<xs:complexType name="ZoneType">
  <xs:annotation>
    <xs:documentation>zoning district</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="boundary" type="urf:BoundaryPropertyType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="location" type="xs:string" minOccurs="0"/>
        <xs:element name="urbanParkAttribute" type="urf:UrbanParkAttributePropertyType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 3.5 版追加</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== PropertyType ===== -->
<xs:complexType name="ZonePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:Zone"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:element name="UrbanParkAttribute" type="urf:UrbanParkAttributeType">
  <xs:annotation>
    <xs:documentation>第 3.5 版追加</xs:documentation>
    <xs:documentation>都市公園法第 2 条第 1 項 公園</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrbanParkAttributeType">
  <xs:sequence>
    <xs:element name="parkCode" type="gml:CodeType">
      <xs:annotation>
        <xs:documentation>Common_parkType.xml</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="startFrom" type="xs:date"/>
    <xs:element name="breakdownOfNominalArea" type="urf:BreakdownOfNominalAreaPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="UrbanParkAttributePropertyType">
  <xs:sequence>
    <xs:element ref="urf:UrbanParkAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- 敷地面積の内訳 -->
<xs:element name="BreakdownOfNominalArea" type="urf:BreakdownOfNominalAreaType"/>
<xs:complexType name="BreakdownOfNominalAreaPropertyType">

```

```

<xs:sequence>
  <xs:element ref="urf:BreakdownOfNominalArea"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="BreakdownOfNominalAreaType">
  <xs:sequence>
    <xs:element name="breakdown" type="xs:string"/>
    <xs:element name="arealnSquareMeter" type="gml:MeasureType"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<!-- ===== City Planning Decision ===== -->
<!-- ===== -->
<!-- 区域界 -->
<!-- element declaration -->
<xs:element name="Boundary" type="urf:BoundaryType">
  <xs:annotation>
    <xs:documentation>区域界</xs:documentation>
  </xs:annotation>
</xs:element>
<!-- type declaration -->
<xs:complexType name="BoundaryType">
  <xs:sequence>
    <xs:element name="class" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="function" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="usage" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
    <xs:element name="offset" type="gml:LengthType" minOccurs="0"/>
    <xs:element name="offsetDirection" type="xs:string" minOccurs="0"/>
    <xs:element name="location" type="gml:MultiCurvePropertyType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<!-- propertytype declaration -->
<xs:complexType name="BoundaryPropertyType">
  <xs:sequence>
    <xs:element ref="urf:Boundary"/>
  </xs:sequence>
</xs:complexType>
<!-- 立体的な範囲 -->
<xs:element name="ThreeDimensionalExtent" type="urf:ThreeDimensionalExtent"
substitutionGroup="urf:_UrbanFunction">
  <xs:annotation>
    <xs:documentation>立体的な範囲</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ThreeDimensionalExtent">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="minimumDistance" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="maximumLoad" type="gml:MeasureType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ThreeDimensionalExtentPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ThreeDimensionalExtent"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

```

<!-- ===== 都市計画区域、準都市計画区域 ===== -->
<xs:element name="UrbanPlanningArea" type="urf:UrbanPlanningAreaType" substitutionGroup="urf:Zone"/>
<xs:complexType name="UrbanPlanningAreaType">
  <xs:annotation>
    <xs:documentation>都市計画区域</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="areaClassification" type="gml:CodeType">
          <xs:annotation>
            <xs:documentation>Common_availabilityType.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="reasonForAreaClassification" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="policyForAreaClassification" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="purposeForUrbanPlan" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="policyForUrbanPlanDecision" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="population" type="xs:integer" minOccurs="0"/>
        <xs:element name="cityArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="cityPopulation" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
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  <xs:sequence minOccurs="0">
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  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:element name="QuasiUrbanPlanningArea" type="urf:QuasiUrbanPlanningAreaType" substitutionGroup="urf:Zone"/>
<xs:complexType name="QuasiUrbanPlanningAreaType">
  <xs:annotation>
    <xs:documentation>準都市計画区域</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="population" type="xs:integer" minOccurs="0"/>
        <xs:element name="cityArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="cityPopulation" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="QuasiUrbanPlanningAreaPropertyType">
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  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 区域区分 ===== -->
<xs:element name="AreaClassification" type="urf:AreaClassificationType" substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>区域区分</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="AreaClassificationType">

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<xs:complexContent>
  <xs:extension base="urf:ZoneType">
    <xs:sequence>
      <xs:element name="population" type="xs:integer" minOccurs="0"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
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<xs:complexType name="AreaClassificationPropertyType">
  <xs:sequence minOccurs="0">
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  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 地域地区 ===== -->
<xs:element name="DistrictsAndZones" type="urf:DistrictsAndZonesType" substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>地域地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="DistrictsAndZonesType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
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        <xs:element name="areaInTotal" type="gml:MeasureType" minOccurs="0"/>
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    </xs:extension>
  </xs:complexContent>
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  <xs:sequence minOccurs="0">
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  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 用途地域 ===== -->
<xs:element name="UseDistrict" type="urf:UseDistrictType" substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>用途地域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UseDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="floorAreaRate" type="xs:integer">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="minimumSiteArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="buildingCoverageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="wallSetbackDistance" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="buildingHeightLimits" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="buildingRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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<xs:element name="setbackRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="frontRoadRestrictions" type="gml:StringOrRefType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="adjacentLandRestrictions" type="gml:StringOrRefType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="northDirectionRestrictions" type="gml:StringOrRefType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>第 3.2 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
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</xs:extension>
</xs:complexContent>
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  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UseDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 特別用途地区 ===== -->
<xs:element name="SpecialUseDistrict" type="urf:SpecialUseDistrictType" substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>特別用途地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SpecialUseDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
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        <xs:element name="buildingRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SpecialUseDistrictPropertyType">
  <xs:sequence minOccurs="0">
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  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 特定用途制限地区 ===== -->
<xs:element name="SpecialUseRestrictionDistrict" type="urf:SpecialUseRestrictionDistrictType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>特定用途制限地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SpecialUseRestrictionDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">

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<xs:sequence>
  <xs:element name="buildingRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
  <xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
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</xs:complexContent>
</xs:complexType>
<xs:complexType name="SpecialUseRestrictionDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SpecialUseRestrictionDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 特例容積率適用地区 ===== -->
<xs:element name="ExceptionalFloorAreaRateDistrict" type="urf:ExceptionalFloorAreaRateDistrictType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>特例容積率適用地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ExceptionalFloorAreaRateDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="buildingHeightLimits" type="gml:LengthType" minOccurs="0"/>
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    </xs:extension>
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</xs:complexType>
<xs:complexType name="ExceptionalFloorAreaRateDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ExceptionalFloorAreaRateDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 高層住居誘導地区 ===== -->
<xs:element name="HighRiseResidentialAttractionDistrict" type="urf:HighRiseResidentialAttractionDistrictType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>高層住居誘導地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="HighRiseResidentialAttractionDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="floorAreaRate" type="xs:integer">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="maximumBuildingCoverageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="minimumSiteArea" type="gml:MeasureType" minOccurs="0"/>
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    </xs:extension>
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<xs:complexType name="HighRiseResidentialAttractionDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:HighRiseResidentialAttractionDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 高度地区 ===== -->
<xs:element name="HeightControlDistrict" type="urf:HeightControlDistrictType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>高度地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="HeightControlDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
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      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="HeightControlDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:HeightControlDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 高度利用地区 ===== -->
<xs:element name="HighLevelUseDistrict" type="urf:HighLevelUseDistrictType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>高度利用地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="HighLevelUseDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="maximumFloorAreaRate" type="xs:integer" minOccurs="1" maxOccurs="unbounded">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="minimumFloorAreaRate" type="xs:integer" minOccurs="1" maxOccurs="unbounded">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="maximumBuildingCoverageRate" type="xs:integer" minOccurs="1" maxOccurs="unbounded">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="minimumBuildingArea" type="gml:MeasureType" minOccurs="1" maxOccurs="unbounded"/>
        <xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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</xs:extension>
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</xs:complexType>
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  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 特定街区 ===== -->
<xs:element name="SpecifiedBlock" type="urf:SpecifiedBlockType" substitutionGroup="urf:DistrictsAndZones">
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    <xs:documentation>特定街区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SpecifiedBlockType">
  <xs:complexContent>
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        <xs:element name="floorAreaRate" type="xs:integer">
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            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="maximumBuildingHeight" type="gml:LengthType"/>
        <xs:element name="setbackSize" type="gml:StringOrRefType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SpecifiedBlockPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SpecifiedBlock"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 都市再生特別地区 ===== -->
<xs:element name="SpecialUrbanRenaissanceDistrict" type="urf:SpecialUrbanRenaissanceDistrictType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>都市再生特別地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SpecialUrbanRenaissanceDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="useToBeInduced" type="gml:StringOrRefType"/>
        <xs:element name="maximumFloorAreaRate" type="xs:integer">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
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        </xs:element>
        <xs:element name="minimumFloorAreaRate" type="xs:integer">
          <xs:annotation>
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        </xs:element>
        <xs:element name="maximumBuildingCoverageRate" type="xs:integer">
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<xs:documentation>第 4.0 版修正</xs:documentation>
</xs:annotation>
</xs:element>
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<xs:element name="maximumBuildingHeight" type="gml:StringOrRefType"/>
<xs:element name="setbackSize" type="gml:StringOrRefType"/>
<xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
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<xs:sequence minOccurs="0">
<xs:element ref="urf:SpecialUrbanRenaissanceDistrict"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 居住調整地域 ===== -->
<xs:element name="HousingControlArea" type="urf:HousingControlAreaType"
substitutionGroup="urf:DistrictsAndZones">
<xs:annotation>
<xs:documentation>居住調整地域</xs:documentation>
</xs:annotation>
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<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="HousingControlAreaPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:HousingControlArea"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 居住環境向上用途誘導地区 ===== -->
<xs:element name="ResidentialEnvironmentImprovementDistrict"
type="urf:ResidentialEnvironmentImprovementDistrictType" substitutionGroup="urf:DistrictsAndZones">
<xs:annotation>
<xs:documentation>居住環境向上用途誘導地区</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="ResidentialEnvironmentImprovementDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="useToBeInduced" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="maximumFloorAreaRate" type="xs:integer" minOccurs="0">
<xs:annotation>
<xs:documentation>第 4.0 版修正</xs:documentation>
</xs:annotation>
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<xs:element name="maximumBuildingCoverageRate" type="xs:integer" minOccurs="0">
<xs:annotation>
<xs:documentation>第 4.0 版修正</xs:documentation>
</xs:annotation>
</xs:element>

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<xs:element name="maximumBuildingHeight" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
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<xs:complexType name="ResidentialEnvironmentImprovementDistrictPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:ResidentialEnvironmentImprovementDistrict"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 特定用途誘導地区 ===== -->
<xs:element name="SpecialUseAttractionDistrict" type="urf:SpecialUseAttractionDistrictType"
substitutionGroup="urf:DistrictsAndZones">
<xs:annotation>
<xs:documentation>特定用途誘導地区</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="SpecialUseAttractionDistrictType">
<xs:complexContent>
<xs:extension base="urf:DistrictsAndZonesType">
<xs:sequence>
<xs:element name="useToBeInduced" type="gml:StringOrRefType"/>
<xs:element name="maximumFloorAreaRate" type="xs:integer">
<xs:annotation>
<xs:documentation>第 4.0 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="minimumFloorAreaRate" type="xs:integer" minOccurs="0">
<xs:annotation>
<xs:documentation>第 4.0 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="minimumBuildingArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="maximumBuildingHeight" type="gml:StringOrRefType" minOccurs="0">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="otherRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="SpecialUseAttractionDistrictPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:SpecialUseAttractionDistrict"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 防火地域及び準防火地域 ===== -->
<xs:element name="FirePreventionDistrict" type="urf:FirePreventionDistrictType"
substitutionGroup="urf:DistrictsAndZones">
<xs:annotation>
<xs:documentation>防火地域及び準防火地域</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="FirePreventionDistrictType">

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<xs:complexContent>
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  </xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="FirePreventionDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:FirePreventionDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 特定防災街区整備地区 ===== -->
<xs:element name="SpecifiedDisasterPreventionBlockImprovementZone"
type="urf:SpecifiedDisasterPreventionBlockImprovementZoneType" substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>特定防災街区整備地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SpecifiedDisasterPreventionBlockImprovementZoneType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="minimumSiteArea" type="gml:MeasureType"/>
        <xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="minimumFrontageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SpecifiedDisasterPreventionBlockImprovementZonePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SpecifiedDisasterPreventionBlockImprovementZone"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 景観地区 ===== -->
<xs:element name="LandscapeZone" type="urf:LandscapeZoneType" substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>景観地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="LandscapeZoneType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="buildingDesignRestriction" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="minimumSiteArea" type="gml:MeasureType" minOccurs="0"/>
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    </xs:extension>
  </xs:complexContent>

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</xs:complexType>
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  <xs:sequence minOccurs="0">
    <xs:element ref="urf:LandscapeZone"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 風致地区 ===== -->
<xs:element name="ScenicDistrict" type="urf:ScenicDistrictType" substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>風致地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ScenicDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="buildingCoverageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="buildingHeightLimits" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="wallSetbackDistanceWithRoad" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="wallSetbackDistanceWithAdjoiningLand" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ScenicDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ScenicDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 駐車場整備地区 ===== -->
<xs:element name="ParkingPlaceDevelopmentZone" type="urf:ParkingPlaceDevelopmentZoneType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>駐車場整備地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ParkingPlaceDevelopmentZoneType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ParkingPlaceDevelopmentZonePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ParkingPlaceDevelopmentZone"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 臨港地区 ===== -->
<xs:element name="PortZone" type="urf:PortZoneType" substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>臨港地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="PortZoneType">

```



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<xs:complexContent>
  <xs:extension base="urf:DistrictsAndZonesType">
    <xs:sequence>
      <xs:element name="floorAreaRate" type="xs:integer" minOccurs="0">
        <xs:annotation>
          <xs:documentation>第 4.0 版修正</xs:documentation>
        </xs:annotation>
      </xs:element>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="PortZonePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:PortZone"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 歴史的風土特別保存地区 ===== -->
<xs:element name="SpecialZoneForPreservationOfHistoricalLandscape"
type="urf:SpecialZoneForPreservationOfHistoricalLandscapeType" substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>歴史的風土特別保存地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SpecialZoneForPreservationOfHistoricalLandscapeType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SpecialZoneForPreservationOfHistoricalLandscapePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SpecialZoneForPreservationOfHistoricalLandscape"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 第一種・第二種歴史的風土保存地区 ===== -->
<xs:element name="ZoneForPreservationOfHistoricalLandscape"
type="urf:ZoneForPreservationOfHistoricalLandscapeType" substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>第一種・第二種歴史的風土保存地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ZoneForPreservationOfHistoricalLandscapeType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ZoneForPreservationOfHistoricalLandscapePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ZoneForPreservationOfHistoricalLandscape"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 緑地保全地域 ===== -->

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<xs:element name="GreenSpaceConservationDistrict" type="urf:GreenSpaceConservationDistrictType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>緑地保全地域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="GreenSpaceConservationDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="GreenSpaceConservationDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:GreenSpaceConservationDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 特別緑地保全地域 ===== -->
<xs:element name="SpecialGreenSpaceConservationDistrict" type="urf:SpecialGreenSpaceConservationDistrictType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>特別緑地保全地域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SpecialGreenSpaceConservationDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="requirement" type="gml:CodeType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>SpecialGreenSpaceConservationDistricts_requirement.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SpecialGreenSpaceConservationDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SpecialGreenSpaceConservationDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 緑化地域 ===== -->
<xs:element name="TreePlantingDistrict" type="urf:TreePlantingDistrictType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>緑化地域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="TreePlantingDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="minimumGreeningRate" type="xs:integer">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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    </xs:element>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="TreePlantingDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:TreePlantingDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 流通業務地区 ===== -->
<xs:element name="DistributionBusinessZone" type="urf:DistributionBusinessZoneType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>流通業務地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="DistributionBusinessZoneType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="guidelinePublicationDate" type="xs:date" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="DistributionBusinessZonePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DistributionBusinessZone"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 生産緑地地区 ===== -->
<xs:element name="ProductiveGreenZone" type="urf:ProductiveGreenZoneType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>生産緑地地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ProductiveGreenZoneType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence>
        <xs:element name="zoneNumber" type="xs:string" minOccurs="0"/>
        <xs:element name="specification" type="gml:CodeType" minOccurs="0">
          <xs:annotation>
            <xs:documentation>Common_availabilityType.xml</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ProductiveGreenZonePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ProductiveGreenZone"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>

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</xs:complexType>
<!-- ===== 傳統的建造物群保存地区 ===== -->
<xs:element name="ConservationZoneForClustersOfTraditionalStructures"
type="urf:ConservationZoneForClustersOfTraditionalStructuresType" substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>傳統的建造物群保存地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ConservationZoneForClustersOfTraditionalStructuresType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ConservationZoneForClustersOfTraditionalStructuresPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ConservationZoneForClustersOfTraditionalStructures"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 航空機騒音障害防止地区 ===== -->
<xs:element name="AircraftNoiseControlZone" type="urf:AircraftNoiseControlZoneType"
substitutionGroup="urf:DistrictsAndZones">
  <xs:annotation>
    <xs:documentation>航空機騒音障害防止地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="AircraftNoiseControlZoneType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictsAndZonesType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="AircraftNoiseControlZonePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:AircraftNoiseControlZone"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 促進区域 ===== -->
<xs:element name="ProjectPromotionArea" type="urf:ProjectPromotionAreaType" substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>促進区域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ProjectPromotionAreaType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="developmentPolicy" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="publicFacilitiesPlans" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ProjectPromotionAreaPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ProjectPromotionArea"/>
  </xs:sequence>

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</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 市街地再開発促進区域 -->
<xs:element name="UrbanRedevelopmentPromotionArea" type="urf:UrbanRedevelopmentPromotionAreaType"
substitutionGroup="urf:ProjectPromotionArea">
<xs:annotation>
<xs:documentation>市街地再開発促進区域</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="UrbanRedevelopmentPromotionAreaType">
<xs:complexContent>
<xs:extension base="urf:ProjectPromotionAreaType">
<xs:sequence>
<xs:element name="publicFacilities" type="gml:StringOrRefType"/>
<xs:element name="unitArea" type="gml:StringOrRefType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="UrbanRedevelopmentPromotionAreaPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:UrbanRedevelopmentPromotionArea"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 土地区画整理促進区域 -->
<xs:element name="LandReadjustmentPromotionArea" type="urf:LandReadjustmentPromotionAreaType"
substitutionGroup="urf:ProjectPromotionArea">
<xs:annotation>
<xs:documentation>土地区画整理促進区域</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="LandReadjustmentPromotionAreaType">
<xs:complexContent>
<xs:extension base="urf:ProjectPromotionAreaType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="LandReadjustmentPromotionAreaPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:LandReadjustmentPromotionArea"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 住宅街区整備促進区域 -->
<xs:element name="ResidentialBlockConstructionPromotionArea"
type="urf:ResidentialBlockConstructionPromotionAreaType" substitutionGroup="urf:ProjectPromotionArea">
<xs:annotation>
<xs:documentation>住宅街区整備促進区域</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="ResidentialBlockConstructionPromotionAreaType">
<xs:complexContent>
<xs:extension base="urf:ProjectPromotionAreaType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>

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</xs:complexType>
<xs:complexType name="ResidentialBlockConstructionPromotionAreaPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ResidentialBlockConstructionPromotionArea"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 拠点業務市街地整備土地区画整理促進区域 -->
<xs:element name="LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopment"
type="urf:LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopmentType"
substitutionGroup="urf:ProjectPromotionArea">
  <xs:annotation>
    <xs:documentation>拠点業務市街地整備土地区画整理促進区域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopmentType">
  <xs:complexContent>
    <xs:extension base="urf:ProjectPromotionAreaType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopmentPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:LandReadjustmentPromotionAreasForCoreBusinessUrbanDevelopment"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== その他の地区、地域 ===== -->
<!-- 遊休土地転換利用促進地区 -->
<xs:element name="UnusedLandUsePromotionArea" type="urf:UnusedLandUsePromotionAreaType"
substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>遊休土地転換利用促進地区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UnusedLandUsePromotionAreaType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="UnusedLandUsePromotionAreaPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UnusedLandUsePromotionArea"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 被災市街地復興推進地域 -->
<xs:element name="UrbanDisasterRecoveryPromotionArea" type="urf:UrbanDisasterRecoveryPromotionAreaType"
substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>被災市街地復興推進地域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrbanDisasterRecoveryPromotionAreaType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="expirationDate" type="xs:date"/>
        <xs:element name="emergencyRecoveryPolicy" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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    <xs:element name="plannedProjectType" type="gml:CodeType" minOccurs="0"/>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="UrbanDisasterRecoveryPromotionAreaPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UrbanDisasterRecoveryPromotionArea"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 市街地開発事業 ===== -->
<xs:element name="UrbanDevelopmentProject" type="urf:UrbanDevelopmentProjectType"
substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>市街地開発事業</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrbanDevelopmentProjectType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="scheduledExecutor" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="UrbanDevelopmentProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UrbanDevelopmentProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 土地区画整理事業 -->
<xs:element name="LandReadjustmentProject" type="urf:LandReadjustmentProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
  <xs:annotation>
    <xs:documentation>土地区画整理事業</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="LandReadjustmentProjectType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanDevelopmentProjectType">
      <xs:sequence>
        <xs:element name="publicFacilityAllocation" type="gml:StringOrRefType"/>
        <xs:element name="buildingLotDevelopment" type="gml:StringOrRefType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="LandReadjustmentProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:LandReadjustmentProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 新住宅市街地開発事業 -->
<xs:element name="NewHousingAndUrbanDevelopmentProject"
type="urf:NewHousingAndUrbanDevelopmentProjectType" substitutionGroup="urf:UrbanDevelopmentProject">

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<xs:annotation>
  <xs:documentation>新住宅市街地開発事業</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="NewHousingAndUrbanDevelopmentProjectType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanDevelopmentProjectType">
      <xs:sequence>
        <xs:element name="housing" type="gml:StringOrRefType"/>
        <xs:element name="publicFacilityAllocation" type="gml:StringOrRefType"/>
        <xs:element name="residentialLandUsePlan" type="gml:StringOrRefType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="NewHousingAndUrbanDevelopmentProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:NewHousingAndUrbanDevelopmentProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 工業団地造成事業 -->
<xs:element name="IndustrialParkDevelopmentProject" type="urf:IndustrialParkDevelopmentProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
  <xs:annotation>
    <xs:documentation>工業団地造成事業</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="IndustrialParkDevelopmentProjectType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanDevelopmentProjectType">
      <xs:sequence>
        <xs:element name="publicFacilityAllocation" type="gml:StringOrRefType"/>
        <xs:element name="residentialLandUsePlan" type="gml:StringOrRefType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="IndustrialParkDevelopmentProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:IndustrialParkDevelopmentProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 市街地再開発事業 -->
<xs:element name="UrbanRedevelopmentProject" type="urf:UrbanRedevelopmentProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
  <xs:annotation>
    <xs:documentation>市街地再開発事業</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrbanRedevelopmentProjectType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanDevelopmentProjectType">
      <xs:sequence>
        <xs:element name="publicFacilityAllocation" type="gml:StringOrRefType"/>
        <xs:element name="developmentPlan" type="gml:StringOrRefType"/>
        <xs:element name="housingTarget" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="siteArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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    <xs:element name="numberOfHousing" type="xs:integer" minOccurs="0"/>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="UrbanRedevelopmentProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UrbanRedevelopmentProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 新都市基盤整備事業 -->
<xs:element name="NewUrbanInfrastructureProject" type="urf:NewUrbanInfrastructureProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
  <xs:annotation>
    <xs:documentation>新都市基盤整備事業</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="NewUrbanInfrastructureProjectType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanDevelopmentProjectType">
      <xs:sequence>
        <xs:element name="landForCentralPublicFacilities" type="gml:StringOrRefType"/>
        <xs:element name="districtsAllocation" type="gml:StringOrRefType"/>
        <xs:element name="landUsePlan" type="gml:StringOrRefType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="NewUrbanInfrastructureProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:NewUrbanInfrastructureProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 住宅街区整備事業 -->
<xs:element name="ResidentialBlockConstructionProject" type="urf:ResidentialBlockConstructionProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
  <xs:annotation>
    <xs:documentation>住宅街区整備事業</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ResidentialBlockConstructionProjectType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanDevelopmentProjectType">
      <xs:sequence>
        <xs:element name="publicFacilityAllocation" type="gml:StringOrRefType"/>
        <xs:element name="developmentPlan" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="siteArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="totalFloorArea" type="gml:MeasureType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ResidentialBlockConstructionProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ResidentialBlockConstructionProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>

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</xs:complexType>
<!-- 防災街区整備事業 -->
<xs:element name="DisasterPreventionBlockImprovementProject"
type="urf:DisasterPreventionBlockImprovementProjectType" substitutionGroup="urf:UrbanDevelopmentProject">
  <xs:annotation>
    <xs:documentation>防災街区整備事業</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="DisasterPreventionBlockImprovementProjectType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanDevelopmentProjectType">
      <xs:sequence>
        <xs:element name="disasterPreventionPublicFacilityAllocation" type="gml:StringOrRefType"/>
        <xs:element name="otherPublicFacilityAllocation" type="gml:StringOrRefType"/>
        <xs:element name="developmentPlan" type="gml:StringOrRefType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="DisasterPreventionBlockImprovementProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DisasterPreventionBlockImprovementProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 市街地改造事業 -->
<xs:element name="UrbanRenewalProject" type="urf:UrbanRenewalProjectType"
substitutionGroup="urf:UrbanDevelopmentProject">
  <xs:annotation>
    <xs:documentation>市街地改造事業</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrbanRenewalProjectType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanDevelopmentProjectType">
      <xs:sequence>
        <xs:element name="storeysAboveGround" type="xs:nonNegativeInteger" minOccurs="0"/>
        <xs:element name="storeysBelowGround" type="xs:nonNegativeInteger" minOccurs="0"/>
        <xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="floorAreaRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="buildingUsage" type="xs:string" minOccurs="0"/>
        <xs:element name="siteArea" type="gml:MeasureType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="UrbanRenewalProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UrbanRenewalProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 市街地開発事業等の予定区域 ===== -->
<xs:element name="ScheduledAreaForUrbanDevelopmentProject"
type="urf:ScheduledAreaForUrbanDevelopmentProjectType" substitutionGroup="urf:Zone">
  <xs:annotation>

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<xs:documentation>市街地開発事業等の予定区域</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="ScheduledAreaForUrbanDevelopmentProjectType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="scheduledExecutor" type="xs:string"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="ScheduledAreaForUrbanDevelopmentProjectPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:ScheduledAreaForUrbanDevelopmentProject"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 新住宅市街地開発事業の予定区域 -->
<xs:element name="ScheduledAreaForNewHousingAndUrbanDevelopmentProjects"
type="urf:ScheduledAreaForNewHousingAndUrbanDevelopmentProjectsType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
<xs:annotation>
<xs:documentation>新住宅市街地開発事業の予定区域</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="ScheduledAreaForNewHousingAndUrbanDevelopmentProjectsType">
<xs:complexContent>
<xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType"/>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="ScheduledAreaForNewHousingAndUrbanDevelopmentProjectsPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:ScheduledAreaForNewHousingAndUrbanDevelopmentProjects"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 工業団地造成事業の予定区域 -->
<xs:element name="ScheduledAreaForIndustrialParkDevelopmentProjects"
type="urf:ScheduledAreaForIndustrialParkDevelopmentProjectsType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
<xs:annotation>
<xs:documentation>工業団地造成事業の予定区域</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="ScheduledAreaForIndustrialParkDevelopmentProjectsType">
<xs:complexContent>
<xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType"/>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="ScheduledAreaForIndustrialParkDevelopmentProjectsPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:ScheduledAreaForIndustrialParkDevelopmentProjects"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 新都市基盤整備事業の予定区域 -->

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<xs:element name="ScheduledAreaForNewUrbanInfrastructureProjects"
type="urf:ScheduledAreaForNewUrbanInfrastructureProjectsType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
  <xs:annotation>
    <xs:documentation>新都市基盤整備事業の予定区域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ScheduledAreaForNewUrbanInfrastructureProjectsType">
  <xs:complexContent>
    <xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ScheduledAreaForNewUrbanInfrastructureProjectsPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ScheduledAreaForNewUrbanInfrastructureProjects"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 一団地の住宅施設の予定区域 -->
<xs:element name="ScheduledAreaForCollectiveHousingFacilities"
type="urf:ScheduledAreaForCollectiveHousingFacilitiesType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
  <xs:annotation>
    <xs:documentation>一団地の住宅施設の予定区域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ScheduledAreaForCollectiveHousingFacilitiesType">
  <xs:complexContent>
    <xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ScheduledAreaForCollectiveHousingFacilitiesPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ScheduledAreaForCollectiveHousingFacilities"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 一団地の官公庁施設の予定区域 -->
<xs:element name="ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilities"
type="urf:ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilitiesType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">
  <xs:annotation>
    <xs:documentation>一団地の官公庁施設の予定区域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilitiesType">
  <xs:complexContent>
    <xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilitiesPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ScheduledAreaForCollectiveGovernmentAndPublicOfficeFacilities"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 流通業務業団地の予定区域 -->
<xs:element name="ScheduledAreaForDistributionBusinessPark"
type="urf:ScheduledAreaForDistributionBusinessParkType"
substitutionGroup="urf:ScheduledAreaForUrbanDevelopmentProject">

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<xs:annotation>
  <xs:documentation>流通事業団地の予定区域</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="ScheduledAreaForDistributionBusinessParkType">
  <xs:complexContent>
    <xs:extension base="urf:ScheduledAreaForUrbanDevelopmentProjectType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ScheduledAreaForDistributionBusinessParkPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ScheduledAreaForDistributionBusinessPark"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 都市施設 ===== -->
<xs:element name="UrbanFacility" type="urf:UrbanFacilityType" substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>法第 11 条 都市施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrbanFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="number" type="xs:string" minOccurs="0"/>
        <xs:element name="threeDimensionalExtent" type="urf:ThreeDimensionalExtentPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="UrbanFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UrbanFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 交通施設 -->
<xs:element name="TrafficFacility" type="urf:TrafficFacilityType" substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>法第 11 条第 1 項 交通施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="TrafficFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="startLocation" type="xs:string" minOccurs="0"/>
        <xs:element name="endLocation" type="xs:string" minOccurs="0"/>
        <xs:element name="viaLocations" type="xs:string" minOccurs="0"/>
        <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="urbanRoadAttribute" type="urf:UrbanRoadAttributePropertyType" minOccurs="0"/>
        <xs:element name="urbanRapidTransitRailroadAttribute"
type="urf:UrbanRapidTransitRailroadAttributePropertyType" minOccurs="0"/>
        <xs:element name="parkingPlaceAttribute" type="urf:ParkingPlaceAttributePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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    <xs:element name="vehicleTerminalAttribute" type="urf:VehicleTerminalAttributePropertyType" minOccurs="0"/>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="TrafficFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:TrafficFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 道路 -->
<xs:element name="UrbanRoadAttribute" type="urf:UrbanRoadAttributeType">
  <xs:annotation>
    <xs:documentation>法第 11 条第 1 項 道路</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrbanRoadAttributeType">
  <xs:sequence>
    <xs:element name="routeTypeNumber" type="gml:CodeType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>UrbanRoad_routeTypeNumber.xml</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="routeSizeNumber" type="gml:CodeType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>UrbanRoad_routeSizeNumber.xml</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="routeSerialNumber" type="xs:string" minOccurs="0"/>
    <xs:element name="roadType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="numberOfLanes" type="xs:integer" minOccurs="0"/>
    <xs:element name="roadStructure" type="gml:StringOrRefType" minOccurs="0"/>
    <xs:element name="structureType" type="gml:CodeType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>TransportationFacility_structureType.xml</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="crossType" type="gml:CodeType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>TransportationFacility_crossType.xml</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="trafficPlazas" type="gml:CodeType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Common_availabilityType.xml</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="structuralDetails" type="urf:StructureDetailsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="UrbanRoadAttributePropertyType">
  <xs:sequence>
    <xs:element ref="urf:UrbanRoadAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- 構造形式の内訳 -->
<xs:element name="StructureDetails" type="urf:StructureDetailsType">
  <xs:annotation>

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```

<xs:documentation>構造形式の内訳</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="StructureDetailsType">
<xs:sequence>
<xs:element name="startLocation" type="xs:string">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="endLocation" type="xs:string">
<xs:annotation>
<xs:documentation>第 3.2 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="viaLocations" type="xs:string" minOccurs="0"/>
<xs:element name="length" type="gml:LengthType" minOccurs="0"/>
<xs:element name="structureType" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>TransportationFacility_structureType.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="minimumWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maximumWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="standardWidth" type="gml:LengthType" minOccurs="0"/>
<xs:element name="crossType" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>TransportationFacility_crossType.xml</xs:documentation>
</xs:annotation>
</xs:element>
</xs:sequence>
</xs:complexType>
<xs:complexType name="StructureDetailsPropertyType">
<xs:sequence>
<xs:element ref="urf:StructureDetails"/>
</xs:sequence>
</xs:complexType>
<!-- 都市高速鉄道 -->
<xs:element name="UrbanRapidTransitRailroadAttribute" type="urf:UrbanRapidTransitRailroadAttributeType">
<xs:annotation>
<xs:documentation>法第 11 条第 1 項 都市高速鉄道</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="UrbanRapidTransitRailroadAttributeType">
<xs:sequence>
<xs:element name="structureType" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>TransportationFacility_structureType.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="crossType" type="gml:CodeType" minOccurs="0">
<xs:annotation>
<xs:documentation>TransportationFacility_crossType.xml</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="structuralDetails" type="urf:StructureDetailsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:complexType>

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<xs:complexType name="UrbanRapidTransitRailroadAttributePropertyType">
  <xs:sequence>
    <xs:element ref="urf:UrbanRapidTransitRailroadAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- 駐車場 -->
<xs:element name="ParkingPlaceAttribute" type="urf:ParkingPlaceAttributeType">
  <xs:annotation>
    <xs:documentation>法第 11 条第 1 項 駐車場</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ParkingPlaceAttributeType">
  <xs:sequence>
    <xs:element name="storeysAboveGround" type="xs:nonNegativeInteger">
      <xs:annotation>
        <xs:documentation>第 3.2 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="storeysBelowGround" type="xs:nonNegativeInteger">
      <xs:annotation>
        <xs:documentation>第 3.2 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ParkingPlaceAttributePropertyType">
  <xs:sequence>
    <xs:element ref="urf:ParkingPlaceAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- 自動車ターミナル -->
<xs:element name="VehicleTerminalAttribute" type="urf:VehicleTerminalAttributeType">
  <xs:annotation>
    <xs:documentation>法第 11 条第 1 項 自動車ターミナル</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="VehicleTerminalAttributeType">
  <xs:sequence>
    <xs:element name="terminalType" type="gml:CodeType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="VehicleTerminalAttributePropertyType">
  <xs:sequence>
    <xs:element ref="urf:VehicleTerminalAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- 公共空地 -->
<xs:element name="OpenSpaceForPublicUse" type="urf:OpenSpaceForPublicUseType"
substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>法第 11 条第 2 項 公共空地</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="OpenSpaceForPublicUseType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="parkAttribute" type="urf:ParkAttributePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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</xs:complexContent>
</xs:complexType>
<xs:complexType name="OpenSpaceForPublicUsePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:OpenSpaceForPublicUse"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 公園属性 -->
<xs:element name="ParkAttribute" type="urf:ParkAttributeType">
  <xs:annotation>
    <xs:documentation>法第 11 条第 2 項 公園</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ParkAttributeType">
  <xs:sequence>
    <xs:element name="parkTypeNumber" type="gml:CodeType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Park_parkTypeNumber.xml</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="parkSizeNumber" type="gml:CodeType" minOccurs="0">
      <xs:annotation>
        <xs:documentation>Park_parkSizeNumber.xml</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="parkSerialNumber" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ParkAttributePropertyType">
  <xs:sequence>
    <xs:element ref="urf:ParkAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- 供給施設 -->
<xs:element name="SupplyFacility" type="urf:SupplyFacilityType" substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>法第 11 条第 3 項 供給施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SupplyFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="waterWorksAttribute" type="urf:WaterWorksAttributePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SupplyFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SupplyFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 水道属性 -->
<xs:element name="WaterWorksAttribute" type="urf:WaterWorksAttributeType">
  <xs:annotation>
    <xs:documentation>法第 11 条第 3 項 水道</xs:documentation>
  </xs:annotation>

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</xs:annotation>
</xs:element>
<xs:complexType name="WaterWorksAttributeType">
  <xs:sequence>
    <xs:element name="startLocation" type="xs:string" minOccurs="0"/>
    <xs:element name="endLocation" type="xs:string" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="WaterWorksAttributePropertyType">
  <xs:sequence>
    <xs:element ref="urf:WaterWorksAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- 処理施設 -->
<xs:element name="TreatmentFacility" type="urf:TreatmentFacilityType" substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>法第 11 条第 3 項 処理施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="TreatmentFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="sewerSystemsAttribute" type="urf:SewerSystemAttributePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="TreatmentFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:TreatmentFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 下水道属性 -->
<xs:element name="SewerSystemAttribute" type="urf:SewerSystemAttributeType">
  <xs:annotation>
    <xs:documentation>法第 11 条第 3 項 下水道</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SewerSystemAttributeType">
  <xs:sequence>
    <xs:element name="startLocation" type="xs:string" minOccurs="0"/>
    <xs:element name="endLocation" type="xs:string" minOccurs="0"/>
    <xs:element name="systemType" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="drainageArea" type="gml:StringOrRefType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="SewerSystemAttributePropertyType">
  <xs:sequence>
    <xs:element ref="urf:SewerSystemAttribute"/>
  </xs:sequence>
</xs:complexType>
<!-- 水路 -->
<xs:element name="Waterway" type="urf:WaterwayType" substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>法第 11 条第 4 項 水路</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="WaterwayType">

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<xs:complexContent>
  <xs:extension base="urf:UrbanFacilityType">
    <xs:sequence>
      <xs:element name="startLocation" type="xs:string" minOccurs="0"/>
      <xs:element name="endLocation" type="xs:string" minOccurs="0"/>
      <xs:element name="structure" type="gml:CodeType" minOccurs="0">
        <xs:annotation>
          <xs:documentation>Waterway_structure.xml</xs:documentation>
        </xs:annotation>
      </xs:element>
      <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
      <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="WaterwayPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:Waterway"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 教育文化施設 -->
<xs:element name="EducationalAndCulturalFacility" type="urf:EducationalAndCulturalFacilityType"
substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>法第 11 条第 5 項 教育文化施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="EducationalAndCulturalFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="EducationalAndCulturalFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:EducationalAndCulturalFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 医療施設 -->
<xs:element name="MedicalFacility" type="urf:MedicalFacilityType" substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>法第 11 条第 6 項 医療施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="MedicalFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="MedicalFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:MedicalFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 社会福祉施設 -->
<xs:element name="SocialWelfareFacility" type="urf:SocialWelfareFacilityType" substitutionGroup="urf:UrbanFacility">

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<xs:annotation>
  <xs:documentation>法第 11 条第 6 項 社会福祉施設</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="SocialWelfareFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SocialWelfareFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SocialWelfareFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 市場、と畜場又は火葬場 -->
<xs:element name="MarketsSlaughterhousesCrematoria" type="urf:MarketsSlaughterhousesCrematoriaType"
substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>法第 11 条第 7 項 市場、と畜場又は火葬場</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="MarketsSlaughterhousesCrematoriaType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="MarketsSlaughterhousesCrematoriaPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:MarketsSlaughterhousesCrematoria"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 一団地の住宅施設 -->
<xs:element name="CollectiveHousingFacilities" type="urf:CollectiveHousingFacilitiesType"
substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>一団地の住宅施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="CollectiveHousingFacilitiesType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="buildingCoverageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="floorAreaRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="numberOfLowRiseHousing" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfMiddleRiseHousing" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfHighRiseHousing" type="xs:integer" minOccurs="0"/>
        <xs:element name="totalNumberOfHousing" type="xs:integer" minOccurs="0"/>
        <xs:element name="publicFacilitiesAllocationPolicy" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="scheduledExecutor" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>

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    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="CollectiveHousingFacilitiesPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:CollectiveHousingFacilities"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 一団地の官公庁施設 -->
<xs:element name="CollectiveGovernmentAndPublicOfficeFacilities"
type="urf:CollectiveGovernmentAndPublicOfficeFacilitiesType" substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>一団地の官公庁施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="CollectiveGovernmentAndPublicOfficeFacilitiesType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="buildingCoverageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="floorAreaRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="publicFacilitiesAllocationPolicy" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="scheduledExecutor" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="CollectiveGovernmentAndPublicOfficeFacilitiesPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:CollectiveGovernmentAndPublicOfficeFacilities"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 一団地の都市安全確保拠点施設 -->
<xs:element name="CollectiveUrbanDisasterPreventionFacilities"
type="urf:CollectiveUrbanDisasterPreventionFacilitiesType" substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>一団地の都市安全確保拠点施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="CollectiveUrbanDisasterPreventionFacilitiesType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="specificUtilityAndPublicFacilities" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="maximumFloorAreaRate" type="xs:integer" minOccurs="0">
          <xs:annotation>

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    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="minimumFloorAreaRate" type="xs:integer" minOccurs="0">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="maximumBuildingCoverageRate" type="xs:integer" minOccurs="0">
  <xs:annotation>
    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="CollectiveUrbanDisasterPreventionFacilitiesPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:CollectiveUrbanDisasterPreventionFacilities"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 流通業務団地 -->
<xs:element name="DistributionBusinessPark" type="urf:DistributionBusinessParkType"
substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>流通業務団地</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="DistributionBusinessParkType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="distributionBusinessPark" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="publicAndUtilityFacilities" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="buildingCoverageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="floorAreaRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="scheduledExecutor" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="DistributionBusinessParkPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DistributionBusinessPark"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

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<!-- その他政令で定める施設 -->
<xs:element name="UrbanFacilityStipulatedByCabinetOrder" type="urf:UrbanFacilityStipulatedByCabinetOrderType"
substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>法第 11 条第 1 項第 15 号 その他政令で定める施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrbanFacilityStipulatedByCabinetOrderType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="width" type="gml:LengthType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="UrbanFacilityStipulatedByCabinetOrderPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UrbanFacilityStipulatedByCabinetOrder"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 電気通信事業用施設 -->
<xs:element name="TelecommunicationFacility" type="urf:TelecommunicationFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
  <xs:annotation>
    <xs:documentation>政令第 5 条 電気通信事業用施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="TelecommunicationFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="TelecommunicationFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:TelecommunicationFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 防風施設 -->
<xs:element name="WindProtectionFacility" type="urf:WindProtectionFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
  <xs:annotation>
    <xs:documentation>政令第 5 条 防風施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="WindProtectionFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="WindProtectionFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:WindProtectionFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

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<!-- 防火施設 -->
<xs:element name="FireProtectionFacility" type="urf:FireProtectionFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
  <xs:annotation>
    <xs:documentation>政令第 5 条 防火施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="FireProtectionFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="FireProtectionFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:FireProtectionFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 防水施設 -->
<xs:element name="FloodPreventionFacility" type="urf:FloodPreventionFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
  <xs:annotation>
    <xs:documentation>政令第 5 条 防水施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="FloodPreventionFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="FloodPreventionFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:FloodPreventionFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 防雪施設 -->
<xs:element name="SnowProtectionFacility" type="urf:SnowProtectionFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
  <xs:annotation>
    <xs:documentation>政令第 5 条 防雪施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SnowProtectionFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SnowProtectionFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SnowProtectionFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 防砂施設 -->
<xs:element name="SandControlFacility" type="urf:SandControlFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
  <xs:annotation>
    <xs:documentation>政令第 5 条 防砂施設</xs:documentation>
  </xs:annotation>

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</xs:element>
<xs:complexType name="SandControlFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SandControlFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SandControlFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 防潮施設 -->
<xs:element name="TideFacility" type="urf:TideFacilityType"
substitutionGroup="urf:UrbanFacilityStipulatedByCabinetOrder">
  <xs:annotation>
    <xs:documentation>政令第 5 条 防潮施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="TideFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityStipulatedByCabinetOrderType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="TideFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:TideFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 一団地の津波防災拠点市街地形成施設 -->
<xs:element name="CollectiveFacilitiesForTsunamiDisasterPrevention"
type="urf:CollectiveFacilitiesForTsunamiDisasterPreventionType" substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>一団地の津波防災拠点市街地形成施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="CollectiveFacilitiesForTsunamiDisasterPreventionType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="housingFacilities" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="supecificBusinessFacilities" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="publicFacilities" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="utilityFacilities" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="maximumFloorAreaRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="minimumFloorAreaRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="maximumBuildingCoverageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>

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    <xs:documentation>第 4.0 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="CollectiveFacilitiesForTsunamiDisasterPreventionPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:CollectiveFacilitiesForTsunamiDisasterPrevention"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 一団地の復興再生拠点市街地形成施設 -->
<xs:element name="CollectiveFacilitiesForReconstructionAndRevitalization"
type="urf:CollectiveFacilitiesForReconstructionAndRevitalizationType" substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>一団地の復興再生拠点市街地形成施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="CollectiveFacilitiesForReconstructionAndRevitalizationType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFacilityType">
      <xs:sequence>
        <xs:element name="housingFacilities" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="supecificBusinessFacilities" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="publicFacilities" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="utilityFacilities" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="maximumFloorAreaRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="minimumFloorAreaRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="maximumBuildingCoverageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="CollectiveFacilitiesForReconstructionAndRevitalizationPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:CollectiveFacilitiesForReconstructionAndRevitalization"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 一団地の復興拠点市街形成施設 -->
<xs:element name="CollectiveFacilitiesForReconstruction" type="urf:CollectiveFacilitiesForReconstructionType"
substitutionGroup="urf:UrbanFacility">
  <xs:annotation>
    <xs:documentation>一団地の復興拠点市街形成施設</xs:documentation>
  </xs:annotation>

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</xs:annotation>
</xs:element>
<xs:complexType name="CollectiveFacilitiesForReconstructionType">
<xs:complexContent>
<xs:extension base="urf:UrbanFacilityType">
<xs:sequence>
<xs:element name="housingFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="supecificBusinessFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="publicFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="utilityFacilities" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
<xs:element name="maximumFloorAreaRate" type="xs:integer" minOccurs="0">
<xs:annotation>
<xs:documentation>第 4.0 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="minimumFloorAreaRate" type="xs:integer" minOccurs="0">
<xs:annotation>
<xs:documentation>第 4.0 版修正</xs:documentation>
</xs:annotation>
</xs:element>
<xs:element name="maximumBuildingCoverageRate" type="xs:integer" minOccurs="0">
<xs:annotation>
<xs:documentation>第 4.0 版修正</xs:documentation>
</xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="CollectiveFacilitiesForReconstructionPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:CollectiveFacilitiesForReconstruction"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== 地区計画等 ===== -->
<xs:element name="_AbstractDistrictPlan" type="urf:AbstractDistrictPlanType" abstract="true"
substitutionGroup="urf:Zone">
<xs:annotation>
<xs:documentation>法第 12 条の 4 第 1 項 地区計画等</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="AbstractDistrictPlanType" abstract="true">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="objectives" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="policy" type="gml:StringOrRefType" minOccurs="0"/>
<xs:element name="districtDevelopmentPlan" type="urf:DistrictDevelopmentPlanPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
<xs:element name="promotionDistrict" type="urf:PromotionDistrictPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="AbstractDistrictPlanPropertyType">

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<xs:sequence minOccurs="0">
  <xs:element ref="urf:_AbstractDistrictPlan"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 地区計画 -->
<xs:element name="DistrictPlan" type="urf:DistrictPlanType" substitutionGroup="urf:_AbstractDistrictPlan">
  <xs:annotation>
    <xs:documentation>法第 12 条の 4 第 1 項第 1 号 地区計画</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="DistrictPlanType">
  <xs:complexContent>
    <xs:extension base="urf:AbstractDistrictPlanType">
      <xs:sequence>
        <xs:element name="facilityAllocation" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="landUsePolicy" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="DistrictPlanPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DistrictPlan"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 防災街区整備地区計画 -->
<xs:element name="DisasterPreventionBlockImprovementZonePlan"
type="urf:DisasterPreventionBlockImprovementZonePlanType" substitutionGroup="urf:_AbstractDistrictPlan">
  <xs:annotation>
    <xs:documentation>法第 12 条の 4 第 1 項第 2 号 防災街区整備地区計画</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="DisasterPreventionBlockImprovementZonePlanType">
  <xs:complexContent>
    <xs:extension base="urf:AbstractDistrictPlanType">
      <xs:sequence>
        <xs:element name="zonalDisasterPreventionFacilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="specifiedZonalDisasterPreventionFacilitiesAllocation" type="gml:StringOrRefType"
minOccurs="0"/>
        <xs:element name="zonalDisasterPreventionFacilities" type="urf:ZonalDisasterPreventionFacilityPropertyType"
minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="DisasterPreventionBlockImprovementZonePlanPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DisasterPreventionBlockImprovementZonePlan"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 歴史的風致維持向上地区計画 -->
<xs:element name="HistoricSceneryMaintenanceAndImprovementDistrictPlan"
type="urf:HistoricSceneryMaintenanceAndImprovementDistrictPlanType" substitutionGroup="urf:_AbstractDistrictPlan">
  <xs:annotation>
    <xs:documentation>法第 12 条の 4 第 1 項第 3 号 歴史的風致維持向上地区計画</xs:documentation>
  </xs:annotation>
</xs:element>

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<xs:complexType name="HistoricSceneryMaintenanceAndImprovementDistrictPlanType">
  <xs:complexContent>
    <xs:extension base="urf:AbstractDistrictPlanType">
      <xs:sequence>
        <xs:element name="landUsePolicy" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="HistoricSceneryMaintenanceAndImprovementDistrictPlanPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:HistoricSceneryMaintenanceAndImprovementDistrictPlan"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 沿道地区計画 -->
<xs:element name="RoadsideDistrictPlan" type="urf:RoadsideDistrictPlanType"
substitutionGroup="urf:_AbstractDistrictPlan">
  <xs:annotation>
    <xs:documentation>法第 12 条の 4 第 1 項第 4 号 沿道地区計画</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="RoadsideDistrictPlanType">
  <xs:complexContent>
    <xs:extension base="urf:AbstractDistrictPlanType">
      <xs:sequence>
        <xs:element name="facilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="landUsePolicy" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="RoadsideDistrictPlanPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:RoadsideDistrictPlan"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 集落地区計画 -->
<xs:element name="RuralDistrictPlan" type="urf:RuralDistrictPlanType" substitutionGroup="urf:_AbstractDistrictPlan">
  <xs:annotation>
    <xs:documentation>法第 12 条の 4 第 1 項第 5 号 集落地区計画</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="RuralDistrictPlanType">
  <xs:complexContent>
    <xs:extension base="urf:AbstractDistrictPlanType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="RuralDistrictPlanPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:RuralDistrictPlan"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 地区整備計画 -->
<xs:element name="DistrictDevelopmentPlan" type="urf:DistrictDevelopmentPlanType" substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>地区整備計画</xs:documentation>
  </xs:annotation>

```

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</xs:annotation>
</xs:element>
<xs:complexType name="DistrictDevelopmentPlanType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="districtFacilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="buildingRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="urbanGreenSpaceConservation" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="activityRestrictionInFarmland" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="landuseRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="districtFacility" type="urf:DistrictFacilityPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="district" type="urf:DistrictPropertyType" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="DistrictDevelopmentPlanPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DistrictDevelopmentPlan"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 特定建築物地区整備計画 -->
<xs:element name="SpecifiedBuildingZoneImprovementPlan" type="urf:SpecifiedBuildingZoneImprovementPlanType"
substitutionGroup="urf:DistrictDevelopmentPlan">
  <xs:annotation>
    <xs:documentation>法第 14 条第 2 項第 11 号 特定建築物地区整備計画</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="SpecifiedBuildingZoneImprovementPlanType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictDevelopmentPlanType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SpecifiedBuildingZoneImprovementPlanPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SpecifiedBuildingZoneImprovementPlan"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 防災街区整備地区整備計画 -->
<xs:element name="DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlan"
type="urf:DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlanType"
substitutionGroup="urf:DistrictDevelopmentPlan">
  <xs:annotation>
    <xs:documentation>法第 14 条第 2 項第 11 号 防災街区整備地区整備計画</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlanType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictDevelopmentPlanType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlanPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DistrictImprovementPlanForDisasterPreventionBlockImprovementZonePlan"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>

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</xs:complexType>
<!-- 歴史的風致維持向上地区整備計画 -->
<xs:element name="DistrictImprovementPlanForHistoricSceneryMaintenanceAndImprovementDistrict"
type="urf:DistrictImprovementPlanForHistoricSceneryMaintenanceAndImprovementDistrictType"
substitutionGroup="urf:DistrictDevelopmentPlan">
  <xs:annotation>
    <xs:documentation>法第 14 条第 2 項第 12 号 歴史的風致維持向上地区整備計画</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="DistrictImprovementPlanForHistoricSceneryMaintenanceAndImprovementDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictDevelopmentPlanType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType
name="DistrictImprovementPlanForHistoricSceneryMaintenanceAndImprovementDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DistrictImprovementPlanForHistoricSceneryMaintenanceAndImprovementDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 沿道地区整備計画 -->
<xs:element name="RoadsideDistrictImprovementPlan" type="urf:RoadsideDistrictImprovementPlanType"
substitutionGroup="urf:DistrictDevelopmentPlan">
  <xs:annotation>
    <xs:documentation>法第 14 条第 2 項第 13 号 沿道地区整備計画</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="RoadsideDistrictImprovementPlanType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictDevelopmentPlanType">
      <xs:sequence>
        <xs:element name="roadsideDistrictFacilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="RoadsideDistrictImprovementPlanPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:RoadsideDistrictImprovementPlan"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 集落地区整備計画 -->
<xs:element name="RuralDistrictImprovementPlan" type="urf:RuralDistrictImprovementPlanType"
substitutionGroup="urf:DistrictDevelopmentPlan">
  <xs:annotation>
    <xs:documentation>法第 14 条第 2 項第 14 号 集落地区整備計画</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="RuralDistrictImprovementPlanType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictDevelopmentPlanType">
      <xs:sequence>
        <xs:element name="ruralDistrictFacilitiesAllocation" type="gml:StringOrRefType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

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<xs:complexType name="RuralDistrictImprovementPlanPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:RuralDistrictImprovementPlan"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 地区 -->
<xs:element name="District" type="urf:DistrictType" substitutionGroup="urf:Zone"/>
<xs:complexType name="DistrictType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="buildingRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="useRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="maximumFloorAreaRate" type="xs:integer" minOccurs="0"/>
        <xs:element name="minimumFloorAreaRate" type="xs:integer" minOccurs="0"/>
        <xs:element name="maximumBuildingCoverageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="minimumBuildingCoverageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="minimumSiteArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="minimumBuildingArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="minimumGroundHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="setbackSize" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="structurePlacementRestrictions" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="maximumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="minimumBuildingHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="minimumFloorHeight" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="buildingDesignRestriction" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="minimumGreeningRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="fenceGuideline" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="restrictionsForFireProtection" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="restrictionsForNoiseProtection" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="minimumFrontageRate" type="xs:integer" minOccurs="0">
          <xs:annotation>
            <xs:documentation>第 4.0 版修正</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="DistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:District"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 地区施設 -->
<xs:element name="DistrictFacility" type="urf:DistrictFacilityType" substitutionGroup="urf:Zone">

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<xs:annotation>
  <xs:documentation>法第 12 条の 5 第 2 項第 1 号 地区施設</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="DistrictFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="DistrictFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DistrictFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 地区防災施設 -->
<xs:element name="ZonalDisasterPreventionFacility" type="urf:ZonalDisasterPreventionFacilityType"
substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>法第 14 条第 2 項第 11 号 地区防災施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ZonalDisasterPreventionFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="facilityType" type="gml:CodeType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ZonalDisasterPreventionFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ZonalDisasterPreventionFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 沿道地区施設 -->
<xs:element name="RoadsideDistrictFacility" type="urf:RoadsideDistrictFacilityType"
substitutionGroup="urf:DistrictFacility">
  <xs:annotation>
    <xs:documentation>幹線道路の沿道の整備に関する法律第 9 条第 2 項第 1 号 沿道地区施設</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="RoadsideDistrictFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictFacilityType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="RoadsideDistrictFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:RoadsideDistrictFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 集落地区施設 -->
<xs:element name="RuralDistrictFacility" type="urf:RuralDistrictFacilityType" substitutionGroup="urf:DistrictFacility">
  <xs:annotation>
    <xs:documentation>集落地域整備法第 5 条第 3 項 集落地区施設</xs:documentation>

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</xs:annotation>
</xs:element>
<xs:complexType name="RuralDistrictFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:DistrictFacilityType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="RuralDistrictFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:RuralDistrictFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 促進区 -->
<xs:element name="PromotionDistrict" type="urf:PromotionDistrictType" substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>促進区</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="PromotionDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType"/>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="PromotionDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:PromotionDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:element name="UrgentUrbanRenewalArea" type="urf:UrgentUrbanRenewalAreaType" substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>都市再生緊急整備地域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrgentUrbanRenewalAreaType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="developmentPolicy" type="gml:StringOrRefType" minOccurs="0"/>
        <xs:element name="privateProject" type="urf:PrivateUrbanRenewalProjectPlanPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="specifiedArea" type="urf:SpecifiedUrgentUrbanRenewalAreaPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="specialDistrict" type="urf:SpecialUrbanRenaissanceDistrictPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="UrgentUrbanRenewalAreaPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UrgentUrbanRenewalArea"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:element name="SpecifiedUrgentUrbanRenewalArea" type="urf:SpecifiedUrgentUrbanRenewalAreaType"
substitutionGroup="urf:UrgentUrbanRenewalArea">
  <xs:annotation>

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<xs:documentation>特定都市再生緊急整備地域</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="SpecifiedUrgentUrbanRenewalAreaType">
<xs:complexContent>
<xs:extension base="urf:UrgentUrbanRenewalAreaType">
<xs:sequence>
<xs:element name="developmentProject" type="urf:GlobalHubCityDevelopmentProjectPropertyType"
minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="SpecifiedUrgentUrbanRenewalAreaPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:SpecifiedUrgentUrbanRenewalArea"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:element name="PrivateUrbanRenewalProjectPlan" type="urf:PrivateUrbanRenewalProjectPlanType"
substitutionGroup="urf:Zone">
<xs:annotation>
<xs:documentation>民間都市再生事業計画</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="PrivateUrbanRenewalProjectPlanType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="developer" type="xs:string" minOccurs="0"/>
<xs:element name="plan" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:complexType name="PrivateUrbanRenewalProjectPlanPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:PrivateUrbanRenewalProjectPlan"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:element name="GlobalHubCityDevelopmentProject" type="urf:GlobalHubCityDevelopmentProjectType"
substitutionGroup="urf:Zone">
<xs:annotation>
<xs:documentation>国際競争拠点都市整備事業</xs:documentation>
</xs:annotation>
</xs:element>
<xs:complexType name="GlobalHubCityDevelopmentProjectType">
<xs:complexContent>
<xs:extension base="urf:ZoneType">
<xs:sequence>
<xs:element name="implementationBody" type="xs:string" minOccurs="0"/>
<xs:element name="implementationPeriod" type="xs:string" minOccurs="0"/>
<xs:element name="plan" type="gml:StringOrRefType" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

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<xs:complexType name="GlobalHubCityDevelopmentProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:GlobalHubCityDevelopmentProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="AdministrationType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="urfDmAttribute" type="uro:DmAttributePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Administration" type="urf:AdministrationType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="AdministrationPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:Administration"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="AgreementType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="applicableArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="expiration" type="xs:date" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="Agreement" type="urf:AgreementType" substitutionGroup="urf:Zone"/>
<xs:complexType name="AgreementPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:Agreement"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="RegulationType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="Regulation" type="urf:RegulationType" substitutionGroup="urf:Zone"/>
<xs:complexType name="RegulationPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:Regulation"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:element name="NumberOfHouseholds" type="urf:NumberOfHouseholdsType"/>
<xs:complexType name="NumberOfHouseholdsType">

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<xs:sequence>
  <xs:element name="class" type="gml:CodeType"/>
  <xs:element name="number" type="xs:integer"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="NumberOfHouseholdsPropertyType">
  <xs:sequence>
    <xs:element ref="urf:NumberOfHouseholds"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="DisasterDamageType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="id" type="xs:string"/>
        <xs:element name="date" type="xs:date" minOccurs="0"/>
        <xs:element name="damagedArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="numberOfDamagedHouses" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfHousesFloodedAboveFloorLevel" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfHousesFloodedBelowFloorLevel" type="xs:integer" minOccurs="0"/>
        <xs:element name="maximumRainfallPerHour" type="xs:integer" minOccurs="0"/>
        <xs:element name="totalRainfall" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="DisasterDamage" type="urf:DisasterDamageType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="DisasterDamagePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DisasterDamage"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="PollutionType">
  <xs:annotation>
    <xs:documentation>Source of pollution</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="id" type="xs:string"/>
        <xs:element name="year" type="xs:gYear" minOccurs="0"/>
        <xs:element name="cause" type="xs:string" minOccurs="0"/>
        <xs:element name="damagedArea" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="observationPoint" type="urf:ObservationPointPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="Pollution" type="urf:PollutionType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="PollutionPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:Pollution"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>

```

```

</xs:complexType>
<!-- ===== -->
<xs:complexType name="DisasterPreventionBaseType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="id" type="xs:string"/>
        <xs:element name="capacity" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="DisasterPreventionBase" type="urf:DisasterPreventionBaseType"
substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="DisasterPreventionBasePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DisasterPreventionBase"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="RecreationsType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="id" type="xs:string"/>
        <xs:element name="capacity" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfUsers" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="Recreations" type="urf:RecreationsType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="RecreationsPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:Recreations"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="HubCityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="HubCity" type="urf:HubCityType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="HubCityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:HubCity"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="LandUseDiversionType">
  <xs:complexContent>

```

```

<xs:extension base="urf:UrbanFunctionType">
  <xs:sequence>
    <xs:element name="farmlandConversionType" type="urf:FarmlandConversionTypePropertyType" minOccurs="0"/>
    <xs:element name="forestConversionType" type="urf:ForestConversionTypePropertyType" minOccurs="0"/>
  </xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="LandUseDiversion" type="urf:LandUseDiversionType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="LandUseDiversionPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:LandUseDiversion"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="UrbanizationType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="period" type="xs:string" minOccurs="0"/>
        <xs:element name="resources" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="Urbanization" type="urf:UrbanizationType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="UrbanizationPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:Urbanization"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:element name="SedimentDisasterProneArea" type="urf:SedimentDisasterProneAreaType"
substitutionGroup="urf:Zone"/>
<xs:complexType name="SedimentDisasterProneAreaType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence>
        <xs:element name="disasterType" type="gml:CodeType"/>
        <xs:element name="areaType" type="gml:CodeType"/>
        <xs:element name="zoneNumber" type="xs:string"/>
        <xs:element name="zoneName" type="xs:string"/>
        <xs:element name="status" type="gml:CodeType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="SedimentDisasterProneAreaPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:SedimentDisasterProneArea"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- 調書のデータを CityGML で記述する場合の XMLSchema -->
<xs:element name="UrbanPlanningBasicSurveyTable" type="urf:UrbanPlanningBasicSurveyTableType"/>
<xs:complexType name="UrbanPlanningBasicSurveyTablePropertyType">

```

```

<xs:sequence>
  <xs:element ref="urf:UrbanPlanningBasicSurveyTable" />
</xs:sequence>
</xs:complexType>
<xs:complexType name="UrbanPlanningBasicSurveyTableType">
  <xs:sequence>
    <xs:element name="prefecture" type="gml:CodeType" />
    <xs:element name="city" type="gml:CodeType" minOccurs="0" />
    <xs:element name="dataItemNumber" type="gml:CodeType" />
    <xs:element name="tableName" type="xs:string" />
    <xs:element name="unit" type="xs:string" minOccurs="0" />
    <xs:element name="referenceDate" type="xs:date" minOccurs="0" />
    <xs:element name="record" type="urf:UrbanPlanningBasicSurveyRecordPropertyType" maxOccurs="unbounded" />
  </xs:sequence>
</xs:complexType>
<xs:element name="UrbanPlanningBasicSurveyRecord" type="urf:UrbanPlanningBasicSurveyRecordType"
abstract="true" />
<xs:complexType name="UrbanPlanningBasicSurveyRecordPropertyType">
  <xs:sequence>
    <xs:element ref="urf:UrbanPlanningBasicSurveyRecord" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="UrbanPlanningBasicSurveyRecordType" abstract="true">
  <xs:sequence />
</xs:complexType>
<xs:element name="ItemRecordType" type="urf:ItemRecordTypeType"
substitutionGroup="urf:UrbanPlanningBasicSurveyRecord" />
<xs:complexType name="ItemRecordTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:ItemRecordType" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ItemRecordTypeType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanPlanningBasicSurveyRecordType">
      <xs:sequence>
        <xs:element name="id" type="xs:string" />
        <xs:element name="item" type="urf:ValueByCodesPropertyType" maxOccurs="unbounded" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="SummaryRecordType" type="urf:SummaryRecordTypeType"
substitutionGroup="urf:UrbanPlanningBasicSurveyRecord" />
<xs:complexType name="SummaryRecordTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:SummaryRecordType" />
  </xs:sequence>
</xs:complexType>
<xs:complexType name="SummaryRecordTypeType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanPlanningBasicSurveyRecordType">
      <xs:sequence>
        <xs:element name="classCode" type="gml:CodeType" minOccurs="0" />
        <xs:element name="classLabel" type="xs:string" minOccurs="0" />
        <xs:element name="item" type="urf:ValueByCodesPropertyType" maxOccurs="unbounded" />
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```



```

<xs:element name="DID" type="urf:DIDType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="DIDPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DID"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="DIDType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="id" type="xs:string"/>
        <xs:element name="population" type="xs:integer" minOccurs="0"/>
        <xs:element name="populationDensity" type="xs:double" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="ValueByCodes" type="urf:ValueByCodesType"/>
<xs:complexType name="ValueByCodesPropertyType">
  <xs:sequence>
    <xs:element ref="urf:ValueByCodes"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ValueByCodesType">
  <xs:sequence>
    <xs:element name="class" type="gml:CodeType" maxOccurs="unbounded"/>
    <xs:element name="intValue" type="xs:integer" minOccurs="0"/>
    <xs:element name="stringValue" type="xs:string" minOccurs="0"/>
    <xs:element name="doubleValue" type="xs:double" minOccurs="0"/>
    <xs:element name="measureValue" type="gml:MeasureType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="CensusBlock" type="urf:CensusBlockType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="CensusBlockPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:CensusBlock"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="CensusBlockType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="townName" type="xs:string" minOccurs="0"/>
        <xs:element name="blockName" type="xs:string" minOccurs="0"/>
        <xs:element name="populationType" type="urf:PopulationTypePropertyType" minOccurs="0"/>
        <xs:element name="daytimePopulationType" type="urf:DaytimePopulationTypePropertyType" minOccurs="0"/>
        <xs:element name="economicActivityType" type="urf:EconomicActivityTypePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="PopulationType" type="urf:PopulationTypeType"/>
<xs:complexType name="PopulationTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:PopulationType"/>
  </xs:sequence>
</xs:complexType>

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<xs:complexType name="PopulationTypeType">
  <xs:sequence>
    <xs:element name="population" type="urf:PopulationByAgeAndSexTypePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
    <xs:element name="populationDensity" type="xs:double" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="PopulationByAgeAndSexType" type="urf:PopulationByAgeAndSexTypeType"/>
<xs:complexType name="PopulationByAgeAndSexTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:PopulationByAgeAndSexType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="PopulationByAgeAndSexTypeType">
  <xs:sequence>
    <xs:element name="ageAndSex" type="gml:CodeType"/>
    <xs:element name="number" type="xs:integer" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="DaytimePopulationType" type="urf:DaytimePopulationTypeType"/>
<xs:complexType name="DaytimePopulationTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:DaytimePopulationType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="DaytimePopulationTypeType">
  <xs:sequence>
    <xs:element name="daytimePopulation" type="xs:integer" minOccurs="0"/>
    <xs:element name="daytimePopulationDensity" type="xs:double" minOccurs="0"/>
    <xs:element name="daytimeOfficeCommuter" type="xs:integer" minOccurs="0"/>
    <xs:element name="daytimeSchoolCommuter" type="xs:integer" minOccurs="0"/>
    <xs:element name="daytimeUnder15" type="xs:integer" minOccurs="0"/>
    <xs:element name="daytimeOver15" type="xs:integer" minOccurs="0"/>
    <xs:element name="agriculturalWorker" type="xs:integer" minOccurs="0"/>
    <xs:element name="nonCommuter" type="xs:integer" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="EconomicActivityType" type="urf:EconomicActivityTypeType"/>
<xs:complexType name="EconomicActivityTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:EconomicActivityType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="EconomicActivityTypeType">
  <xs:sequence>
    <xs:element name="numberOfOffices" type="urf:EconomicActivitySumTypePropertyType" minOccurs="0"
maxOccurs="unbounded">
      <xs:annotation>
        <xs:documentation>第 1.1 版修正</xs:documentation>
      </xs:annotation>
    </xs:element>
    <xs:element name="numberOfEmployees" type="urf:EconomicActivitySumTypePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
    <xs:element name="retailSales" type="urf:EconomicActivitySumTypePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
    <xs:element name="manufactureShipments" type="urf:EconomicActivitySumTypePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="EconomicActivitySumType" type="urf:EconomicActivitySumTypeType"/>

```

```

<xs:complexType name="EconomicActivitySumTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:EconomicActivitySumType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="EconomicActivitySumType">
  <xs:sequence>
    <xs:element name="industryType" type="gml:CodeType"/>
    <xs:element name="number" type="xs:integer"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="UnclassifiedBlankArea" type="urf:UnclassifiedBlankAreaType" substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>非線引き用途白地</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UnclassifiedBlankAreaPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UnclassifiedBlankArea"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="UnclassifiedBlankAreaType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="UnclassifiedUseDistrict" type="urf:UnclassifiedUseDistrictType" substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>非線引き用途地域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UnclassifiedUseDistrictPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UnclassifiedUseDistrict"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="UnclassifiedUseDistrictType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="ResidenceAttractionArea" type="urf:ResidenceAttractionAreaType" substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>居住誘導区域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="ResidenceAttractionAreaPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:ResidenceAttractionArea"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="ResidenceAttractionAreaType">

```

```

<xs:complexContent>
  <xs:extension base="urf:ZoneType">
    <xs:sequence/>
  </xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="UrbanFunctionAttractionArea" type="urf:UrbanFunctionAttractionAreaType"
substitutionGroup="urf:Zone">
  <xs:annotation>
    <xs:documentation>都市機能誘導区域</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrbanFunctionAttractionAreaPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UrbanFunctionAttractionArea"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="UrbanFunctionAttractionAreaType">
  <xs:complexContent>
    <xs:extension base="urf:ZoneType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="DevelopmentProject" type="urf:DevelopmentProjectType"
substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="DevelopmentProjectPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:DevelopmentProject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="DevelopmentProjectType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="residentialDevelopmentType" type="urf:ResidentialDevelopmentTypePropertyType"
minOccurs="0"/>
        <xs:element name="urbanDevelopmentType" type="urf:UrbanDevelopmentProjectTypePropertyType"
minOccurs="0"/>
        <xs:element name="agriculturalDevelopmentType" type="urf:AgriculturalDevelopmentProjectTypePropertyType"
minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="ResidentialDevelopmentType" type="urf:ResidentialDevelopmentTypeType"/>
<xs:complexType name="ResidentialDevelopmentTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:ResidentialDevelopmentType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ResidentialDevelopmentTypeType">
  <xs:sequence>
    <xs:element name="id" type="xs:string"/>
    <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
    <xs:element name="projectPeriod" type="xs:string" minOccurs="0"/>
    <xs:element name="purpose" type="xs:string" minOccurs="0"/>
    <xs:element name="status" type="gml:CodeType" minOccurs="0"/>
  </xs:sequence>

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<xs:element name="note" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
<xs:element name="UrbanDevelopmentProjectType" type="urf:UrbanDevelopmentProjectTypeType"/>
<xs:complexType name="UrbanDevelopmentProjectTypePropertyType">
<xs:sequence>
<xs:element ref="urf:UrbanDevelopmentProjectType"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="UrbanDevelopmentProjectTypeType">
<xs:sequence>
<xs:element name="id" type="xs:string"/>
<xs:element name="dateOfDecision" type="xs:date" minOccurs="0"/>
<xs:element name="projectName" type="xs:string"/>
<xs:element name="plannedArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="ongoingArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="costUpToLastFiscalYear" type="xs:double" minOccurs="0"/>
<xs:element name="cost" type="xs:double" minOccurs="0"/>
<xs:element name="completedArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="projectPeriod" type="xs:string" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
<xs:element name="AgriculturalDevelopmentProjectType" type="urf:AgriculturalDevelopmentProjectTypeType"/>
<xs:complexType name="AgriculturalDevelopmentProjectTypePropertyType">
<xs:sequence>
<xs:element ref="urf:AgriculturalDevelopmentProjectType"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="AgriculturalDevelopmentProjectTypeType">
<xs:sequence>
<xs:element name="id" type="xs:string"/>
<xs:element name="blockName" type="xs:string" minOccurs="0"/>
<xs:element name="projectType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="implementationBody" type="xs:string" minOccurs="0"/>
<xs:element name="benefitArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="benefitAreaInUrbanArea" type="gml:MeasureType" minOccurs="0"/>
<xs:element name="startFiscalYear" type="xs:gYear" minOccurs="0"/>
<xs:element name="status" type="gml:CodeType" minOccurs="0"/>
<xs:element name="measureType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="benefitPeriod" type="xs:string" minOccurs="0"/>
<xs:element name="note" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
<xs:element name="NewHousing" type="urf:NewHousingType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="NewHousingPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:NewHousing"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="NewHousingType">
<xs:complexContent>
<xs:extension base="urf:UrbanFunctionType">
<xs:sequence>
<xs:element name="id" type="xs:string"/>
<xs:element name="purpose" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
<xs:element name="developer" type="xs:string" minOccurs="0"/>
<xs:element name="yearOfConstruction" type="xs:gYear" minOccurs="0"/>

```

```

    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="UrbanFacilityStatus" type="urf:UrbanFacilityStatusType" substitutionGroup="urf:_UrbanFunction">
  <xs:annotation>
    <xs:documentation>第 1.1 版修正</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:complexType name="UrbanFacilityStatusPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:UrbanFacilityStatus"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="UrbanFacilityStatusType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="id" type="xs:string"/>
        <xs:element name="dateOfDecision" type="xs:date" minOccurs="0"/>
        <xs:element name="facilityName" type="xs:string" minOccurs="0"/>
        <xs:element name="isPlanned" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isImplemented" type="xs:boolean" minOccurs="0"/>
        <xs:element name="costUptToLastYear" type="xs:double" minOccurs="0"/>
        <xs:element name="totalCost" type="xs:double" minOccurs="0"/>
        <xs:element name="isCompleted" type="xs:string" minOccurs="0"/>
        <xs:element name="startDate" type="xs:date" minOccurs="0"/>
        <xs:element name="completedDate" type="xs:date" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="PublicTransitFacility" type="urf:PublicTransitFacilityType"
substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="PublicTransitFacilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:PublicTransitFacility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="PublicTransitFacilityType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="id" type="xs:string"/>
        <xs:element name="companyName" type="xs:string" minOccurs="0"/>
        <xs:element name="companyType" type="xs:string" minOccurs="0"/>
        <xs:element name="facilityType" type="xs:string" minOccurs="0"/>
        <xs:element name="seccionName" type="xs:string" minOccurs="0"/>
        <xs:element name="frequencyOfService" type="xs:integer" minOccurs="0"/>
        <xs:element name="numberOfCustomers" type="xs:integer" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="LandPrice" type="urf:LandPriceType" substitutionGroup="urf:_UrbanFunction">
  <xs:annotation>
    <xs:documentation>第 1.1 版修正</xs:documentation>
  </xs:annotation>

```

```

</xs:annotation>
</xs:element>
<xs:complexType name="LandPricePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:LandPrice"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="LandPriceType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence>
        <xs:element name="pointCode" type="xs:string"/>
        <xs:element name="pointCodeOfLastYear" type="xs:string" minOccurs="0"/>
        <xs:element name="fiscalYear" type="xs:gYear" minOccurs="0"/>
        <xs:element name="landPrice" type="xs:integer" minOccurs="0"/>
        <xs:element name="variability" type="xs:double" minOccurs="0"/>
        <xs:element name="isSelected" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isAddressChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isAcreageChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isUseChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isBuildingStructureChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isSupplyFacilitiesChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isDistanceFromStationChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isUseDistrictChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isFirePreventionChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isUrbanPlanAreaChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isBuildingCoverageRateChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isFloorAreaRateChanged" type="xs:boolean" minOccurs="0"/>
        <xs:element name="cityCode" type="gml:CodeType" minOccurs="0" maxOccurs="unbounded"/>
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        <xs:element name="location" type="xs:string" minOccurs="0"/>
        <xs:element name="address" type="xs:string" minOccurs="0"/>
        <xs:element name="acreage" type="gml:MeasureType" minOccurs="0"/>
        <xs:element name="useStatus" type="xs:string" minOccurs="0" maxOccurs="unbounded"/>
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        <xs:element name="useType" type="xs:string" minOccurs="0"/>
        <xs:element name="buildingStructure" type="xs:string" minOccurs="0"/>
        <xs:element name="water" type="xs:boolean" minOccurs="0"/>
        <xs:element name="gas" type="xs:boolean" minOccurs="0"/>
        <xs:element name="sewerage" type="xs:boolean" minOccurs="0"/>
        <xs:element name="shape" type="xs:string" minOccurs="0"/>
        <xs:element name="frontageRate" type="xs:double" minOccurs="0"/>
        <xs:element name="depthRate" type="xs:double" minOccurs="0"/>
        <xs:element name="storeysAboveGround" type="xs:nonNegativeInteger" minOccurs="0"/>
        <xs:element name="storeysBelowGround" type="xs:nonNegativeInteger" minOccurs="0"/>
        <xs:element name="frontageRoad" type="xs:string" minOccurs="0"/>
        <xs:element name="frontageRoadDirection" type="xs:string" minOccurs="0"/>
        <xs:element name="frontageRoadWidth" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="stationSquare" type="xs:string" minOccurs="0"/>
        <xs:element name="frontageRoadSurface" type="xs:string" minOccurs="0"/>
        <xs:element name="sideRoad" type="xs:string" minOccurs="0"/>
        <xs:element name="sideRoadDirection" type="xs:string" minOccurs="0"/>
        <xs:element name="transportationFacilities" type="xs:string" minOccurs="0"/>
        <xs:element name="surroundings" type="xs:string" minOccurs="0"/>
        <xs:element name="stationName" type="xs:string" minOccurs="0"/>
        <xs:element name="distanceFromStation" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="useDistrict" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="firePrevention" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

<xs:element name="urbanPlanAreaType" type="xs:string" minOccurs="0">
  <xs:annotation><xs:documentation>第 1.1 版修正</xs:documentation></xs:annotation>
</xs:element>
<xs:element name="heightControl" type="xs:string" minOccurs="0"/>
<xs:element name="forest" type="xs:string" minOccurs="0"/>
<xs:element name="park" type="xs:string" minOccurs="0"/>
<xs:element name="buildingCoverageRate" type="xs:integer" minOccurs="0"/>
<xs:element name="floorAreaRate" type="xs:integer" minOccurs="0"/>
<xs:element name="extraFloorAreaRate" type="xs:string" minOccurs="0"/>
<xs:element name="isSame" type="xs:boolean" minOccurs="0"/>
<xs:element name="selectionStatus" type="xs:string" minOccurs="0"/>
<xs:element name="landPriceHistory" type="urf:ValueByCodesPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
  <xs:element name="attributeHistory" type="urf:ValueByCodesPropertyType" minOccurs="0" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="NaturalConditions" type="urf:NaturalConditionsType" substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="NaturalConditionsPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:NaturalConditions"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="NaturalConditionsType">
  <xs:complexContent>
    <xs:extension base="urf:UrbanFunctionType">
      <xs:sequence/>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="WeatherObservation" type="urf:WeatherObservationType"
substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="WeatherObservationPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urf:WeatherObservation"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
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  <xs:complexContent>
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      <xs:sequence>
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maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
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<xs:complexType name="WeatherObservationTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:WeatherObservationType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="WeatherObservationTypeType">
  <xs:sequence>
    <xs:element name="date" type="xs:date" minOccurs="0"/>
    <xs:element name="totalRainfall" type="gml:LengthType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>

```



```

<xs:element name="maxRainfallPerHour" type="gml:LengthType" minOccurs="0"/>
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<xs:element name="maxTemperature" type="xs:double" minOccurs="0"/>
<xs:element name="minTemperature" type="xs:double" minOccurs="0"/>
<xs:element name="averageWindSpeed" type="xs:double" minOccurs="0"/>
<xs:element name="maxWindDirection" type="gml:CodeType" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
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<xs:complexType name="GreenSpacePropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urf:GreenSpace"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="GreenSpaceType">
<xs:complexContent>
<xs:extension base="urf:UrbanFunctionType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="DistributionOfFloraAndFauna" type="urf:DistributionOfFloraAndFaunaType"
substitutionGroup="urf:_UrbanFunction"/>
<xs:complexType name="DistributionOfFloraAndFaunaPropertyType">
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</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
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<xs:complexContent>
<xs:extension base="urf:UrbanFunctionType">
<xs:sequence/>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="ScenicResource" type="urf:ScenicResourceType" substitutionGroup="urf:_UrbanFunction"/>
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<xs:sequence minOccurs="0">
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</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="ScenicResourceType">
<xs:complexContent>
<xs:extension base="urf:UrbanFunctionType">
<xs:sequence>
<xs:element name="id" type="xs:string"/>
<xs:element name="typeName" type="xs:string" minOccurs="0"/>
<xs:element name="address" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="ObservationPoint" type="urf:ObservationPointType"/>
<xs:complexType name="ObservationPointPropertyType">
<xs:sequence>
<xs:element ref="urf:ObservationPoint"/>

```

```

</xs:sequence>
</xs:complexType>
<xs:complexType name="ObservationPointType">
  <xs:sequence>
    <xs:element name="lod0MultiPoint" type="gml:MultiPointPropertyType"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="FarmlandConversionType" type="urf:FarmlandConversionTypeType"/>
<xs:complexType name="FarmlandConversionTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:FarmlandConversionType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="FarmlandConversionTypeType">
  <xs:sequence>
    <xs:element name="id" type="xs:string"/>
    <xs:element name="yearOfDiversion" type="xs:gYear" minOccurs="0"/>
    <xs:element name="isDesignated" type="xs:boolean" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="ForestConversionType" type="urf:ForestConversionTypeType"/>
<xs:complexType name="ForestConversionTypePropertyType">
  <xs:sequence>
    <xs:element ref="urf:ForestConversionType"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="ForestConversionTypeType">
  <xs:sequence>
    <xs:element name="id" type="xs:string"/>
    <xs:element name="yearOfDiversion" type="xs:gYear" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
</xs:schema>

```

A.2 Sample data (informative)

```

<?xml version="1.0" encoding="UTF-8"?>
<core:CityModel xmlns:urf="https://www.geospatial.jp/iur/urf/3.0/" xmlns:core="http://www.opengis.net/citygml/2.0" xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:gml="http://www.opengis.net/gml" xmlns:xlink="http://www.w3.org/1999/xlink" xsi:schemaLocation="https://www.geospatial.jp/iur/urf/3.1/ https://www.geospatial.jp/iur/schemas/urf/3.1/urbanFunction.xsd http://www.opengis.net/citygml/2.0 http://schemas.opengis.net/citygml/2.0/cityGMLBase.xsd http://www.opengis.net/gml http://schemas.opengis.net/gml/3.1.1/base/gml.xsd">
  <gml:boundedBy>
    <gml:Envelope srsName="http://www.opengis.net/def/crs/EPSSG/0/6697" srsDimension="3">
      <gml:lowerCorner>33.8 130.48 0</gml:lowerCorner>
      <gml:upperCorner>33.9 130.56 0</gml:upperCorner>
    </gml:Envelope>
  </gml:boundedBy>
  <core:cityObjectMember>
    <urf:Administration gml:id="admin001">
      <urf:prefecture codeSpace="https://www.geospatial.jp/iur/codelists/3.0/Common_prefecture.xml">40</urf:prefecture>
      <urf:city codeSpace="https://www.geospatial.jp/iur/codelists/3.0/Common_localPublicAuthorities.xml">40220</urf:city>
      <urf:surveyYear>2017</urf:surveyYear>
      <urf:lod0MultiSurface>
        <gml:MultiSurface srsName="http://www.opengis.net/def/crs/EPSSG/0/6697">
          <gml:surfaceMember>
            <gml:Polygon>

```

```

    <gml:exterior>
      <gml:LinearRing>
        <gml:pos>33.84252833 130.4901808 0</gml:pos>
        <gml:pos>33.84259361 130.4903153 0</gml:pos>
<-- omitted -->
        <gml:pos>33.84251389 130.4900461 0</gml:pos>
        <gml:pos>33.84252833 130.4901808 0</gml:pos>
      </gml:LinearRing>
    </gml:exterior>
  </gml:Polygon>
</gml:surfaceMember>
<gml:surfaceMember>
  <gml:Polygon>
    <gml:exterior>
      <gml:LinearRing>
        <gml:pos>33.8638502 130.4732692 0</gml:pos>
        <gml:pos>33.86385347 130.473259 0</gml:pos>
<-- omitted -->
        <gml:pos>33.86384941 130.4732781 0</gml:pos>
        <gml:pos>33.8638502 130.4732692 0</gml:pos>
      </gml:LinearRing>
    </gml:exterior>
  </gml:Polygon>
</gml:surfaceMember>
</gml:MultiSurface>
</urf:lod0MultiSurface>
</urf:Administration>
</core:cityObjectMember>
</core:CityModel>

```

Annex B

(informative)

Code lists for Urban Function Data

A code list is a form of enumeration where the valid values are defined in a separate register. The code list values consist of a link or identifier for the register as well as the value from that register which is being used. In contrast to fixed enumerations, modifications and extensions to the value domain become possible with code lists. The values for all code lists in Urban Planning ADE are defined externally as in CityGML. This could, for example, be by adopting classifications from global, national, or community standards.

Examples of code lists for Urban Planning ADE can be found in Geospatial Information Center (<https://www.geospatial.jp/iur/codelists/>) which reflect the results of the Project "PLATEAU" (<https://www.mlit.go.jp/plateau/>) led by the Ministry of Land, Infrastructure, Transport and Tourism of Japan.

Please note that this annex is non-normative and the example code lists are neither mandatory nor complete.

Annex C (normative)

Concept of Extended LOD

C.1 Introduction

In city planning, it is necessary to harmonize with its higher plans, e.g. the national spatial strategy and the regional plan. These higher plans require rough city models which can be applied on a national or worldwide level for comparison and analysis of cities. For this purpose, this module defines two extended LODs for urban functions. The LOD-1 (minus one) for nationwide city models and the LOD-2 (minus two) for worldwide city models without inconsistency between LOD 0 to 4 as shown in Figure C-1. These extended LODs allow users to employ global 3D city models in policy making phases.

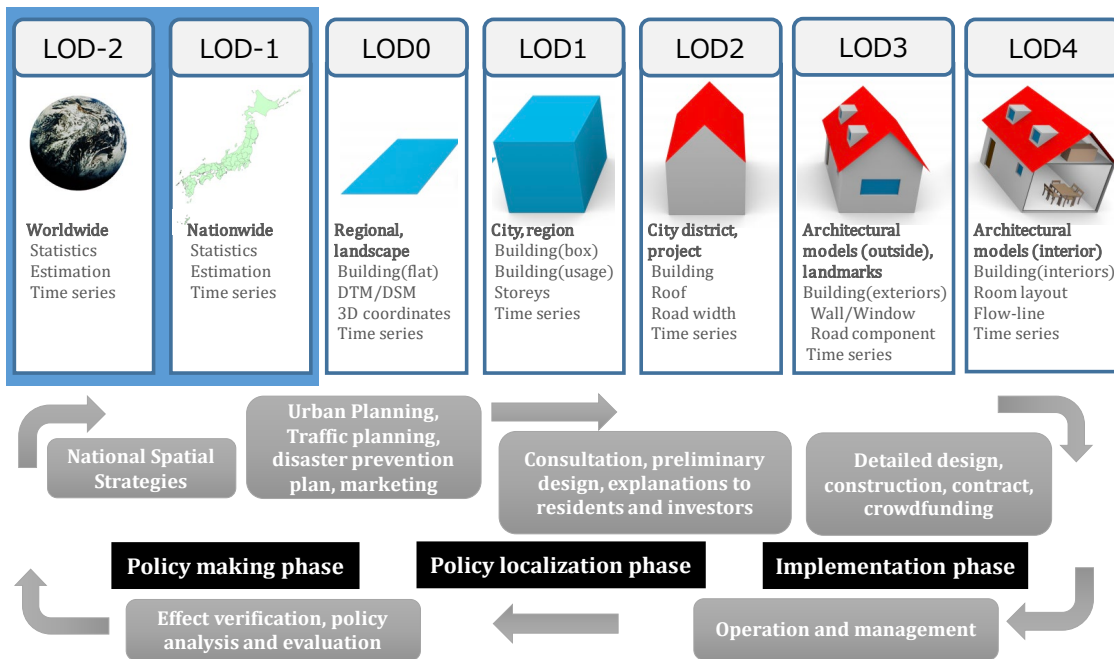


Figure C-1 Extended LOD for global city models

C.2 Extended LODs for Urban Functions

The mechanism of Extended LOD in Urban Function module is implemented as associations of *urf::_UrbanFunction*, the root class of this module. To provide an overview of the real world using conceptual and virtual objects, this module defines *urf::lod-1MultiGeometry* and *urf::lod-2MultiGeometry* as shown in Figure C-2 to declare explicitly that these objects described in LOD-1 or LOD-2 represent the global city model.

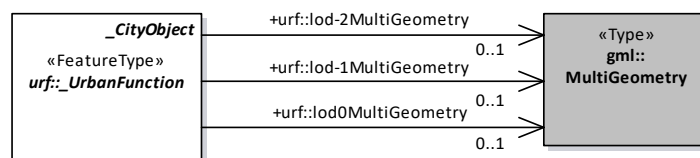


Figure C-2 Extended LOD applied to Urban Function module

Part 3. Statistical Grid Data Encoding Specification

1. Scope

To grasp the current situation and issues of urban areas, comparing urban growth from the past to the present and also comparing between cities of the same urban scale are necessary to simplify complex situations.

This document defines statistical grid for time-series comparison and regional comparison, and specifies the encoding format of statistical grid.

In addition, global city model of national or world is necessary for comparing cities and understanding the relationships between cities through quantitative assessment. This is necessary in order to clarify the current situation and problems in urban areas.

The Levels of Detail (LOD) defined in CityGML do not cover such a rough description, therefore this document defines the mechanism to describe the global city model and specifies the encoding format of the information.

2. Normative references

Followings are normative references of this document.

- OpenGIS® OGC City Geography Markup Language (CityGML) Encoding Standard, Version 2.0, OGC document 12-019

3. Conventions

3.1 Terms and definitions

No terms and definitions are listed in this document.

3.2 Abbreviated terms

ADE Application Domain Extensions

CityGML City Geography Markup Language

GML Geography Markup Language

LOD Levels Of Detail

OGC Open Geospatial Consortium

UML Unified Modeling Language

4. Statistical Grid Data Encoding

4.1 Overview

In city planning, characteristics of features are abstracted and mapped into statistical units for global representation and analysis. An Administrative boundary is often used as a statistical unit. However, changes of administrative boundaries such as municipal mergers and dissolutions make it difficult to conduct time-series comparison and regional comparison. In addition, different sizes of administrative districts hinder finding regional issues. A Statistical grid which divides cities into grid cells with almost

equal area are useful for such global analysis. Therefore this module extends LODs to describe such rough city models which do not have to be detailed but should be described with a unified unit among cities. This enables users to analyse and visualise cities under the same conditions. Figure 3-1 shows an example of grid cells describing a global city model.

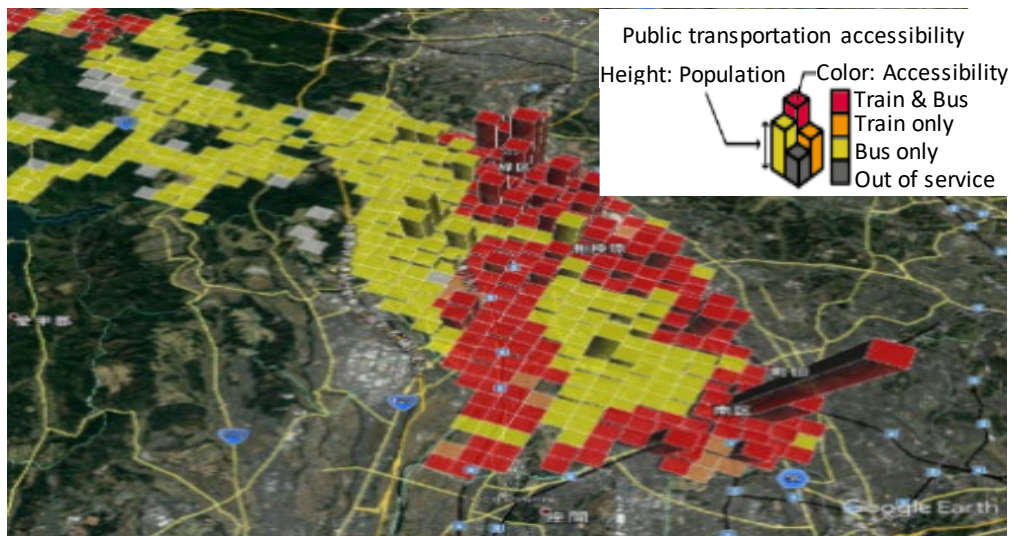


Figure 3-1 Example of grids describing a global city model

This module defines two additional LODs for statistical grids, LOD-1 (minus one) for nationwide city models and LOD-2 (minus two) for worldwide city models (See Annex C.) This extension allows users to compare different times of a city and among different cities with statistical grids without inconsistency between LOD 0 to 4 defined in CityGML.

Based on the above, this document defines the elements and types according to the rules of Application Domain Extensions (ADE) which describe statistical grid for global city models but not defined in CityGML. Those already defined in CityGML are imported without any inconsistency.

Figure 3-2 shows the structure of Statistical Grid Data.

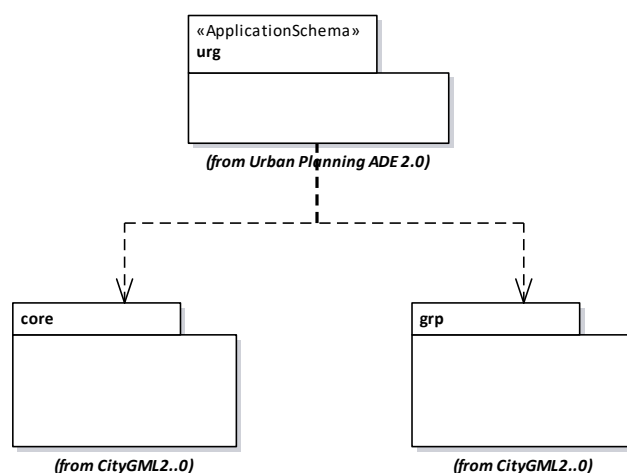


Figure 3-2 Package diagram of Statistical Grid Data

Module name	Statistical Grid
XML namespace identifier	https://www.geospatial.jp/iur/urg/2.0

XMLSchema location	https://www.geospatial.jp/iur/schemas/urg/2.0/statisticalGrid.xsd
Recommended namespace prefix	urg
Description	This module defines statistical grid which divides specific area to grids. Each grid has its own thematic value, e.g. population, land price.

4.2 Object definition

4.2.1 StatisticalGridType, _StatisticalGrid

The Statistical grid module enables users with time-series analysis and regional comparison. A grid is a network composed of two or more sets of curves, in which the members of each set intersect the members of the other sets in an algorithmic way, and the curves separate space into grid cells. Statistical grid module gives statistical values to each grid cell.

Figure 3-3 shows the UML diagram of the Statistical grid module, and the XMLSchema Definition is attached in Annex A. A root class of this module is *urg::_StatisticalGrid*. A grid cell defined in Coverage schema is not distinguishable and is regarded as a part of a feature, however a statistical grid cell has its identifier. This means a statistical grid cell is a feature rather than a part of a feature, and therefore *urg::_StatisticalGrid* inherits from *gml::_Feature* via *core::_CityObject*.

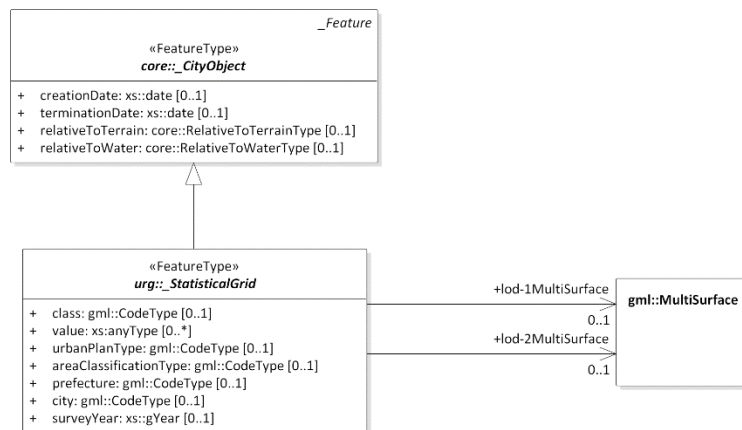


Figure 3-3 UML diagram of Statistical Grid Data

Object	Definition
<i>_StatisticalGrid</i>	grid cell for statistical data.
Property	Definition
class	type of the grid cell.
value	value of the grid cell.
urbanPlanType	Type of the grid location designated by the Urban Plan.
areaClassificationType	Type of the grid location designated by the Area classification.
prefecture	Prefecture name of the grid location.
city	City name of the grid location.
surveyYear	year of the survey.
lod-1MultiSurface	geometry of the grid cell at LOD-1 level.
lod-2MultiSurface	geometry of the grid cell at LOD-2 level.

```
<xs:complexType name="StatisticalGridType" abstract="true">
```



```

<xs:complexContent>
  <xs:extension base="core:AbstractCityObjectType">
    <xs:sequence>
      <xs:element name="class" type="gml:CodeType" minOccurs="0"/>
      <xs:element name="value" type="xs:anyType" minOccurs="0" maxOccurs="unbounded"/>
      <xs:element name="urbanPlanType" type="gml:CodeType" minOccurs="0"/>
      <xs:element name="areaClassificationType" type="gml:CodeType" minOccurs="0"/>
      <xs:element name="prefecture" type="gml:CodeType" minOccurs="0"/>
      <xs:element name="city" type="gml:CodeType" minOccurs="0"/>
      <xs:element name="surveyYear" type="xs:gYear" minOccurs="0"/>
      <xs:element name="lod-1MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
      <xs:element name="lod-2MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="_StatisticalGrid" type="StatisticalGridType" abstract="true" substitutionGroup="core:_CityObject"/>

```

A *urg::_StatisticalGrid* is the root class of this module and is extended for defining specific statistical grid objects. Figure 3-4 shows subclasses of *urg::_StatisticalGrid*.

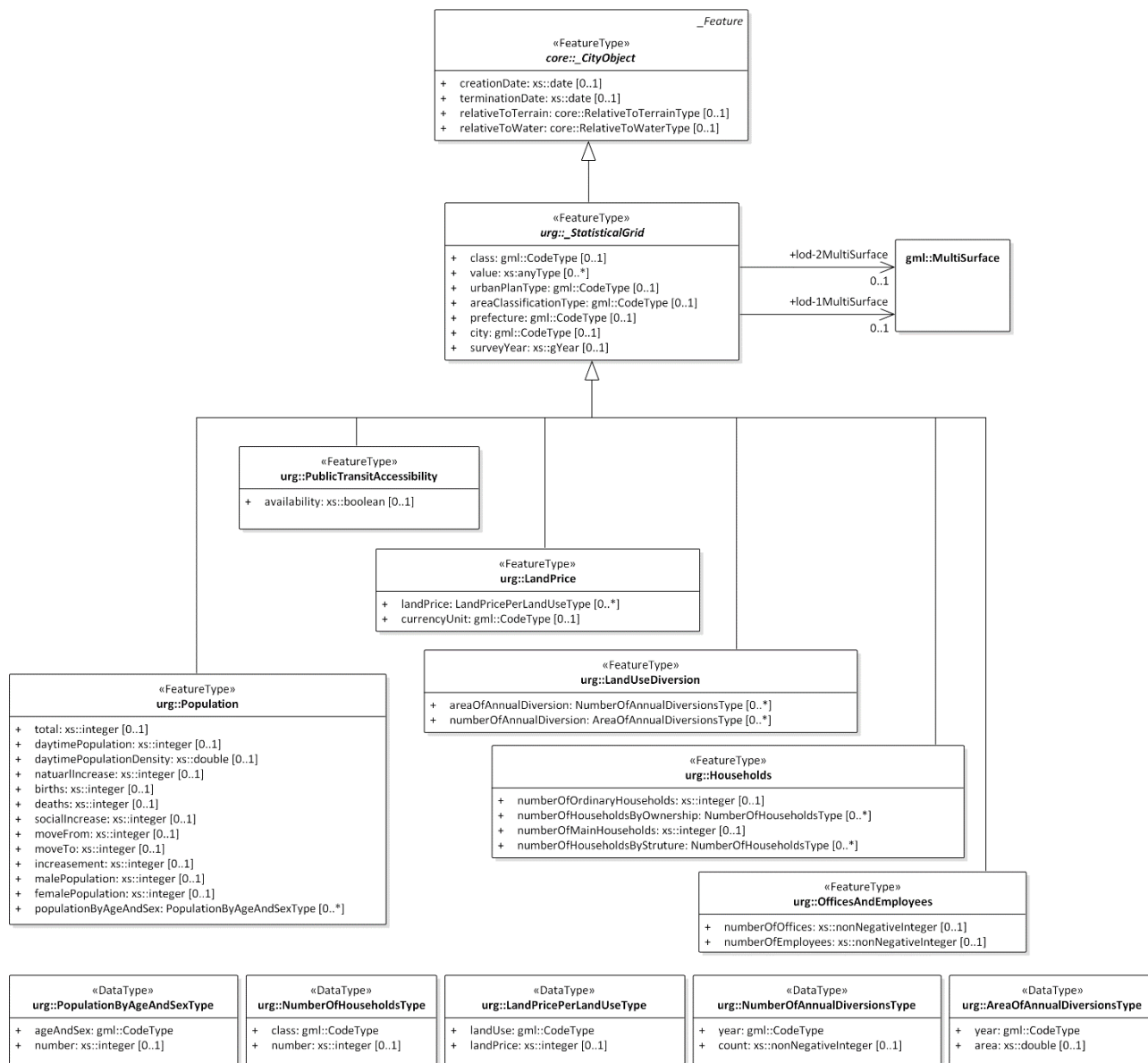


Figure 3-4 Subclasses of *urg::StatisticalGrid*

4.2.2 PopulationType, Population

Object	Definition
Population	Population information in a grid cell.
Property	Definition
total	Total population.
daytimePopulation	Daytime population.
urg:daytimePopulationDensity	Daytime population density.
naturalIncrease	Natural increase per year.
births	Number of births.
deaths	Number of deaths.
socialIncrease	Increase of social community.
moveFrom	Number of people who move from.
moveTo	Number of people who move to.
increasement	Population increase.

malePopulation	Total male population.
femalePopulation	Total female population.
populationByAgeAndSex	Population by age and sex.

```

<xs:complexType name="PopulationType">
  <xs:annotation>
    <xs:documentation>grid cell with population values</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="StatisticalGridType">
      <xs:sequence>
        <xs:element name="total" type="xs:integer" minOccurs="0"/>
        <xs:element name="daytimePopulation" type="xs:integer" minOccurs="0"/>
        <xs:element name="daytimePopulationDensity" type="xs:double" minOccurs="0"/>
        <xs:element name="naturalIncrease" type="xs:integer" minOccurs="0"/>
        <xs:element name="births" type="xs:integer" minOccurs="0"/>
        <xs:element name="deaths" type="xs:integer" minOccurs="0"/>
        <xs:element name="socialIncrease" type="xs:integer" minOccurs="0"/>
        <xs:element name="moveFrom" type="xs:integer" minOccurs="0"/>
        <xs:element name="moveTo" type="xs:integer" minOccurs="0"/>
        <xs:element name="increasement" type="xs:integer" minOccurs="0"/>
        <xs:element name="malePopulation" type="xs:integer" minOccurs="0"/>
        <xs:element name="femalePopulation" type="xs:integer" minOccurs="0"/>
        <xs:element name="populationByAgeAndSex" type="PopulationByAgeAndSexPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="Population" type="PopulationType" substitutionGroup="_StatisticalGrid"/>
<xs:complexType name="PopulationPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="Population"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

PopulationByAgeAndSexType

Type	Definition
PopulationByAgeAndSexType	Population by age and sex.
Property	Definition
ageAndSex	Category of age and sex.
number	population.

```

<xs:element name="PopulationByAgeAndSex" type="PopulationByAgeAndSexType"/>
<xs:complexType name="PopulationByAgeAndSexType">
  <xs:sequence>
    <xs:element name="ageAndSex" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="number" type="xs:integer" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="PopulationByAgeAndSexPropertyType">
  <xs:sequence>
    <xs:element ref="PopulationByAgeAndSex"/>
  </xs:sequence>
</xs:complexType>

```

4.2.3 PublicTransitAccessibilityType, PublicTransitAccessibility

Object	Definition
PublicTransitAccessibility	Accessibility of public transit service such as busses and railways.
Property	Definition
availability	Whether the grid cell location is within the specified distance from the bus stop/ train station or not .

```

<xs:complexType name="PublicTransitAccessibilityType">
  <xs:complexContent>
    <xs:extension base="StatisticalGridType">
      <xs:sequence>
        <xs:element name="availability" type="xs:boolean" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="PublicTransitAccessibility" type="PublicTransitAccessibilityType"
substitutionGroup="_StatisticalGrid"/>
<xs:complexType name="PublicTransitAccessibilityPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="PublicTransitAccessibility"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.4 LandPriceType, LandPrice

Object	Definition
LandPrice	Average land price in a grid cell.
Property	Definition
landPrice	land price per unit area by land use types.
currencyUnit	Currency unit of the land price.

```

<xs:complexType name="LandPriceType">
  <xs:annotation>
    <xs:documentation>grid cell with land prices</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="StatisticalGridType">
      <xs:sequence>
        <xs:element name="landPrice" type="LandPricePerLandUsePropertyType" minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="currencyUnit" type="gml:CodeType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="LandPrice" type="LandPriceType" substitutionGroup="_StatisticalGrid"/>
<xs:complexType name="LandPricePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="LandPrice"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>

```

```
</xs:complexType>
```

LandPricePerLandUseType

Type	Definition
LandPricePerLandUseType	Land price per unit area of the specified land use.
Property	Definition
landUse	Land use type.
landPrice	Land price per unit area.

```
<xs:element name="LandPricePerLandUse" type="LandPricePerLandUseType"/>
<xs:complexType name="LandPricePerLandUseType">
  <xs:sequence>
    <xs:element name="landUse" type="gml:CodeType" minOccurs="0"/>
    <xs:element name="landPrice" type="xs:integer" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="LandPricePerLandUsePropertyType">
  <xs:sequence>
    <xs:element ref="LandPricePerLandUse"/>
  </xs:sequence>
</xs:complexType>
```

4.2.5 LandUseDiversionType, LandUseDiversion

Object	Definition
LandUseDiversion	Land use diversion per year.
Property	Definition
numberOfAnnualDiversion	Annual number of land diversion.
areaOfAnnualDiversion	Annual area of land diversion.

```
<xs:complexType name="LandUseDiversionType">
  <xs:complexContent>
    <xs:extension base="StatisticalGridType">
      <xs:sequence>
        <xs:element name="numberOfAnnualDiversion" type="NumberOfAnnualDiversionsPropertyType" minOccurs="0"/>
        <xs:element name="areaOfAnnualDiversion" type="AreaOfAnnualDiversionsPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="LandUseDiversion" type="LandUseDiversionType" substitutionGroup="_StatisticalGrid"/>
<xs:complexType name="LandUseDiversionPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="LandUseDiversion"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
```

NumberOfAnnualDiversionsType

Type	Definition
NumberOfAnnualDiversionsType	Number of diversion per year.
Property	Definition
year	Survey year.

count	number of land diversion.
-------	---------------------------

```

<xs:element name="NumberOfAnnualDiversions" type="NumberOfAnnualDiversionsType"/>
<xs:complexType name="NumberOfAnnualDiversionsType">
  <xs:sequence>
    <xs:element name="year" type="gml:CodeType"/>
    <xs:element name="count" type="xs:nonNegativeInteger" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="NumberOfAnnualDiversionsPropertyType">
  <xs:sequence>
    <xs:element ref="NumberOfAnnualDiversions"/>
  </xs:sequence>
</xs:complexType>

```

AreaOfAnnualDiversionsType

Type	Definition
AreaOfAnnualDiversionsType	Total area of land diversions per year.
Property	Definition
year	Survey year.
area	total area of land diversions.

```

<xs:element name="AreaOfAnnualDiversions" type="AreaOfAnnualDiversionsType"/>
<xs:complexType name="AreaOfAnnualDiversionsType">
  <xs:sequence>
    <xs:element name="year" type="gml:CodeType"/>
    <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="AreaOfAnnualDiversionsPropertyType">
  <xs:sequence>
    <xs:element ref="AreaOfAnnualDiversions"/>
  </xs:sequence>
</xs:complexType>

```

4.2.6 HouseholdsType, Households

Object	Definition
Households	Number of households by ownership and building structure.
Property	Definition
numberOfOrdinaryHouseholds	Number of ordinary households.
numberOfMainHouseholds	Number of main households.
numberOfHouseholdsByOwnership	Number of households by ownership.
numberOfHouseholdsByStructure	Number of households by building structure.

```

<xs:complexType name="HouseholdsType">
  <xs:annotation>
    <xs:documentation>grid cell with the number of households</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="StatisticalGridType">
      <xs:sequence>
        <xs:element name="numberOfOrdinaryHousehold" type="xs:integer"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

<xs:element name="numberOfHouseholdsByOwnership" type="NumberOfHouseholdsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
<xs:element name="numberOfHouseholdsByStructure" type="NumberOfHouseholdsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
<xs:element name="numberOfMainHousehold" type="xs:integer"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="Households" type="HouseholdsType" substitutionGroup="_StatisticalGrid"/>
<xs:complexType name="HouseholdsPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="Households"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

NumberOfHouseholdsType

Type	Definition
NumberOfHouseholdsType	Number of households by type.
Property	Definition
class	Type of household.
number	Number of households.

```

<xs:element name="NumberOfHouseholds" type="NumberOfHouseholdsType"/>
<xs:complexType name="NumberOfHouseholdsType">
<xs:sequence>
<xs:element name="class" type="gml:CodeType"/>
<xs:element name="number" type="xs:integer"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="NumberOfHouseholdsPropertyType">
<xs:sequence>
<xs:element ref="NumberOfHouseholds"/>
</xs:sequence>
</xs:complexType>

```

4.2.7 OfficesAndEmployeesType, OfficesAndEmployees

Object	Definition
OfficesAndEmployees	Number of offices and employees in a mesh.
Property	Definition
numberOfOffices	Number of offices.
numberOfEmployees	Number of employees.

```

<xs:complexType name="OfficesAndEmployeesType">
<xs:complexContent>
<xs:extension base="StatisticalGridType">
<xs:sequence>
<xs:element name="numberOfOffices" type="xs:nonNegativeInteger" minOccurs="0"/>
<xs:element name="numberOfEmployees" type="xs:nonNegativeInteger" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>

```

```

<xs:element name="OfficesAndEmployees" type="OfficesAndEmployeesType" substitutionGroup="_StatisticalGrid"/>
<xs:complexType name="OfficesAndEmployeesPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urg:OfficesAndEmployees"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.8 GenericGridCellType, GenericGridCell

A *urg::GenericGridCell* is used to describe statistical grid data not covered by other classes defined in this module. Figure 3-5 shows the structure of *urg::GenericGridCell*. A *urg::GenericGridCell* can contain more than one pair of a key and a value.

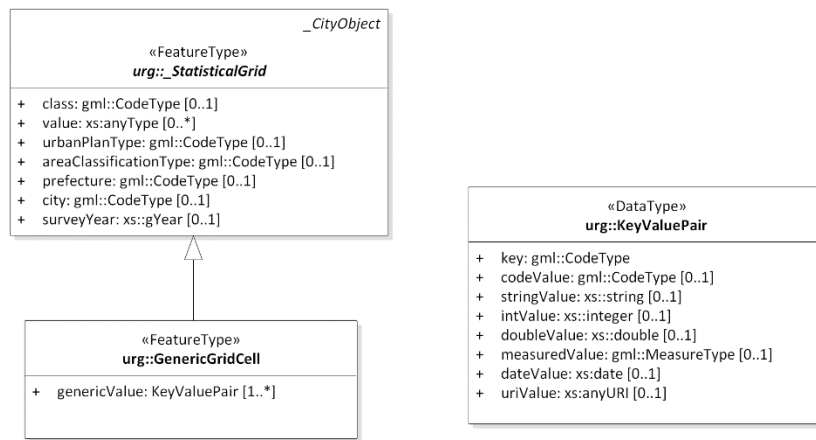


Figure 3-5 *urg::GenericGridCell*

GenericGridCell

Type	Definition
GenericGridCell	Extension mechanism for a grid cell of which value is not defined in this module.
Property	Definition
genericValue	A pair of user-defined key and value of this grid cell.

```

<xs:complexType name="GenericGridCellType">
  <xs:annotation>
    <xs:documentation>grid cell for various use</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="urg:StatisticalGridType">
      <xs:sequence>
        <xs:element name="genericValue" type="urg:KeyValuePairPropertyType" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<!-- ===== -->
<xs:element name="GenericGridCell" type="GenericGridCellType" substitutionGroup="_StatisticalGrid"/>
<!-- ===== -->
<xs:complexType name="GenericGridCellPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urg:GenericGridCell"/>
  </xs:sequence>

```



```

</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

KeyValuePair

Type	Definition
KeyValuePair	Extension mechanism for a grid value which is not defined in this module. This type should have two of its properties; "key" and one attribute for its value.
Property	Definition
key	Key of a value.
codeValue	Code value.
stringValue	String value.
intValue	Integer value.
doubleValue	Double value.
measuredValue	Measured value.
dateValue	Date value.
uriValue	URI value.

```

<xs:complexType name="KeyValuePairType">
  <xs:sequence>
    <xs:element name="key" type="gml:CodeType"/>
    <xs:choice>
      <xs:element name="stringValue" type="xs:string"/>
      <xs:element name="intValue" type="xs:integer"/>
      <xs:element name="doubleValue" type="xs:double"/>
      <xs:element name="codeValue" type="gml:CodeType"/>
      <xs:element name="measuredValue" type="gml:MeasureType"/>
      <xs:element name="dateValue" type="xs:date"/>
      <xs:element name="uriValue" type="xs:anyURI"/>
    </xs:choice>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="KeyValuePair" type="urg:KeyValuePairType"/>
<!-- ===== -->
<xs:complexType name="KeyValuePairPropertyType">
  <xs:sequence>
    <xs:element ref="urg:KeyValuePair"/>
  </xs:sequence>
</xs:complexType>

```

4.2.9 Extended properties of CityObjectGroup

A *grp::CityObjectGroup* inherits attributes from the parent class *core::_CityObject*. The attribute *core::creationDate* shows the date of dataset creation.

The *groupMember* property of *grp::CityObjectGroup* may contain a *core::_CityObject* element inline or an XLink reference to a remote *core::_CityObject* element, therefore extended city objects defined in this specification may also be contained in or referred from a *grp::CityObjectGroup*. XLink reference prevents data duplication and enables multiple use of the *CityObjects*. The attribute *grp::usage* which is inherited from *grp::CityObjectGroup* can represent that this object group is for the use of urban planning

Two elements, *urg::fiscalYearOfPublication* and *urg::language* are added as members of the substitution group *grp::_GenericApplicationPropertyOfCityObjectGroup*. A *urg::fiscalYear* is used to describe the year when the result of data collection has been published and a *urg::language* clarifies the language used in the city objects.

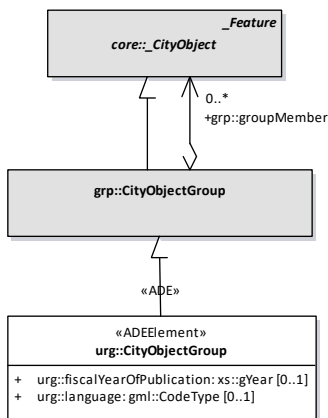


Figure 3-6 Extension of *grp:CityObjectGroup*

Extended properties of *CityObjectGroup*

Property	Definition
fiscalYearOfPublication	Fiscal year when the group has been published.
language	Language used in the group.

```
<xs:element name="fiscalYearOfPublication" type="xs:gYear"
substitutionGroup="grp::_GenericApplicationPropertyOfCityObjectGroup"/>
<xs:element name="language" type="gml:CodeType"
substitutionGroup="grp::_GenericApplicationPropertyOfCityObjectGroup"/>
```

Annex A (normative)

XMLSchema Definition

A.1 XMLSchema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:urg="https://www.geospatial.jp/iur/urg/3.1" xmlns:core="http://www.opengis.net/citygml/2.0"
xmlns:grp="http://www.opengis.net/citygml/cityobjectgroup/2.0" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:gml="http://www.opengis.net/gml" targetNamespace="https://www.geospatial.jp/iur/urg/3.1"
elementFormDefault="qualified" attributeFormDefault="unqualified" version="3.0">
  <xs:annotation>
    <xs:documentation>XML Schema for Statistical Grid module</xs:documentation>
  </xs:annotation>
  <xs:import namespace="http://www.opengis.net/gml"
schemaLocation="http://schemas.opengis.net/gml/3.1.1/base/gml.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/2.0"
schemaLocation="http://schemas.opengis.net/citygml/2.0/cityGMLBase.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/cityobjectgroup/2.0"
schemaLocation="http://schemas.opengis.net/citygml/cityobjectgroup/2.0/cityObjectGroup.xsd"/>
  <!-- ===== -->
  <!-- ===== CityGML StatisticalGrid module ===== -->
  <!-- ===== -->
  <xs:complexType name="StatisticalGridType" abstract="true">
    <xs:complexContent>
      <xs:extension base="core:AbstractCityObjectType">
        <xs:sequence>
          <xs:element name="class" type="gml:CodeType" minOccurs="0"/>
          <xs:element name="value" type="xs:anyType" minOccurs="0" maxOccurs="unbounded"/>
          <xs:element name="urbanPlanType" type="gml:CodeType" minOccurs="0"/>
          <xs:element name="areaClassificationType" type="gml:CodeType" minOccurs="0"/>
          <xs:element name="prefecture" type="gml:CodeType" minOccurs="0"/>
          <xs:element name="city" type="gml:CodeType" minOccurs="0"/>
          <xs:element name="surveyYear" type="xs:gYear" minOccurs="0"/>
          <xs:element name="lod-1MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
          <xs:element name="lod-2MultiSurface" type="gml:MultiSurfacePropertyType" minOccurs="0"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="_StatisticalGrid" type="urg:StatisticalGridType" abstract="true"
substitutionGroup="core:_CityObject"/>
  <xs:complexType name="StatisticalGridPropertyType">
    <xs:sequence minOccurs="0">
      <xs:element ref="urg:_StatisticalGrid"/>
    </xs:sequence>
    <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
  </xs:complexType>
  <!-- ===== -->
  <xs:complexType name="PopulationType">
    <xs:annotation>
      <xs:documentation>grid cell with population values</xs:documentation>
    </xs:annotation>
    <xs:complexContent>
      <xs:extension base="urg:StatisticalGridType">
        <xs:sequence>
```

```

<xs:element name="total" type="xs:integer" minOccurs="0"/>
<xs:element name="daytimePopulation" type="xs:integer" minOccurs="0"/>
<xs:element name="daytimePopulationDensity" type="xs:double" minOccurs="0"/>
<xs:element name="naturalIncrease" type="xs:integer" minOccurs="0"/>
<xs:element name="births" type="xs:integer" minOccurs="0"/>
<xs:element name="deaths" type="xs:integer" minOccurs="0"/>
<xs:element name="socialIncrease" type="xs:integer" minOccurs="0"/>
<xs:element name="moveFrom" type="xs:integer" minOccurs="0"/>
<xs:element name="moveTo" type="xs:integer" minOccurs="0"/>
<xs:element name="increasement" type="xs:integer" minOccurs="0"/>
<xs:element name="malePopulation" type="xs:integer" minOccurs="0"/>
<xs:element name="femalePopulation" type="xs:integer" minOccurs="0"/>
<xs:element name="populationByAgeAndSex" type="urg:PopulationByAgeAndSexPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="Population" type="urg:PopulationType" substitutionGroup="urg:_StatisticalGrid"/>
<xs:complexType name="PopulationPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urg:Population"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:element name="PopulationByAgeAndSex" type="urg:PopulationByAgeAndSexType"/>
<xs:complexType name="PopulationByAgeAndSexType">
<xs:sequence>
<xs:element name="ageAndSex" type="gml:CodeType"/>
<xs:element name="number" type="xs:integer" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
<xs:complexType name="PopulationByAgeAndSexPropertyType">
<xs:sequence>
<xs:element ref="urg:PopulationByAgeAndSex"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="PublicTransitAccessibilityType">
<xs:annotation>
<xs:documentation>grid cell to describe areas where the public transportation service is
available</xs:documentation>
</xs:annotation>
<xs:complexContent>
<xs:extension base="urg:StatisticalGridType">
<xs:sequence>
<xs:element name="availability" type="xs:boolean" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="PublicTransitAccessibility" type="urg:PublicTransitAccessibilityType"
substitutionGroup="urg:_StatisticalGrid"/>
<xs:complexType name="PublicTransitAccessibilityPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urg:PublicTransitAccessibility"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

```

<!-- ===== -->
<xs:complexType name="LandPriceType">
  <xs:annotation>
    <xs:documentation>grid cell with land prices</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="urg:StatisticalGridType">
      <xs:sequence>
        <xs:element name="landPrice" type="urg:LandPricePerLandUsePropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="currencyUnit" type="gml:CodeType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="LandPrice" type="urg:LandPriceType" substitutionGroup="urg:_StatisticalGrid"/>
<xs:complexType name="LandPricePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urg:LandPrice"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:element name="LandPricePerLandUse" type="urg:LandPricePerLandUseType"/>
<xs:complexType name="LandPricePerLandUseType">
  <xs:sequence>
    <xs:element name="landUse" type="gml:CodeType"/>
    <xs:element name="landPrice" type="xs:integer" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="LandPricePerLandUsePropertyType">
  <xs:sequence>
    <xs:element ref="urg:LandPricePerLandUse"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="LandUseDiversionType">
  <xs:annotation>
    <xs:documentation>grid cell with the number and area of land use diversion</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="urg:StatisticalGridType">
      <xs:sequence>
        <xs:element name="numberOfAnnualDiversion" type="urg:NumberOfAnnualDiversionsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="areaOfAnnualDiversion" type="urg:AreaOfAnnualDiversionsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="LandUseDiversion" type="urg:LandUseDiversionType" substitutionGroup="urg:_StatisticalGrid"/>
<xs:complexType name="LandUseDiversionPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urg:LandUseDiversion"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->

```

```

<xs:element name="NumberOfAnnualDiversions" type="urg:NumberOfAnnualDiversionsType"/>
<xs:complexType name="NumberOfAnnualDiversionsType">
  <xs:sequence>
    <xs:element name="year" type="xs:gYear"/>
    <xs:element name="count" type="xs:nonNegativeInteger" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="NumberOfAnnualDiversionsPropertyType">
  <xs:sequence>
    <xs:element ref="urg:NumberOfAnnualDiversions"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:element name="AreaOfAnnualDiversions" type="urg:AreaOfAnnualDiversionsType"/>
<xs:complexType name="AreaOfAnnualDiversionsType">
  <xs:sequence>
    <xs:element name="year" type="xs:gYear"/>
    <xs:element name="area" type="gml:MeasureType" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="AreaOfAnnualDiversionsPropertyType">
  <xs:sequence>
    <xs:element ref="urg:AreaOfAnnualDiversions"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="HouseholdsType">
  <xs:annotation>
    <xs:documentation>grid cell with the number of households</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="urg:StatisticalGridType">
      <xs:sequence>
        <xs:element name="numberOfOrdinaryHousehold" type="xs:integer"/>
        <xs:element name="numberOfHouseholdsByOwnership" type="urg:NumberOfHouseholdsPropertyType"
minOccurs="0" maxOccurs="unbounded"/>
        <xs:element name="numberOfHouseholdsByStructure" type="urg:NumberOfHouseholdsPropertyType" minOccurs="0"
maxOccurs="unbounded"/>
        <xs:element name="numberOfMainHousehold" type="xs:integer"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Households" type="urg:HouseholdsType" substitutionGroup="urg:_StatisticalGrid"/>
<xs:complexType name="HouseholdsPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urg:Households"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:element name="NumberOfHouseholds" type="urg:NumberOfHouseholdsType"/>
<xs:complexType name="NumberOfHouseholdsType">
  <xs:sequence>
    <xs:element name="class" type="gml:CodeType"/>
    <xs:element name="number" type="xs:integer"/>
  </xs:sequence>
</xs:complexType>
<xs:complexType name="NumberOfHouseholdsPropertyType">
  <xs:sequence>

```

```

<xs:element ref="urg:NumberOfHouseholds"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="OfficesAndEmployeesType">
<xs:complexContent>
<xs:extension base="urg:StatisticalGridType">
<xs:sequence>
<xs:element name="numberOfOffices" type="xs:nonNegativeInteger" minOccurs="0"/>
<xs:element name="numberOfEmployees" type="xs:nonNegativeInteger" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="OfficesAndEmployees" type="urg:OfficesAndEmployeesType"
substitutionGroup="urg:_StatisticalGrid"/>
<xs:complexType name="OfficesAndEmployeesPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urg:OfficesAndEmployees"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="GenericGridCellType">
<xs:annotation>
<xs:documentation>grid cell for various use</xs:documentation>
</xs:annotation>
<xs:complexContent>
<xs:extension base="urg:StatisticalGridType">
<xs:sequence>
<xs:element name="genericValue" type="urg:KeyValuePairPropertyType" maxOccurs="unbounded"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="GenericGridCell" type="urg:GenericGridCellType" substitutionGroup="urg:_StatisticalGrid"/>
<xs:complexType name="GenericGridCellPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urg:GenericGridCell"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:element name="KeyValuePair" type="urg:KeyValuePairType"/>
<xs:complexType name="KeyValuePairType">
<xs:sequence>
<xs:element name="key" type="gml:CodeType"/>
<xs:choice>
<xs:element name="stringValue" type="xs:string"/>
<xs:element name="intValue" type="xs:integer"/>
<xs:element name="doubleValue" type="xs:double"/>
<xs:element name="codeValue" type="gml:CodeType"/>
<xs:element name="measuredValue" type="gml:MeasureType"/>
<xs:element name="dateValue" type="xs:date"/>
<xs:element name="uriValue" type="xs:anyURI"/>
</xs:choice>
</xs:sequence>
</xs:complexType>
<xs:complexType name="KeyValuePairPropertyType">

```

```

<xs:sequence>
  <xs:element ref="urg:KeyValuePair"/>
</xs:sequence>
</xs:complexType>
<!-- ===== Extended attribute for CityObjectGroup ===== -->
<xs:element name="fiscalYearOfPublication" type="xs:gYear"
substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>
<xs:element name="language" type="gml:CodeType"
substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>
</xs:schema>

```

A.2 Sample data (informative)

Example of Population

```

<?xml version="1.0" encoding="UTF-8"?>
<!-- Sample data edited by i-Urban Revitalization Promotion Committee Specification WG -->
<core:CityModel xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:grp="http://www.opengis.net/citygml/cityobjectgroup/2.0" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:gml="http://www.opengis.net/gml" xmlns:core="http://www.opengis.net/citygml/2.0" xmlns:urg="https://www.geospatial.jp/iur/urg/3.1" xsi:schemaLocation="https://www.geospatial.jp/iur/urg/3.1 https://www.geospatial.jp/iur/schemas/urg/3.1/statisticalGrid.xsd http://www.opengis.net/citygml/cityobjectgroup/2.0 http://schemas.opengis.net/citygml/cityobjectgroup/2.0/cityObjectGroup.xsd http://www.opengis.net/citygml/2.0 http://schemas.opengis.net/citygml/2.0/cityGMLBase.xsd http://www.opengis.net/gml http://schemas.opengis.net/gml/3.1.1/base/gml.xsd">
  <gml:boundedBy>
    <gml:Envelope srsName="http://www.opengis.net/def/crs/EPSSG/0/6697" srsDimension="3">
      <gml:lowerCorner>33.8 130.54 0</gml:lowerCorner>
      <gml:upperCorner>33.9 130.56 0</gml:upperCorner>
    </gml:Envelope>
  </gml:boundedBy>
  <core:cityObjectMember>
    <grp:CityObjectGroup>
      <gml:name>grid sample data</gml:name>
      <grp:usage codeSpace="https://www.geospatial.jp/iur/codelists/3.0/CityObjectGroup_usage.xml">2000</grp:usage>
      <grp:groupMember>
        <urg:Population gml:id="population418">
          <gml:description>サンプル地区 1</gml:description>
          <gml:name>503064032</gml:name>
          <urg:urbanPlanType codeSpace="https://www.geospatial.jp/iur/codelists/3.0/Common_urbanPlanType.xml">1010
        </urg:urbanPlanType>
          <urg:areaClassificationType codeSpace="https://www.geospatial.jp/iur/codelists/3.0/Common_areaClassification.xml">1030</urg:areaClassificationType>
          <urg:prefecture codeSpace="https://www.geospatial.jp/iur/codelists/3.0/Common_prefecture.xml">40</urg:prefecture>
          <urg:city codeSpace="https://www.geospatial.jp/iur/codelists/3.0/Common_localPublicAuthorities.xml">40220</urg:city>
          <urg:surveyYear>2017</urg:surveyYear>
          <urg:lod-1MultiSurface>
            <gml:MultiSurface gml:id="grid1">
              <gml:surfaceMember>
                <gml:Polygon>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:pos>33.83333333 130.55 0</gml:pos>
                      <gml:pos>33.8375 130.55 0</gml:pos>
                      <gml:pos>33.8375 130.54375 0</gml:pos>
                      <gml:pos>33.83333333 130.54375 0</gml:pos>
                      <gml:pos>33.83333333 130.55 0</gml:pos>
                    </gml:LinearRing>

```



```

    </gml:exterior>
  </gml:Polygon>
</gml:surfaceMember>
</gml:MultiSurface>
</urg:lod-1MultiSurface>
<urg:total>400</urg:total>
<urg:daytimePopulation>50</urg:daytimePopulation>
<urg:naturalIncrease>-1</urg:naturalIncrease>
<urg:births>3</urg:births>
<urg:deaths>4</urg:deaths>
<urg:socialIncrease>5</urg:socialIncrease>
<urg:moveFrom>10</urg:moveFrom>
<urg:moveTo>5</urg:moveTo>
<urg:increasement>4</urg:increasement>
<urg:malePopulation>200</urg:malePopulation>
<urg:femalePopulation>200</urg:femalePopulation>
<urg:populationByAgeAndSex>
  <urg:PopulationByAgeAndSex>
    <urg:ageAndSex codeSpace="https://www.geospatial.jp/iur/codelists/3.0/PopulationByAgeAndSexType_age.xml"
>1010</urg:ageAndSex>
    <urg:number>5</urg:number>
  </urg:PopulationByAgeAndSex>
</urg:populationByAgeAndSex>
<urg:populationByAgeAndSex>
  <urg:PopulationByAgeAndSex>
    <urg:ageAndSex codeSpace="https://www.geospatial.jp/iur/codelists/3.0/PopulationByAgeAndSexType_age.xml"
>1020</urg:ageAndSex>
    <urg:number>5</urg:number>
  </urg:PopulationByAgeAndSex>
</urg:populationByAgeAndSex>

<!-- omitted -->

</grp:groupMember>
<grp:groupMember>
  <urg:Population gml:id="population417">
    <gml:description>サンプル地区 1</gml:description>
    <gml:name>503064032</gml:name>
    <urg:urbanPlanType codeSpace="https://www.geospatial.jp/iur/codelists/3.0/Common_urbanPlanType.xml">1010
</urg:urbanPlanType>
    <urg:areaClassificationType codeSpace="https://www.geospatial.jp/iur/codelists/3.0/Common_areaClassification.
xml">1030</urg:areaClassificationType>
    <urg:prefecture codeSpace="https://www.geospatial.jp/iur/codelists/3.0/Common_prefecture.xml">40</urg:pref
ecture>
    <urg:city codeSpace="https://www.geospatial.jp/iur/codelists/3.0/Common_localPublicAuthorities.xml">40220</
urg:city>
    <urg:surveyYear>2016</urg:surveyYear>
    <urg:lod-1MultiSurface xlink:href="#grid1"/>

<!-- omitted -->

    <urg:fiscalYearOfPublication>2016</urg:fiscalYearOfPublication>
  </grp:CityObjectGroup>
</core:cityObjectMember>
</core:CityModel>

```

Example of GenericGridCell

```

<?xml version="1.0" encoding="UTF-8"?>
<core:CityModel xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xmlns:grp="http://www.opengis.net/citygml/cityobjectgroup/2.0"
  xmlns:xlink="http://www.w3.org/1999/xlink"
  xmlns:gml="http://www.opengis.net/gml"
  xmlns:core="http://www.opengis.net/citygml/2.0"
  xmlns:urg="https://www.geospatial.jp/iur/urg/2.0"
  xsi:schemaLocation="https://www.geospatial.jp/iur/urg/2.0 https://www.geospatial.jp/iur/schemas/urg/2.0/statisticalGrid.xsd
  http://www.opengis.net/citygml/cityobjectgroup/2.0 http://schemas.opengis.net/citygml/cityobjectgroup/2.0/cityObjectGroup.xsd
  http://www.opengis.net/citygml/2.0 http://schemas.opengis.net/citygml/2.0/cityGMLBase.xsd
  http://www.opengis.net/gml http://schemas.opengis.net/gml/3.1.1/base/gml.xsd">
  <gml:boundedBy>
    <gml:Envelope srsName="http://www.opengis.net/def/crs/EPSSG/0/6697" srsDimension="3">
      <gml:lowerCorner>33.8 130.54 0</gml:lowerCorner>
      <gml:upperCorner>33.9 130.56 0</gml:upperCorner>
    </gml:Envelope>
  </gml:boundedBy>
  <core:cityObjectMember>
    <grp:CityObjectGroup>
      <gml:name>grid sample data</gml:name>
      <grp:usage codeSpace="https://www.geospatial.jp/iur/codelists/3.0/CityObjectGroup_usage.xml">2000</grp:usage>
      <grp:groupMember>
        <urg:GenericGridCell>
          <gml:description>サンプル地区 1</gml:description>
          <gml:name>503064032</gml:name>
          <urg:lod-1MultiSurface>
            <gml:MultiSurface gml:id="grid1">
              <gml:surfaceMember>
                <gml:Polygon>
                  <gml:exterior>
                    <gml:LinearRing>
                      <gml:pos>33.83333333 130.55 0</gml:pos>
                      <gml:pos>33.8375 130.55 0</gml:pos>
                      <gml:pos>33.8375 130.54375 0</gml:pos>
                      <gml:pos>33.83333333 130.54375 0</gml:pos>
                      <gml:pos>33.83333333 130.55 0</gml:pos>
                    </gml:LinearRing>
                  </gml:exterior>
                </gml:Polygon>
              </gml:surfaceMember>
            </gml:MultiSurface>
          </urg:lod-1MultiSurface>
          <urg:genericValue>
            <urg:KeyValuePair>
              <urg:key codeSpace=" https://www.geospatial.jp/iur/codelists/3.0/GenericGrid_key.xml">1010</urg:key>
              <urg:codeValue codeSpace=" https://www.geospatial.jp/iur/codelists/3.0/GenericGrid_key.xml">1010</urg:codeValue>
            </urg:KeyValuePair>
          </urg:genericValue>
          <urg:genericValue>
            <urg:KeyValuePair>
              <urg:key codeSpace=" https://www.geospatial.jp/iur/codelists/3.0/GenericGrid_key.xml">1020</urg:key>
              <urg:intValue>1</urg:intValue>
            </urg:KeyValuePair>
          </urg:genericValue>
        </urg:GenericGridCell>
      </grp:groupMember>
      <urg:fiscalYearOfPublication>2016</urg:fiscalYearOfPublication>
    </grp:CityObjectGroup>
  </core:cityObjectMember>
</gml:boundedBy>
</core:CityModel>

```

```
</grp:CityObjectGroup>  
</core:cityObjectMember>  
</core:CityModel>
```

Annex B (informative)

Code lists for Statistical Grid Data

A code list is a form of enumeration where the valid values are defined in a separate register. The code list values consist of a link or identifier for the register as well as the value from that register which is being used. In contrast to fixed enumerations, modifications and extensions to the value domain become possible with code lists. The values for all code lists in Urban Planning ADE are defined externally as in CityGML. This could, for example, be by adopting classifications from global, national, or community standards.

Examples of code lists for Urban Planning ADE can be found in Geospatial Information Center (<https://www.geospatial.jp/iur/codelists/>) which reflect the results of the efforts to convert basic city planning surveys into open data led by the Ministry of Land, Infrastructure, Transport and Tourism of Japan (https://www.mlit.go.jp/toshi/city_plan/toshi_city_plan_tk_000049.html).

Please note that this annex is non-normative and the example code lists are neither mandatory nor complete.

Annex C (normative)

Concept of Extended LOD

C.1 Introduction

In city planning, it is necessary to harmonize with its higher plans, e.g. the national spatial strategy and the regional plan. These higher plans require rough city models which can be applied on a national or worldwide level for comparison and analysis of cities. For this purpose, this module defines two extended LODs for urban functions. The LOD-1 (minus one) for nationwide city models and the LOD-2 (minus two) for worldwide city models without inconsistency between LOD 0 to 4 as shown in Figure C-1. These extended LODs allow users to employ global 3D city models in policy making phases.

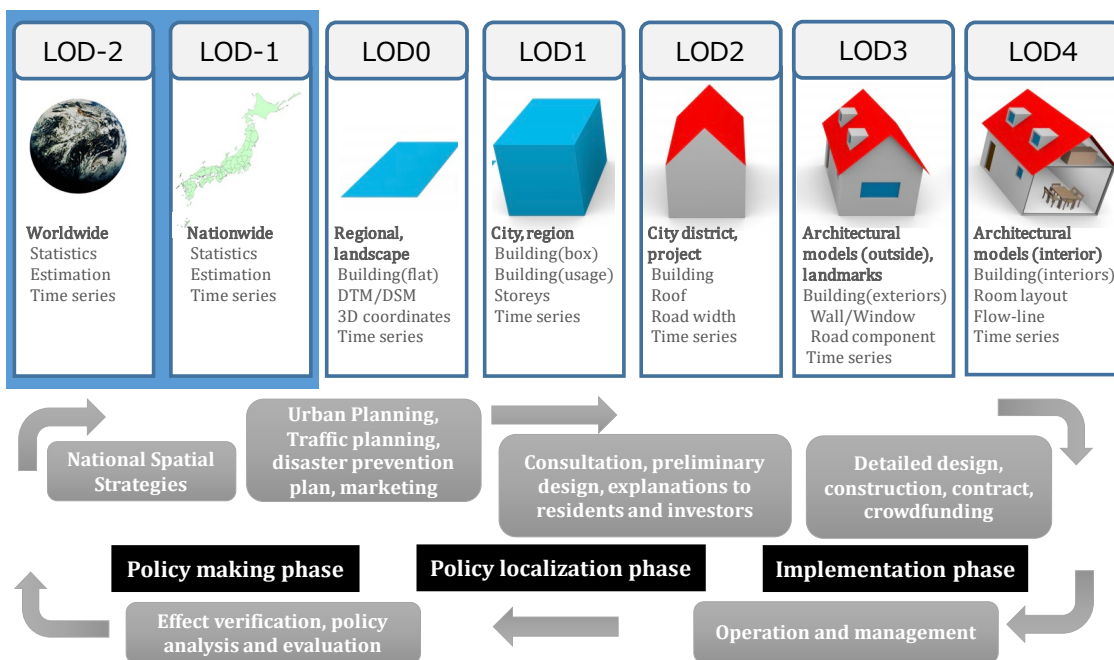


Figure C-1 Extended LOD for global city models

C.2 Extended LODs for Statistical Grid

The mechanism of Extended LOD in Statistical Grid module is implemented as associations of *urg::_StatisticalGrid*, the root class of this module. Since grid cells provide an overview of the real world, this module defines *urg::lod-1MultiSurface* and *urg::lod-2MultiSurface* as shown in Figure C-1 to declare explicitly that a grid described in LOD-1 or LOD-2 represents the global city model.

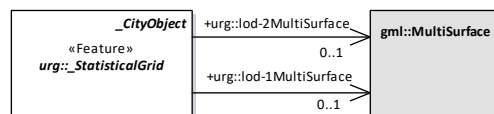


Figure C-2 Extended LOD applied to Statistical Grid module

Part 4. Public Transit Data Encoding Specification

1. Scope

Public transit connects urban areas to urban areas and enables people to move between cities. It also allows urban areas to share and aggregate their functions in regional area, therefore information on public transit is necessary for considering aggregation and relocation of urban functions.

The General Transit Feed Specification (GTFS) is a data specification that allows public transit agencies to publish their transit data in a common format that can be consumed by a wide variety of software applications and is now widely used to supply data on public transit for use in multimodal journey planning applications and research on transit accessibility.

This document defines conceptual model and XMLSchema based on the GTFS for integrating public transit information into 3D city models in order to contribute to promoting urban revitalization. The conceptual model and XMLSchema defined in this document also contains additional information extended by GTFS-JP, which expands GTFS according to the circumstances in Japan.

2. Normative references

Followings are normative references of this document.

- OpenGIS® OGC City Geography Markup Language (CityGML) Encoding Standard, Version 2.0, OGC document 12-019
- General Transit Feed Specification Reference (<http://gtfs.org/reference/static>)
- GTFS-JP (<https://www.gtfs.jp/developpers-guide/format-reference.html>)

3. Conventions

3.1 Terms and definitions

No terms and definitions are listed in this document.

3.2 Abbreviated terms

ADE Application Domain Extensions

CityGML City Geography Markup Language

GML Geography Markup Language

GTFS General Transit Feed Specification

LOD Levels Of Detail

OGC Open Geospatial Consortium

UML Unified Modeling Language

4. Public Transit Data Encoding

4.1 Overview

The Public Transit Data Encoding is an extension of CityGML. This document defines the elements and types according to the rules of the Application Domain Extensions (ADE) for describing public transit schedules and network based on GTFS file format. Those already defined in CityGML are imported without any inconsistency. Table 4-1 provides mapping between GTFS files and classes defined in this document.

Table 4-1 Implementation of types from GTFS files

GTFS files	Description	Classes
agency.txt	Transit agencies with service represented in this dataset.	urt::Agency
stops.txt	Stops where vehicles pick up or drop off riders. Also defines stations and station entrances.	urt::Stop
routes.txt	Transit routes. A route is a group of trips that are displayed to riders as a single service.	urt::Route
trips.txt	Trips for each route. A trip is a sequence of two or more stops that occur during a specific time period.	urt::Trip
stop_times.txt	Times that a vehicle arrives at and departs from stops for each trip.	urt::StopTime
calendar.txt	Service dates specified using a weekly schedule with start and end dates. This file is required unless all dates of service are defined in calendar_dates.txt.	urt::Calendar
calendar_dates.txt	Exceptions for the services defined in the calendar.txt. If calendar.txt is omitted, then calendar_dates.txt is required and must contain all dates of service.	urt::CalendarDate
fare_attributes.txt	Fare information for a transit agency's routes.	urt::FareAttribute
fare_rules.txt	Rules to apply fares for itineraries.	urt::FareRule
shapes.txt	Rules for mapping vehicle travel paths, sometimes referred to as route alignments.	urt::Shape
frequencies.txt	Headway (time between trips) for headway-based service or a compressed representation of fixed-schedule service.	urt::Frequency
transfers.txt	Rules for making connections at transfer points between routes.	urt::Transfer
pathways.txt	Pathways linking together locations within stations.	urt::Pathway
levels.txt	Levels within stations.	urt::Level
translations.txt	Translations of customer-facing dataset values.	urt::Translation
feed_info.txt	Dataset metadata, including publisher, version, and expiration information.	urt::FeedInfo
attributions.txt	Dataset attributions.	urt::Attribution
agency_jp.txt	Additional descriptive information of an agency for the use in Japan	(Set as properties of urt::Agency)
route_jp.txt	Additional descriptive information of a route for the use in Japan	(Set as properties of urt::Route)
office_jp.txt	Optional information of service office for the use in Japan	urt::Office
translations.txt (of Japan)	Extended information of translation for the use in Japan.	urt::TranslationJP

Figure 4-1 shows the structure of Public Transit Data.

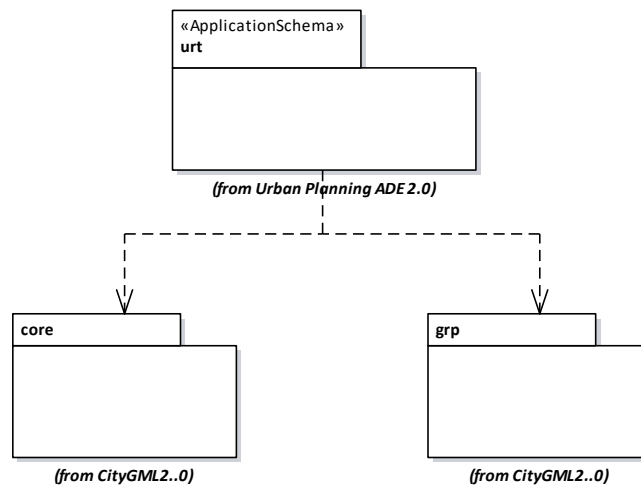


Figure 4-1 Package diagram of Public Transit Data

Module name	Public Transit
XML namespace identifier	https://www.geospatial.jp/iur/urt/2.0
XMLSchema location	https://www.geospatial.jp/iur/schemas/urt/2.0/publicTransit.xsd
Recommended namespace prefix	urt
Description	This module defines public transit schedules and associated geographic information; e.g. route, stop, trip.

4.2 Object definition

Public Transit module defines two types of object; identifiable object and non-identifiable object. Those which have an identifier are inherited from *core::_CityObject* directly or indirectly. A root class of identifiable object is defined in 4.2.1, and a root class of non-identifiable objects is defined in 4.2.2 of this document.

4.2.1 PublicTransitType, _PublicTransit

A root class of identifiable object in this module is *urt::_PublicTransit* which inherits from *core::_CityObject* and it has one attribute *urt::orgId*. GTFS files include IDs of Objects, however these IDs may not conform to XML ID. The *urt::orgId* can be used to store original ID in GTFS files to keep reversibility.

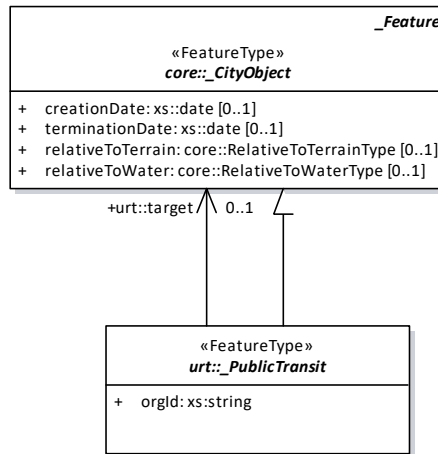


Figure 4-2 Public Transit

Object	Definition
_PublicTransit	Identifiable root class of Public Transit module.
Property	Definition
orgId	A code which identifies the public transit object which is imported from GTFS files.
target	Reference to the real city object; e.g. bus stop.

```

<xs:complexType name="PublicTransitType" abstract="true">
  <xs:complexContent>
    <xs:extension base="core:AbstractCityObjectType">
      <xs:sequence>
        <xs:element name="orgId" type="xs:string"/>
        <xs:element name="target" type="TargetPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="_PublicTransit" type="urt:PublicTransitType" abstract="true"
substitutionGroup="core::_CityObject"/>
<xs:complexType name="PublicTransitPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt::_PublicTransit"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<xs:complexType name="TargetPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="core::_CityObject"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

The type "TargetPropertyType" is used for an association with a *core::_CityObject*. Subclass of *urt::_PublicTransit* may refer to concrete *CityObject*, e.g. bus stop using this property type.

Figure 4-3 shows the subclasses of *urt::_PublicTransit*. These subclasses are categorized into four group from the point of information granularity for public transit. The coarsest Level 0 class includes basic transit network and the most detailed level 3 classes include operation information of transit network.

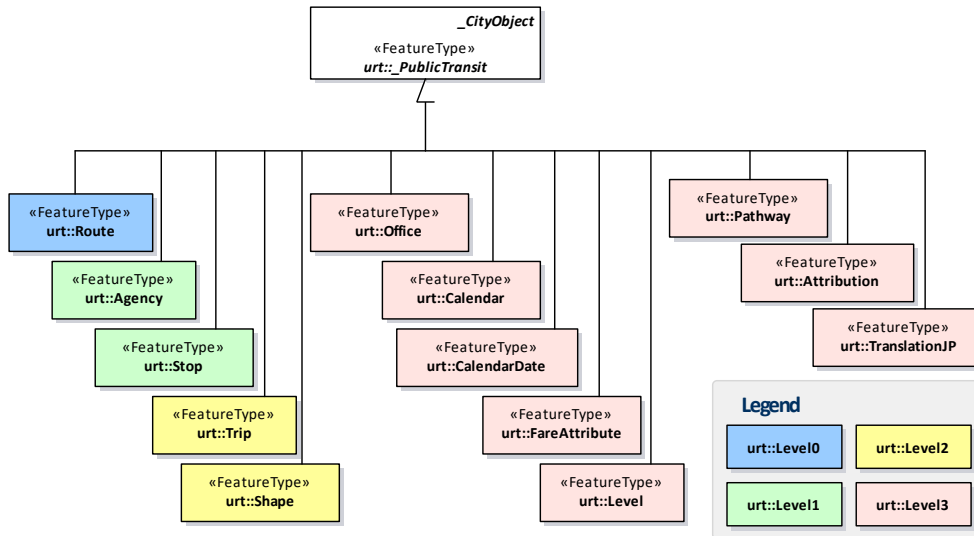


Figure 4-3 Subclasses of Public Transit module

4.2.2 PublicTransitDataType, _PublicTransitDataType

An abstract class *urt::_PublicTransitDataType* is a root class of objects without identifier in this module. This class is defined for convenience to allow objects without identifier to appear under a city object group. Each *DataType* class which is not used as a part of *FeatureType* class inherits *urt::_PublicTransitDataType*. Figure 4-4 shows the structure of *urt::_PublicTransitDataType* and its subclasses.

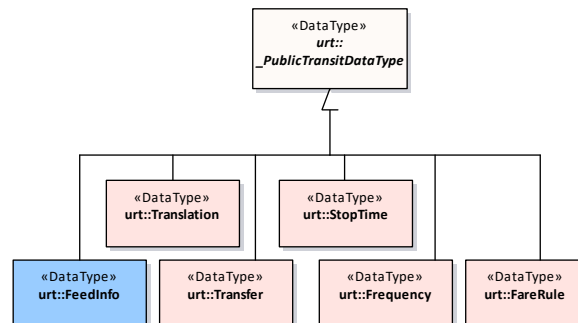


Figure 4-4 DataType classes in Public Transit module

Type	Definition
PublicTransitDataType	A root class for non-identical object defined in Public Transit module.

```

<xs:complexType name="PublicTransitDataTypeType" abstract="true"/>
<xs:element name="_PublicTransitDataType" type="urt:PublicTransitDataTypeType" abstract="true"/>
<xs:complexType name="PublicTransitDataTypePropertyType">
  <xs:sequence>
    <xs:element ref="urt:_PublicTransitDataType"/>
  </xs:sequence>
</xs:complexType>

```

Figure 4-5 shows the overview of these associations among identifiable classes and non-identifiable classes. Detailed UML class diagrams are described in following subclasses.

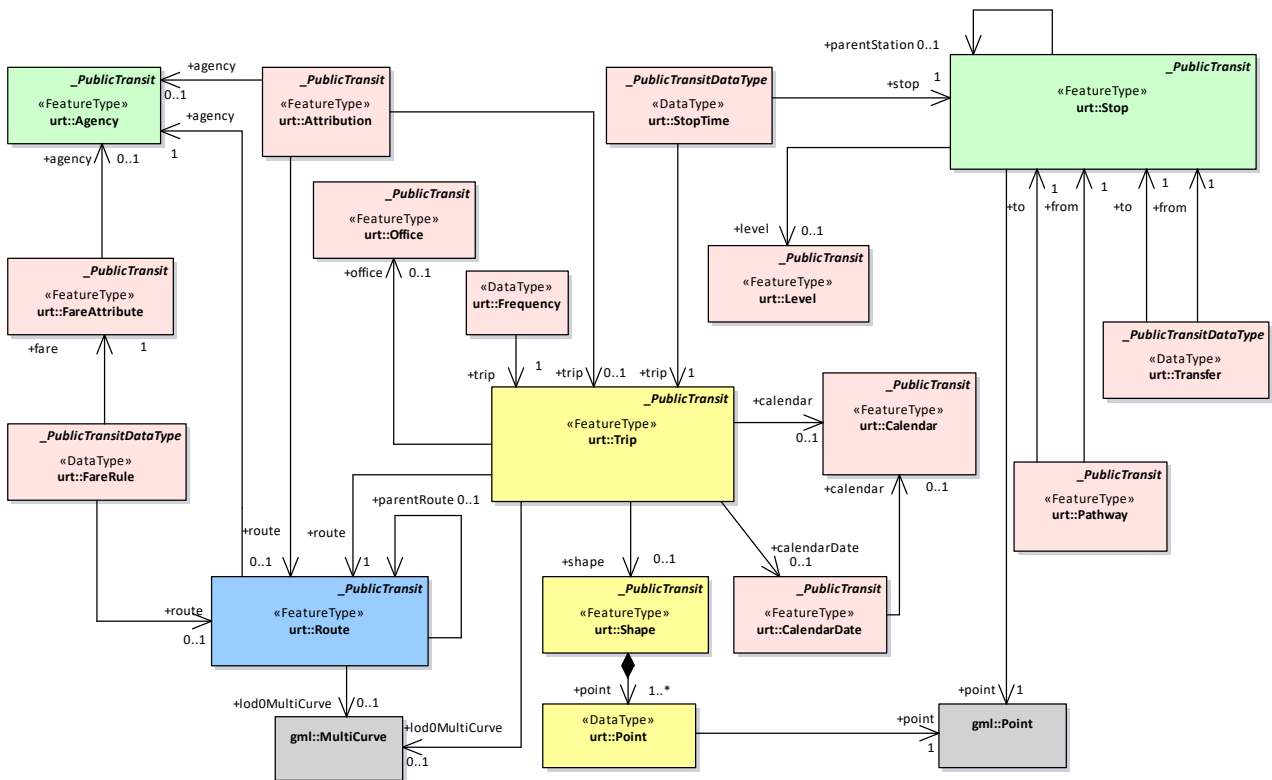


Figure 4-5 Associations between Subclasses of Public Transit module

4.2.3 RouteType, Route

A *urt::Route* is a transit route which is a group of trips that are displayed to riders as a single service. Figure 4-6 shows the structure of *urt::Route* and its related classes.

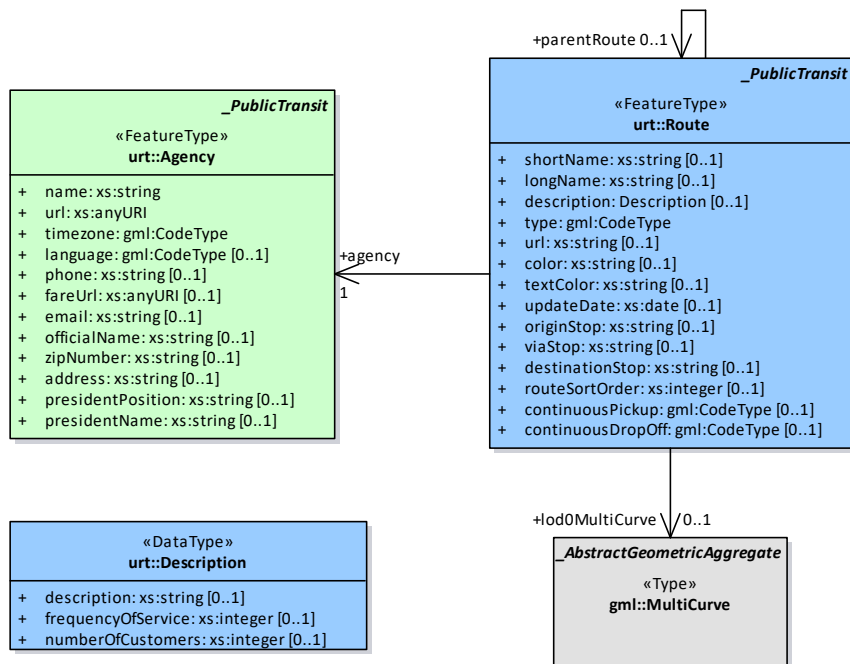


Figure 4-6 UML diagram of *urt::Route* and *urt::Agency*

Type	Definition
Route	Transit routes. A route is a group of trips that are displayed to riders as a single service.
Property	Definition
shortName	Short name of a route. Either <i>urt::shortName</i> or <i>urt::longName</i> must be specified, or potentially both if appropriate.
longName	Full name of a route. Either <i>urt::shortName</i> or <i>urt::longName</i> must be specified, or potentially both if appropriate.
description	Description of a route that provides useful, quality information.
type	Indicates the type of transit used on a route.
url	URL of a web page about the particular route. Should be different from the url value of agency.
color	Route color designation that matches public facing material.
textColor	Legible color to use for text drawn against a background of <i>urt::color</i> .
updateDate	date of the service schedule changed.
originStop	Name of the start stop, extended in GTFS-JP.
viaStop	Name of the via stop, extended in GTFS-JP.
destinationStop	Name of the destination stop, extended in GTFS-JP.
routeSortOrder	Orders the routes in a way which is ideal for presentation to customers.
continuousPickup	Indicates that the rider can board the transit vehicle at any point along the vehicle's travel path as described by <i>urt::shape</i> , on every trip of the route.
continuousDropOff	Indicates that the rider can alight from the transit vehicle at any point along the vehicle's travel path as described by <i>urt::shape</i> , on every trip of the route.
agency	Agency for the specified route.
parentRoute	Parent route of this route.
lod0MultiCurve	Geometry of this route. This geometric attribute is not defined in GTFS <i>Route.txt</i> but is extended for the use in i-Urban Revitalization.

```

<xs:complexType name="RouteType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="shortName" type="xs:string" minOccurs="0"/>
        <xs:element name="longName" type="xs:string" minOccurs="0"/>
        <xs:element name="description" type="urt:DescriptionPropertyType" minOccurs="0"/>
        <xs:element name="type" type="gml:CodeType"/>
        <xs:element name="url" type="xs:string" minOccurs="0"/>
        <xs:element name="color" type="xs:string" minOccurs="0"/>
        <xs:element name="textColor" type="xs:string" minOccurs="0"/>
        <xs:element name="updateDate" type="xs:date" minOccurs="0"/>
        <xs:element name="originStop" type="xs:string" minOccurs="0"/>
        <xs:element name="viaStop" type="xs:string" minOccurs="0"/>
        <xs:element name="destinationStop" type="xs:string" minOccurs="0"/>
        <xs:element name="routeSortOrder" type="xs:integer" minOccurs="0"/>
        <xs:element name="continuousPickup" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="continuousDropOff" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="agency" type="urt:AgencyPropertyType"/>
        <xs:element name="parentRoute" type="urt:RoutePropertyType" minOccurs="0"/>
        <xs:element name="lod0MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Route" type="urt:RouteType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="RoutePropertyType">

```

```

<xs:sequence minOccurs="0">
  <xs:element ref="urt:Route"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

DescriptionType, Description

Type	Definition
Description	Descriptive information of a route.
Property	Definition
description	Useful and quality information of a route.
frequencyOfService	Frequency of service per day. This information is not defined in GTFS but is added for i-Urban Revitalization.
numberOfCustomers	Number of customers per day. This information is not defined in GTFS but is added for i-Urban Revitalization.

```

<xs:complexType name="DescriptionType">
  <xs:sequence>
    <xs:element name="description" type="xs:string" minOccurs="0"/>
    <xs:element name="frequencyOfService" type="xs:integer" minOccurs="0"/>
    <xs:element name="numberOfCustomers" type="xs:integer" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="Description" type="urt:DescriptionType"/>
<xs:complexType name="DescriptionPropertyType">
  <xs:sequence>
    <xs:element ref="urt:Description"/>
  </xs:sequence>
</xs:complexType>

```

4.2.4 AgencyType, Agency

A *urt::Agency* is a class to describe a transit agency with service represented in this dataset.

Type	Definition
Agency	An organization which provides public transit service.
Property	Definition
name	Name of the transit agency.
url	URL of the transit agency.
timezone	Timezone where the transit agency is located. If multiple agencies are specified in the dataset, each must have the same timezone.
language	Primary language used by this transit agency.
phone	A voice telephone number for the specified agency. This field is a string value that presents the telephone number as typical for the agency's service area. It can and should contain.
fareUrl	URL of a web page that allows a rider to purchase tickets or other fare instruments for that agency online.
email	Email address actively monitored by the agency's customer service department. This email address should be a direct contact point where transit riders can reach a customer service representative at the agency.
officialName	Official name of the agency, extended in GTFS-JP.
zipNumber	Zip number for the agency head office, extended in GTFS-JP.
address	Address of the agency, extended in GTFS-JP.

urt::presidentPosition	Position of the agency president, extended in GTFS-JP.
urt::presidentName	Name of the agency president, extended in GTFS-JP.

```

<xs:complexType name="AgencyType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="name" type="xs:string"/>
        <xs:element name="url" type="xs:anyURI"/>
        <xs:element name="timeZone" type="gml:CodeType"/>
        <xs:element name="language" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="phone" type="xs:string" minOccurs="0"/>
        <xs:element name="fareUrl" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="email" type="xs:string" minOccurs="0"/>
        <xs:element name="officialName" type="xs:string" minOccurs="0"/>
        <xs:element name="zipNumber" type="xs:string" minOccurs="0"/>
        <xs:element name="address" type="xs:string" minOccurs="0"/>
        <xs:element name="presidentPosition" type="xs:string" minOccurs="0"/>
        <xs:element name="presidentName" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Agency" type="urt:AgencyType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="AgencyPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Agency"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.5 StopType, Stop

A *urt::Stop* is a place where vehicles pick up or drop off riders. Instances of this class also include stations and station entrances.

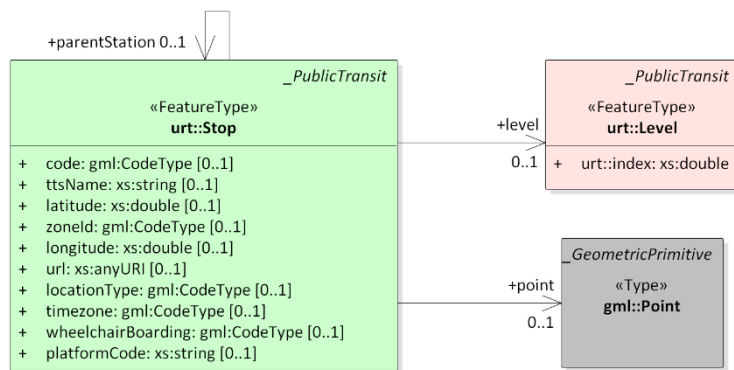


Figure 4-7 UML diagram of *urt::Stop* and *urt::Level*

Type	Definition
urt::Stop	A stop, station, or station entrance where vehicles pick up or drop off riders. The attribute <i>name</i> and <i>description</i> in <i>Stop.txt</i> are mapped to <i>gml::name</i> and <i>gml::description</i> .
Property	Definition

urt::code	Short text or a number that identifies the location for riders. These codes are often used in phone-based transit information systems or printed on signage to make it easier for riders to get information for a particular location.
urt::ttsName	Readable version of the name.
urt::latitude	Latitude of the location.
urt::longitude	Longitude of the location.
urt::zoneId	Identifies the fare zone for a stop.
urt::url	URL of a web page about the location.
urt::locationType	Type of the location.
urt::timezone	Timezone of the location.
urt::wheelchairBoarding	Indicates whether wheelchair boardings are possible from the location.
urt::platformCode	Platform identifier for a platform stop (a stop belonging to a station).
urt::point	Point location of this stop.
urt::parentStation	Defines hierarchy between the different locations of stops.
urt::level	Level of the location.

```

<xs:complexType name="StopType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="code" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="ttsName" type="xs:string" minOccurs="0"/>
        <xs:element name="zoneId" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="url" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="locationType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="timezone" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="wheelchairBoarding" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="platformCode" type="xs:string" minOccurs="0"/>
        <xs:element name="point" type="gml:PointPropertyType" minOccurs="0"/>
        <xs:element name="parentStation" type="urt:StopPropertyType" minOccurs="0"/>
        <xs:element name="level" type="urt:LevelPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Stop" type="urt:StopType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="StopPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Stop"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.6 LevelType, Level

A *urt::Level* is a level within a station. It is mostly useful when used in conjunction with *urt::Pathway*, and is required for elevator to ask the user to take the elevator to the “Mezzanine” or the “Platform” level.

Type	Definition
urt::Level	Description of each level of a station The attribute <i>name</i> in <i>Level.txt</i> is mapped to <i>gml::name</i> .
Property	Definition
urt::index	Numeric index of the level that indicates relative position of this level in relation to other levels (levels with higher indices are assumed to be located above levels with lower indices).

```

<xs:complexType name="LevelType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="index" type="xs:double"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Level" type="urt:LevelType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="LevelPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Level"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.7 TripType, Trip

A trip is a sequence of two or more stops that occur during a specific time period. Figure 4-8 shows the structure of *urt::Trip* and other related classes which necessary for *urt::Trip*.

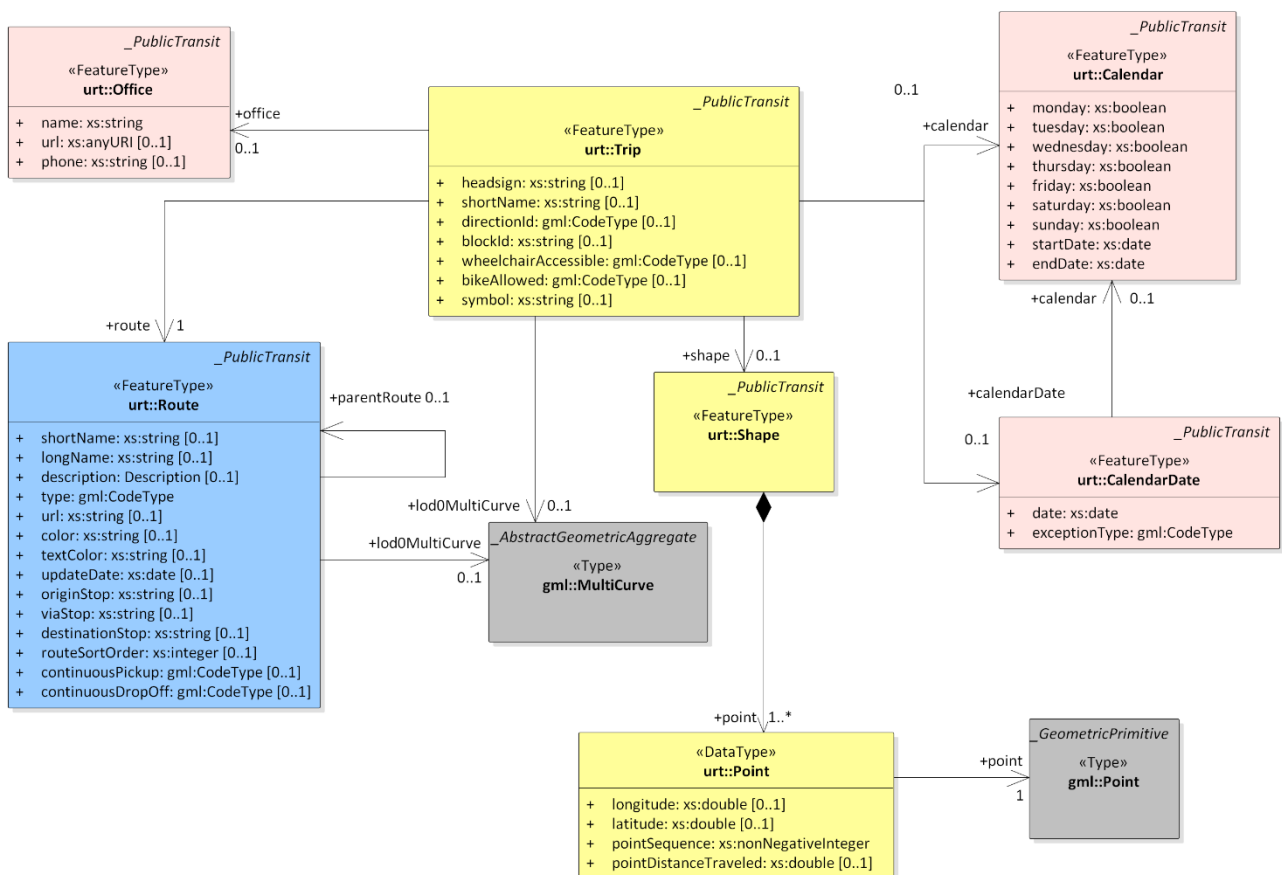


Figure 4-8 UML diagram of *urt::Trip* and related classes

Type	Definition
urt::Trip	A trips for each route. The attribute <i>desctiption</i> in <i>Trip.txt</i> is mapped to <i>gml::description</i> .

Property	Definition
urt::headsign	Short text or a number that identifies the location for riders. These codes are often used in phone-based transit information systems or printed on signage to make it easier for riders to get information for a particular location.
urt::shortName	Name of the location. Use a name that people will understand in the local and tourist vernacular.
urt::directionId	Readable version of the name.
urt::blockId	Description of the location that provides useful, quality information.
urt::wheelchairAccessible	Identifies the fare zone for a stop.
urt::bikeAllowed	URL of a web page about the location.
urt::symbol	Symbol set on timetable, extended in GTFS-JP.
urt::route	Identifies a route.
urt::calendar	Identifies a calendar when service is available for one or more routes. It matches with <i>service_id</i> in <i>Trip.txt</i> when the trip refers <i>service_id</i> in <i>Calendar.txt</i> . {count(calendar)+count(calendarDate)=1}
urt::calendarDate	Identifies a calendar date when service is available for one or more routes. It matches with <i>service_id</i> in <i>Trip.txt</i> when the trip refers <i>service_id</i> in <i>CalendarDate.txt</i> . {count(calendar)+count(calendarDate)=1}
urt::office	Office for this trip, extended in GTFS-JP.
urt::shape	Sequence of points to describe this trip.
urt::lod0MultiCurve	Linear curve of this trip, extended in this module. This curve is consist of a sequence of points in a <i>urt::Shape</i> which is referred from this trip.

```

<xs:complexType name="TripType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="headsign" type="xs:string" minOccurs="0"/>
        <xs:element name="shortName" type="xs:string" minOccurs="0"/>
        <xs:element name="directionId" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="blockId" type="xs:string" minOccurs="0"/>
        <xs:element name="wheelchairAccessible" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="bikeAllowed" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="symbol" type="xs:string" minOccurs="0"/>
        <xs:element name="route" type="urt:RoutePropertyType"/>
        <xs:element name="calendar" type="urt:CalendarPropertyType" minOccurs="0"/>
        <xs:element name="calendarDate" type="urt:CalendarDatePropertyType" minOccurs="0"/>
        <xs:element name="office" type="urt:OfficePropertyType" minOccurs="0"/>
        <xs:element name="shape" type="urt:ShapePropertyType" minOccurs="0"/>
        <xs:element name="lod0MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Trip" type="urt:TripType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="TripPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Trip"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.8 ShapeType, Shape

Type	Definition
urt::Shape	A rule for mapping vehicle travel path, sometimes referred to as a route alignment.
Property	Definition
urt::point	A sequence of points.

```

<xs:element name="Shape" type="urt:ShapeType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="ShapeType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="point" type="urt:PointPropertyType" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ShapePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Shape"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

PointType, Point

Type	Definition
urt::Point	A point which is a part of a shape.
Property	Definition
urt::latitude	Latitude of a shape point.
urt::longitude	Longitude of a shape point.
urt::point	Location of this point.
urt::pointSequence	Sequence in which the shape points connect to form the shape.
urt::pointDistanceTraveled	Actual distance traveled along the shape from the first shape point to the point specified in this record.

```

<xs:complexType name="PointType">
  <xs:sequence>
    <xs:element name="latitude" type="xs:double"/>
    <xs:element name="longitude" type="xs:double"/>
    <xs:element name="point" type="gml:PointPropertyType"/>
    <xs:element name="pointSequence" type="xs:nonNegativeInteger"/>
    <xs:element name="pointDistanceTraveled" type="xs:double" minOccurs="0"/>
  </xs:sequence>
</xs:complexType>
<xs:element name="Point" type="urt:PointType"/>
<xs:complexType name="PointPropertyType">
  <xs:sequence>
    <xs:element ref="urt:Point"/>
  </xs:sequence>
</xs:complexType>

```

4.2.9 CalendarType, Calendar

Type	Definition
------	------------

urt::Calendar	A service dates specified using a weekly schedule with start and end dates.
Property	Definition
urt::monday	Indicates whether the service operates on all Mondays in the date range specified by the <i>urt::startDate</i> and <i>urt::endDate</i> . Note that exceptions for particular dates may be listed in <i>urt::CalendarDate</i> .
urt::tuesday	Functions in the same way as monday except applies to Tuesdays.
urt::wednesday	Functions in the same way as monday except applies to Wednesdays.
urt::thursday	Functions in the same way as monday except applies to Thursdays.
urt::friday	Functions in the same way as monday except applies to Fridays.
urt::saturday	Functions in the same way as monday except applies to Saturdays.
urt::sunday	Functions in the same way as monday except applies to Sundays.
urt::startDate	Start service day for the service interval.
urt::endDate	End service day for the service interval. This service day is included in the interval.

```

<xs:complexType name="CalendarType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="monday" type="xs:boolean"/>
        <xs:element name="tuesday" type="xs:boolean"/>
        <xs:element name="wednesday" type="xs:boolean"/>
        <xs:element name="thursday" type="xs:boolean"/>
        <xs:element name="friday" type="xs:boolean"/>
        <xs:element name="saturday" type="xs:boolean"/>
        <xs:element name="sunday" type="xs:boolean"/>
        <xs:element name="startDate" type="xs:date"/>
        <xs:element name="endDate" type="xs:date"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Calendar" type="urt:CalendarType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="CalendarPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Calendar"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.10 CalendarDateType, CalendarDate

Type	Definition
urt::CalendarDate	CalendarDate defines exceptions to the default service patterns defined in calendar.
Property	Definition
urt::date	Date when service exception occurs.
urt::exceptionType	Indicates whether service is available on the date specified in the date field.
urt::calendar	Identifies a calendar when a service exception occurs for one or more routes.

```

<xs:complexType name="CalendarDateType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="date" type="xs:date"/>
        <xs:element name="exceptionType" type="gml:CodeType"/>
        <xs:element name="calendar" type="urt:CalendarPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="CalendarDate" type="urt:CalendarDateType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="CalendarDatePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:CalendarDate"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.11 OfficeType, Office

Type	Definition
urt::Office	Service office.
Property	Definition
urt::name	Name of an office.
urt::url	URL of an office.
urt::phone	Phone number of an office.

```

<xs:complexType name="OfficeType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="name" type="xs:string"/>
        <xs:element name="url" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="phone" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Office" type="urt:OfficeType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="OfficePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Office"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.12 FareAttributeType, FareAttribute

Figure 4-9 shows the structure of fare information for a transit agency's routes.

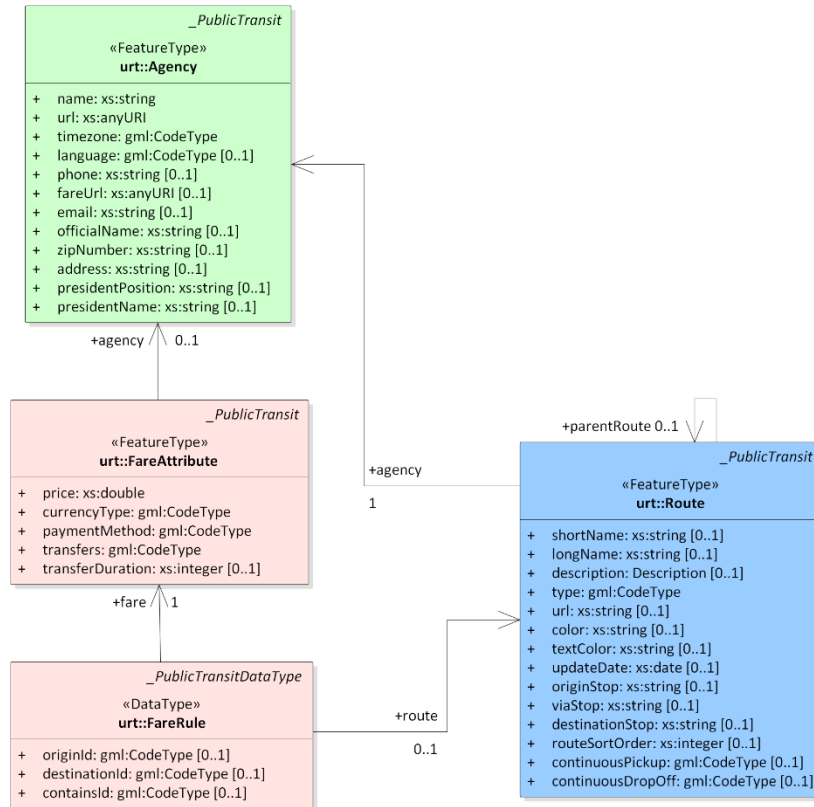


Figure 4-9 UML diagram of *urt::FareAttribute* and *urt::FareRule*

Type	Definition
urt::FareAttribute	Detailed information of the fare.
Property	Definition
urt::price	Fare price.
urt::currencyType	Currency used to pay the fare.
urt::paymentMethod	Indicates when the fare must be paid.
urt::transfers	Indicates the number of transfers permitted on this fare.
urt::transferDuration	Length of time in seconds before a transfer expires. When transfers=0 this field can be used to indicate how long a ticket is valid for or it can be left empty.
urt::agency	Identifies the relevant agency for a fare.

```

<xs:complexType name="FareAttributeType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="price" type="xs:double"/>
        <xs:element name="currencyType" type="gml:CodeType"/>
        <xs:element name="paymentMethod" type="gml:CodeType"/>
        <xs:element name="transfers" type="gml:CodeType"/>
        <xs:element name="transferDuration" type="xs:integer" minOccurs="0"/>
        <xs:element name="agency" type="urt:AgencyPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="FareAttribute" type="urt:FareAttributeType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="FareAttributePropertyType">
  <xs:sequence minOccurs="0">

```

```

<xs:element ref="urt:FareAttribute"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.13 FareRuleType, FareRule

Type	Definition
urt::FareRule	Rules to apply fares for itineraries
Property	Definition
urt::originId	Identifies an origin zone.
urt::destinationId	Identifies a destination zone.
urt::containsId	Identifies the zones that a rider will enter while using a given fare class.
urt::fare	Identifies a fare class.
urt::route	Identifies a route associated with the fare class.

```

<xs:complexType name="FareRuleType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitDataTypeType">
      <xs:sequence>
        <xs:element name="originId" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="destinationId" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="containsId" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="fare" type="urt:FareAttributePropertyType"/>
        <xs:element name="route" type="urt:RoutePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="FareRule" type="urt:FareRuleType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="FareRulePropertyType">
  <xs:sequence>
    <xs:element ref="urt:FareRule"/>
  </xs:sequence>
</xs:complexType>

```

4.2.14 StopTimeType, StopTime

A *urt::StopTime* is a class to describe times that a vehicle arrives at and departs from stops for each trip.

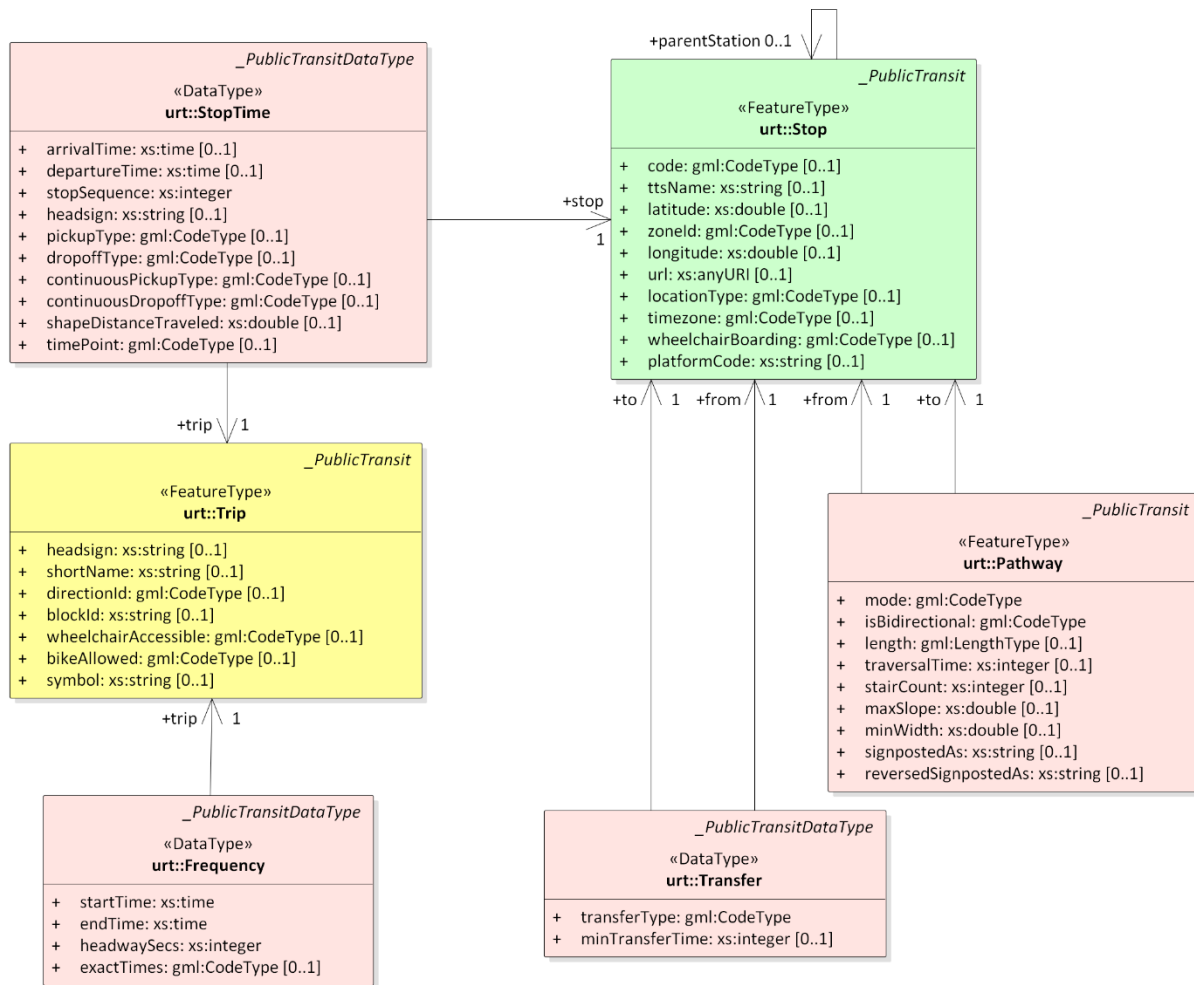


Figure 4-10 UML diagram of urt::StopTime, urt::Frequency, urt::Transfer and urt::Pathway

Type	Definition
urt::StopTime	Arrival and departure time at the stop.
Property	Definition
urt::arrivalTime	Arrival time at a specific stop for a specific trip on a route.
urt::deparureTime	Departure time from a specific stop for a specific trip on a route.
urt::stopSequence	Order of stops for a particular trip. The values must increase along the trip but do not need to be consecutive.
urt::headsign	Text that appears on signage identifying the trip's destination to riders.
urt::pickupType	Indicates pickup method.
urt::dropoffType	Indicates drop off method.
urt::continuousPickupType	Indicates that the rider can board the transit vehicle at any point along the vehicle's travel path as described by shapes.txt, from this urt::StopTime to the next urt::StopTime in the trip's stopSequence.
urt::continuousDropoffType	Indicates that the rider can alight from the transit vehicle at any point along the vehicle's travel path as described by urt::Shape, from this urt::StopTime to the next urt::StopTime in the trip's urt::stopSequence.
urt::shapeDistTraveled	Actual distance traveled along the associated shape, from the first stop to the stop specified in this record.
urt::timePoint	Indicates if arrival and departure times for a stop are strictly adhered to by the vehicle or if they are instead approximate and/or interpolated times.
urt::trip	Identifies a trip.
urt::stop	Identifies the serviced stop.

```

<xs:complexType name="StopTimeType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitDataTypeType">
      <xs:sequence>
        <xs:element name="arrivalTime" type="xs:time" minOccurs="0"/>
        <xs:element name="departureTime" type="xs:time" minOccurs="0"/>
        <xs:element name="stopSequence" type="xs:integer"/>
        <xs:element name="headsign" type="xs:string" minOccurs="0"/>
        <xs:element name="pickupType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="dropoffType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="continuousPickupType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="continuousDropoffType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="shapeDistanceTraveled" type="xs:double" minOccurs="0"/>
        <xs:element name="timePoint" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="trip" type="urt:TripPropertyType"/>
        <xs:element name="stop" type="urt:StopPropertyType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="StopTime" type="urt:StopTimeType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="StopTimePropertyType">
  <xs:sequence>
    <xs:element ref="urt:StopTime"/>
  </xs:sequence>
</xs:complexType>

```

4.2.15 FrequencyType, Frequency

A *urt::Frequency* is used when there is no fixed timetable and the train operates at regular intervals.

Type	Definition
urt::Frequency	Headway (time between trips) for headway-based service or a compressed representation of fixed-schedule service.
Property	Definition
urt::startTime	Time at which the first vehicle departs from the first stop of the trip with the specified headway.
urt::endTime	Time at which service changes to a different headway (or ceases) at the first stop in the trip.
urt::headwaySecs	Time, in seconds, between departures from the same stop (headway) for the trip, during the time interval specified by <i>urt::startTime</i> and <i>urt::endTime</i> .
urt::exactTimes	Indicates the type of service for a trip. See the file description for more information.
urt::trip	Identifies a trip to which the specified headway of service applies.

```

<xs:complexType name="FrequencyType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitDataTypeType">
      <xs:sequence>
        <xs:element name="startTime" type="xs:time"/>
        <xs:element name="endTime" type="xs:time"/>
        <xs:element name="headwaySecs" type="xs:integer"/>
        <xs:element name="exactTimes" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="trip" type="urt:TripPropertyType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Frequency" type="urt:FrequencyType" substitutionGroup="urt:_PublicTransitDataType"/>

```



```

<xs:complexType name="FrequencyPropertyType">
  <xs:sequence>
    <xs:element ref="urt:Frequency"/>
  </xs:sequence>
</xs:complexType>

```

4.2.16 TransferType, Transfer

A *urt::Transfer* defines Rules for making connections at transfer points between routes.

Type	Definition
urt::Transfer	Rules for making connections at transfer points between routes.
Property	Definition
urt::transferType	Indicates the type of connection for the specified (<i>urt::from</i> and <i>urt::to</i>) pair.
urt::minTransferTime	Amount of time, in seconds, that must be available to permit a transfer between routes at the specified stops.
urt::from	Identifies a stop or station where a connection between routes begins.
urt::to	Identifies a stop or station where a connection between routes ends.

```

<xs:complexType name="TransferType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitDataType">
      <xs:sequence>
        <xs:element name="transferType" type="gml:CodeType"/>
        <xs:element name="minTransferTime" type="xs:integer" minOccurs="0"/>
        <xs:element name="from" type="urt:StopPropertyType"/>
        <xs:element name="to" type="urt:StopPropertyType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Transfer" type="urt:TransferType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="TransferPropertyType">
  <xs:sequence>
    <xs:element ref="urt:Transfer"/>
  </xs:sequence>
</xs:complexType>

```

4.2.17 PathwayType, Pathway

A *urt::Pathway* describes a graph representation to describe subway or train, with nodes (the locations) and edges (the pathways).

Type	Definition
urt::Pathway	A graph representation to describe subway or train, with nodes (the locations) and edges (the pathways)
Property	Definition
urt::mode	Type of pathway between the specified (<i>urt::from</i> and <i>urt::to</i>) pair.
urt::isBidirectional	Indicates in which direction the pathway can be used.
urt::length	Horizontal length in meters of the pathway from the origin location to the destination location.
urt::traversalTime	Average time in seconds needed to walk through the pathway from the origin location to the destination location.
urt::stairCount	Number of stairs of the pathway.
urt::maxSlope	Maximum slope ratio of the pathway.
urt::mixWidth	Minimum width of the pathway in meters.

urt::signpostedAs	String of text from physical signage visible to transit riders.
urt::reversedSignpostedAs	Same than the signpostedAs field, but when the pathways is used backward.
urt::from	Stop at which the pathway begins.
urt::to	Stop at which the pathway ends.

```

<xs:complexType name="PathwayType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="mode" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="isBidirectional" type="gml:CodeType"/>
        <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="traversalTime" type="xs:integer" minOccurs="0"/>
        <xs:element name="stairCount" type="xs:integer" minOccurs="0"/>
        <xs:element name="maxSlope" type="xs:double" minOccurs="0"/>
        <xs:element name="minWidth" type="xs:double" minOccurs="0"/>
        <xs:element name="signpostedAs" type="xs:string" minOccurs="0"/>
        <xs:element name="reversedSignpostedAs" type="xs:string" minOccurs="0"/>
        <xs:element name="from" type="urt:StopPropertyType"/>
        <xs:element name="to" type="urt:StopPropertyType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Pathway" type="urt:PathwayType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="PathwayPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Pathway"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.18 TranslationType, Translation

In regions that have multiple official languages, transit agencies/operators typically have language-specific names and web pages. In order to best serve riders in those regions, it is useful for the dataset to include these language-dependent values. Furthermore, some countries use several styles of letters for their language and languages written ideographically is difficult to read for riders who are not familiar to that language. Figure 4-11 shows the structure of translation information which is used for such purpose.

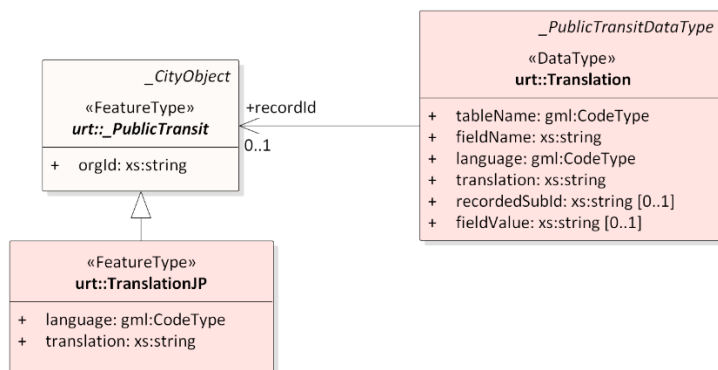


Figure 4-11 UML diagram of *urt::Translation* and *urt::TranslationJP*

Type	Definition
urt::Translation	Language-specific names.
Property	Definition
urt::tableName	Defines the table that contains the field to be translated.
urt::fieldName	Name of the field to be translated.
urt::language	Language of translation.
urt::translation	Translated value.
urt::recordId	Defines the record that corresponds to the field to be translated.
urt::recordSubId	Helps the record that contains the field to be translated when the table doesn't have a unique ID.
urt::fieldValue	Instead of defining which record should be translated by using <i>urt::recordId</i> and <i>urt::recordSubId</i> , this field can be used to define the value which should be translated.

```

<xs:complexType name="TranslationType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitDataTypeType">
      <xs:sequence>
        <xs:element name="tableName" type="gml:CodeType"/>
        <xs:element name="fieldName" type="xs:string"/>
        <xs:element name="language" type="gml:CodeType"/>
        <xs:element name="translation" type="xs:string"/>
        <xs:element name="recordId" type="urt:PublicTransitPropertyType" minOccurs="0"/>
        <xs:element name="recordSubId" type="xs:string" minOccurs="0"/>
        <xs:element name="fieldValue" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Translation" type="urt:TranslationType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="TranslationPropertyType">
  <xs:sequence>
    <xs:element ref="urt:Translation"/>
  </xs:sequence>
</xs:complexType>

```

4.2.19 TranslationJPType, TranslationJP

The class *urt::TranslationJP* is a class which is from not-standardized GTFS considering the situation in Japan, where uses combination of three styles of letter: kanji, hiragana, katakana.

Type	Definition
urt::TranslationJP	The Japanese pronunciation and Roman character notation of a name. The name to be translated is described in <i>urt::orgId</i> .
Property	Definition
urt::language	Language of translation.
urt::translation	Translated value.

```

<xs:complexType name="TranslationJPType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="language" type="gml:CodeType"/>
        <xs:element name="translation" type="xs:string"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>

```

```

</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="TranslationJP" type="urt:TranslationJPType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="TranslationJPPROPERTYType">
<xs:sequence minOccurs="0">
<xs:element ref="urt:TranslationJP"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.20 AttributionType, Attribution

A *urt::Attribution* defines the attributions applied to the dataset.

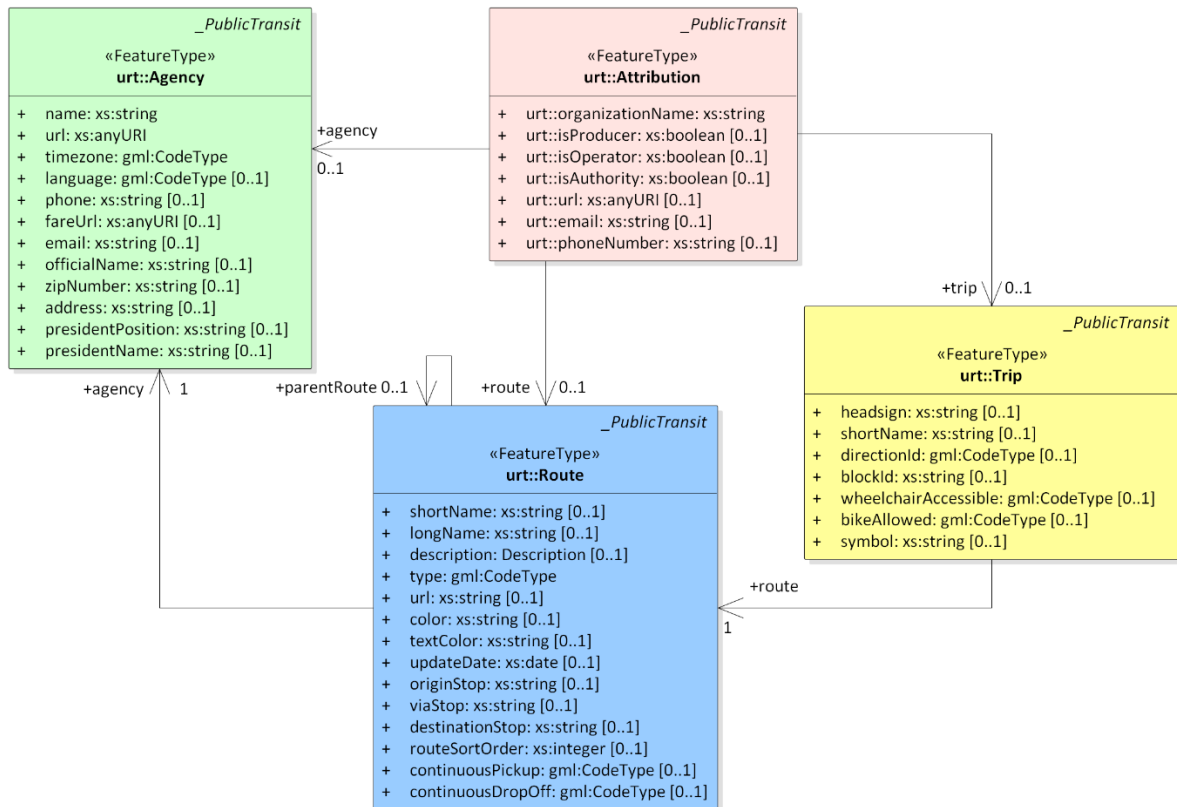


Figure 4-12 UML diagram of *urt::Attribution* and related classes

Type	Definition
urt::Attribution	The attributions applied to the dataset.
Property	Definition
urt::organizationName	Name of the organization that the dataset is attributed to.
urt::isProducer	The role of the organization is producer. Valid options are: <i>false</i> : Organization doesn't have this role, <i>true</i> : Organization does have this role.
urt::isOperator	The role of the organization is operator. Valid options are: <i>false</i> : Organization doesn't have this role, <i>true</i> : Organization does have this role.
urt::isAuthority	The role of the organization is authority. Valid options are: <i>false</i> : Organization doesn't have this role, <i>true</i> : Organization does have this role.
urt::url	URL of the organization.
urt::email	Email of the organization.

urt::phone	Phone number of the organization.
urt::agency	Agency to which the attribution applies.
urt::route	Route to which the attribution applies.
urt::trip	Trip to which the attribution applies.

```

<xs:complexType name="AttributionType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="organizationName" type="xs:string"/>
        <xs:element name="isProducer" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isOperator" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isAuthority" type="xs:boolean" minOccurs="0"/>
        <xs:element name="url" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="email" type="xs:string" minOccurs="0"/>
        <xs:element name="phone" type="xs:string" minOccurs="0"/>
        <xs:element name="agency" type="urt:AgencyPropertyType" minOccurs="0"/>
        <xs:element name="route" type="urt:RoutePropertyType" minOccurs="0"/>
        <xs:element name="trip" type="urt:TripPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Attribution" type="urt:AttributionType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="AttributionPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Attribution"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>

```

4.2.21 FeedInfoType, FeedInfo

A `urt::FeedInfo` is a class for dataset metadata, including publisher, version, and expiration information as shown in **Figure 4-13**.

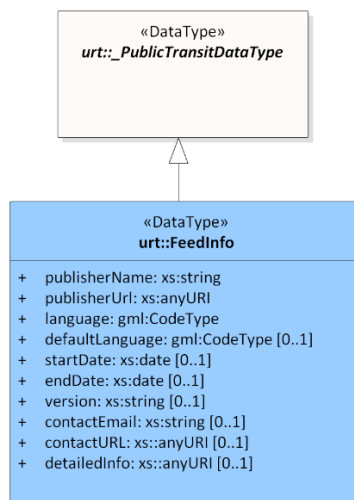


Figure 4-13 UML diagram of *urt::FeedInfo*

Type	Definition
urt::FeedInfo	Information about the dataset itself, rather than the services the dataset describes.
Property	Definition
urt::publisherName	Full name of the organization that publishes the dataset.
urt::publisherUrl	URL of the dataset publishing organization's website.
urt::language	Default language for the text in this dataset.
urt::defaultLanguage	Defines the language used when the data consumer doesn't know the language of the rider.
urt::startDate	The dataset provides complete and reliable schedule information for service in the period from the beginning to the end.
urt::endDate	The dataset provides complete and reliable schedule information for service in the period from the beginning to the end.
urt::version	String that indicates the current version of their GTFS dataset.
urt::contactEmail	Email address for communication regarding the GTFS dataset and data publishing practices.
urt::contactURL	URL for contact information, a web-form, support desk, or other tools for communication regarding the GTFS dataset and data publishing practices.
urt::detailedInfo	URL for GTFS dataset files.

```

<xs:complexType name="FeedInfoType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitDataType">
      <xs:sequence>
        <xs:element name="publisherName" type="xs:string"/>
        <xs:element name="publisherUrl" type="xs:anyURI"/>
        <xs:element name="language" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="defaultLanguage" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="startDate" type="xs:date" minOccurs="0"/>
        <xs:element name="endDate" type="xs:date" minOccurs="0"/>
        <xs:element name="version" type="xs:string" minOccurs="0"/>
        <xs:element name="contactEmail" type="xs:string" minOccurs="0"/>
        <xs:element name="contactURL" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="detailedInfo" type="xs:anyURI" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="FeedInfo" type="urt:FeedInfoType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="FeedInfoPropertyType">
  <xs:sequence>
    <xs:element ref="urt:FeedInfo"/>
  </xs:sequence>
</xs:complexType>

```

4.2.22 Extended properties of CityObjectGroup

A *grp::CityObjectGroup* inherits attributes from the parent class *core::_CityObject*.

The *groupMember* property of *grp::CityObjectGroup* may contain a *core::_CityObject* element inline or an XLink reference to a remote *core::_CityObject* element, therefore extended city objects defined in this module may also be contained in or referred from a *grp::CityObjectGroup*. XLink reference prevents data duplication and enables multiple use of the city objects. The *urt::CityObjectGroup* extended in this module shall contain only subclasses of *urt::_PublicTransit* and *urt::_PublicTransitDataType*. The attribute

grp::usage which is inherited from *grp::CityObjectGroup* can represent that this object group is for the use of public transit.

One association role, *urt::dataType* is added as a member of the substitution group *grp::_GenericApplicationPropertyOfCityObjectGroup* to allow datasets to contain datatype instances directly as a part of dataset.

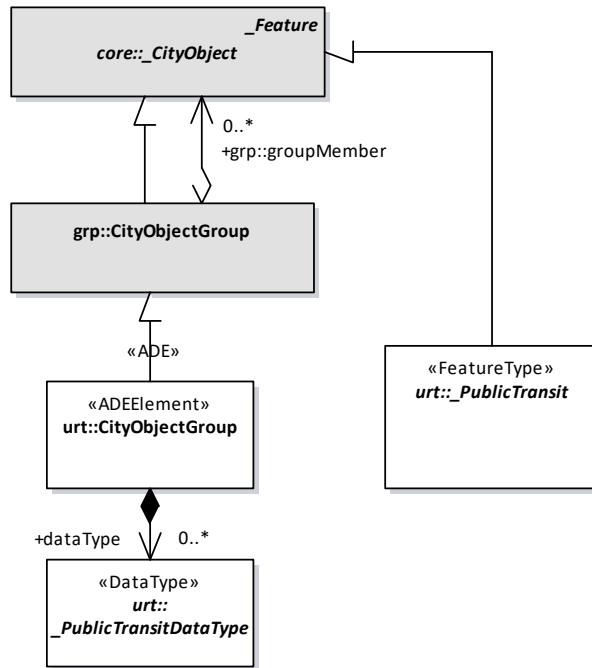


Figure 4-14 UML diagram of *urt::CityObjectGroup*

Extended properties of CityObjectGroup

Property	Definition
urt::dataType	Association to contain DataType instances directly under the CityObjectGroup.

```

<xs:element name="dataType" type="urt:PublicTransitDataTypePropertyType"
substitutionGroup="grp::_GenericApplicationPropertyOfCityObjectGroup"/>
  
```

Annex A (normative)

XMLSchema Definition

A.1 XMLSchema

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:urt="https://www.geospatial.jp/iur/urt/3.1" xmlns:core="http://www.opengis.net/citygml/2.0"
xmlns:grp="http://www.opengis.net/citygml/cityobjectgroup/2.0" xmlns:xs="http://www.w3.org/2001/XMLSchema"
xmlns:gml="http://www.opengis.net/gml" targetNamespace="https://www.geospatial.jp/iur/urt/3.1"
elementFormDefault="qualified" attributeFormDefault="unqualified" version="3.1.0">
  <xs:annotation>
    <xs:documentation>XML Schema for Public Transit module</xs:documentation>
  </xs:annotation>
  <xs:import namespace="http://www.opengis.net/gml"
schemaLocation="http://schemas.opengis.net/gml/3.1.1/base/gml.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/2.0"
schemaLocation="http://schemas.opengis.net/citygml/2.0/cityGMLBase.xsd"/>
  <xs:import namespace="http://www.opengis.net/citygml/cityobjectgroup/2.0"
schemaLocation="http://schemas.opengis.net/citygml/cityobjectgroup/2.0/cityObjectGroup.xsd"/>
  <!-- ===== -->
  <!-- ===== CityGML PublicTransit module ===== -->
  <!-- ===== -->
  <xs:complexType name="PublicTransitType" abstract="true">
    <xs:complexContent>
      <xs:extension base="core:AbstractCityObjectType">
        <xs:sequence>
          <xs:element name="orgId" type="xs:string">
            <xs:annotation>
              <xs:documentation>id field of GTFS files</xs:documentation>
            </xs:annotation>
          </xs:element>
          <xs:element name="target" type="urt:TargetPropertyType" minOccurs="0"/>
        </xs:sequence>
      </xs:extension>
    </xs:complexContent>
  </xs:complexType>
  <xs:element name="_PublicTransit" type="urt:PublicTransitType" abstract="true"
substitutionGroup="core:_CityObject"/>
  <xs:complexType name="PublicTransitPropertyType">
    <xs:sequence minOccurs="0">
      <xs:element ref="urt:_PublicTransit"/>
    </xs:sequence>
    <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
  </xs:complexType>
  <!-- ===== -->
  <xs:complexType name="TargetPropertyType">
    <xs:sequence minOccurs="0">
      <xs:element ref="core:_CityObject"/>
    </xs:sequence>
    <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
  </xs:complexType>
  <!-- ===== -->
  <xs:complexType name="RouteType">
    <xs:complexContent>
      <xs:extension base="urt:PublicTransitType">
```



```

<xs:sequence>
<xs:element name="shortName" type="xs:string" minOccurs="0"/>
<xs:element name="longName" type="xs:string" minOccurs="0"/>
<xs:element name="description" type="urt:DescriptionPropertyType" minOccurs="0"/>
<xs:element name="type" type="gml:CodeType"/>
<xs:element name="url" type="xs:string" minOccurs="0"/>
<xs:element name="color" type="xs:string" minOccurs="0"/>
<xs:element name="textColor" type="xs:string" minOccurs="0"/>
<xs:element name="updateDate" type="xs:date" minOccurs="0">
  <xs:annotation>
    <xs:documentation>extended field in GTFS-JP</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="originStop" type="xs:string" minOccurs="0">
  <xs:annotation>
    <xs:documentation>extended field in GTFS-JP</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="viaStop" type="xs:string" minOccurs="0">
  <xs:annotation>
    <xs:documentation>extended field in GTFS-JP</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="destinationStop" type="xs:string" minOccurs="0">
  <xs:annotation>
    <xs:documentation>extended field in GTFS-JP</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="routeSortOrder" type="xs:integer" minOccurs="0"/>
<xs:element name="continuousPickup" type="gml:CodeType" minOccurs="0"/>
<xs:element name="continuousDropOff" type="gml:CodeType" minOccurs="0"/>
<xs:element name="agency" type="urt:AgencyPropertyType"/>
<xs:element name="parentRoute" type="urt:RoutePropertyType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>extended field in GTFS-JP</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="lod0MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>geometric property added in this module</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="Route" type="urt:RouteType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="RoutePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Route"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="DescriptionType">
  <xs:sequence>
    <xs:element name="description" type="xs:string" minOccurs="0">
      <xs:annotation>
        <xs:documentation>route_desc</xs:documentation>
      </xs:annotation>
    </xs:element>
  </xs:sequence>
</xs:complexType>

```

```

    </xs:annotation>
  </xs:element>
  <xs:element name="frequencyOfService" type="xs:integer" minOccurs="0">
    <xs:annotation>
      <xs:documentation>extended information defined in this module</xs:documentation>
    </xs:annotation>
  </xs:element>
  <xs:element name="numberOfCustomers" type="xs:integer" minOccurs="0">
    <xs:annotation>
      <xs:documentation>extended information defined in this module</xs:documentation>
    </xs:annotation>
  </xs:element>
</xs:sequence>
</xs:complexType>
<xs:element name="Description" type="urt:DescriptionType"/>
<xs:complexType name="DescriptionPropertyType">
  <xs:sequence>
    <xs:element ref="urt:Description"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="AgencyType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="name" type="xs:string"/>
        <xs:element name="url" type="xs:anyURI"/>
        <xs:element name="timeZone" type="gml:CodeType"/>
        <xs:element name="language" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="phone" type="xs:string" minOccurs="0"/>
        <xs:element name="fareUrl" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="email" type="xs:string" minOccurs="0"/>
        <xs:element name="officialName" type="xs:string" minOccurs="0">
          <xs:annotation>
            <xs:documentation>extended field in GTFS-JP</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="zipNumber" type="xs:string" minOccurs="0">
          <xs:annotation>
            <xs:documentation>extended field in GTFS-JP</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="address" type="xs:string" minOccurs="0">
          <xs:annotation>
            <xs:documentation>extended field in GTFS-JP</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="presidentPosition" type="xs:string" minOccurs="0">
          <xs:annotation>
            <xs:documentation>extended field in GTFS-JP</xs:documentation>
          </xs:annotation>
        </xs:element>
        <xs:element name="presidentName" type="xs:string" minOccurs="0">
          <xs:annotation>
            <xs:documentation>extended field in GTFS-JP</xs:documentation>
          </xs:annotation>
        </xs:element>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>

```

```

</xs:complexType>
<xs:element name="Agency" type="urt:AgencyType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="AgencyPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Agency"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="StopType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="code" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="ttsName" type="xs:string" minOccurs="0"/>
        <xs:element name="latitude" type="xs:double" minOccurs="0"/>
        <xs:element name="longitude" type="xs:double" minOccurs="0"/>
        <xs:element name="zoneId" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="url" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="locationType" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="timeZone" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="wheelchairBoarding" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="platformCode" type="xs:string" minOccurs="0"/>
        <xs:element name="point" type="gml:PointPropertyType"/>
        <xs:element name="parentStation" type="urt:StopPropertyType" minOccurs="0"/>
        <xs:element name="level" type="urt:LevelPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Stop" type="urt:StopType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="StopPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Stop"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="LevelType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="index" type="xs:double"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Level" type="urt:LevelType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="LevelPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Level"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="TripType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>

```

```

<xs:element name="headsign" type="xs:string" minOccurs="0"/>
<xs:element name="shortName" type="xs:string" minOccurs="0"/>
<xs:element name="directionId" type="gml:CodeType" minOccurs="0"/>
<xs:element name="blockId" type="xs:string" minOccurs="0"/>
<xs:element name="wheelchairAccessible" type="gml:CodeType" minOccurs="0"/>
<xs:element name="bikeAllowed" type="gml:CodeType" minOccurs="0"/>
<xs:element name="symbol" type="xs:string" minOccurs="0">
  <xs:annotation>
    <xs:documentation>extended field in GTFS-JP</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="route" type="urt:RoutePropertyType"/>
<xs:element name="calendar" type="urt:CalendarPropertyType" minOccurs="0"/>
<xs:element name="calendarDate" type="urt:CalendarDatePropertyType" minOccurs="0"/>
<xs:element name="office" type="urt:OfficePropertyType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>extended field in GTFS-JP</xs:documentation>
  </xs:annotation>
</xs:element>
<xs:element name="shape" type="urt:ShapePropertyType" minOccurs="0"/>
<xs:element name="lod0MultiCurve" type="gml:MultiCurvePropertyType" minOccurs="0">
  <xs:annotation>
    <xs:documentation>extended property defined in this module. The curve is composed of a sequence of points in
a shape.</xs:documentation>
  </xs:annotation>
</xs:element>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="Trip" type="urt:TripType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="TripPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Trip"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:element name="Shape" type="urt:ShapeType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="ShapeType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="point" type="urt:PointPropertyType" minOccurs="0" maxOccurs="unbounded"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:complexType name="ShapePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Shape"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="PointType">
  <xs:sequence>
    <xs:element name="latitude" type="xs:double"/>
    <xs:element name="longitude" type="xs:double"/>
    <xs:element name="point" type="gml:PointPropertyType"/>

```

```

<xs:element name="pointSequence" type="xs:nonNegativeInteger"/>
<xs:element name="pointDistanceTraveled" type="xs:double" minOccurs="0"/>
</xs:sequence>
</xs:complexType>
<xs:element name="Point" type="urt:PointType"/>
<xs:complexType name="PointPropertyType">
<xs:sequence>
<xs:element ref="urt:Point"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="OfficeType">
<xs:annotation>
<xs:documentation>extended file in GTFS-JP</xs:documentation>
</xs:annotation>
<xs:complexContent>
<xs:extension base="urt:PublicTransitType">
<xs:sequence>
<xs:element name="name" type="xs:string"/>
<xs:element name="url" type="xs:anyURI" minOccurs="0"/>
<xs:element name="phone" type="xs:string" minOccurs="0"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="Office" type="urt:OfficeType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="OfficePropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urt:Office"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="CalendarType">
<xs:complexContent>
<xs:extension base="urt:PublicTransitType">
<xs:sequence>
<xs:element name="monday" type="xs:boolean"/>
<xs:element name="tuesday" type="xs:boolean"/>
<xs:element name="wednesday" type="xs:boolean"/>
<xs:element name="thursday" type="xs:boolean"/>
<xs:element name="friday" type="xs:boolean"/>
<xs:element name="saturday" type="xs:boolean"/>
<xs:element name="sunday" type="xs:boolean"/>
<xs:element name="startDate" type="xs:date"/>
<xs:element name="endDate" type="xs:date"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="Calendar" type="urt:CalendarType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="CalendarPropertyType">
<xs:sequence minOccurs="0">
<xs:element ref="urt:Calendar"/>
</xs:sequence>
<xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="CalendarDateType">

```

```

<xs:complexContent>
  <xs:extension base="urt:PublicTransitType">
    <xs:sequence>
      <xs:element name="date" type="xs:date"/>
      <xs:element name="exceptionType" type="gml:CodeType"/>
      <xs:element name="calendar" type="urt:CalendarPropertyType" minOccurs="0"/>
    </xs:sequence>
  </xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="CalendarDate" type="urt:CalendarDateType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="CalendarDatePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:CalendarDate"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="FareAttributeType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="price" type="xs:double"/>
        <xs:element name="currencyType" type="gml:CodeType"/>
        <xs:element name="paymentMethod" type="gml:CodeType"/>
        <xs:element name="transfers" type="gml:CodeType"/>
        <xs:element name="transferDuration" type="xs:integer" minOccurs="0"/>
        <xs:element name="agency" type="urt:AgencyPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="FareAttribute" type="urt:FareAttributeType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="FareAttributePropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:FareAttribute"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="PathwayType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="mode" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="isBidirectional" type="gml:CodeType"/>
        <xs:element name="length" type="gml:LengthType" minOccurs="0"/>
        <xs:element name="traversalTime" type="xs:integer" minOccurs="0"/>
        <xs:element name="stairCount" type="xs:integer" minOccurs="0"/>
        <xs:element name="maxSlope" type="xs:double" minOccurs="0"/>
        <xs:element name="minWidth" type="xs:double" minOccurs="0"/>
        <xs:element name="signpostedAs" type="xs:string" minOccurs="0"/>
        <xs:element name="reversedSignpostedAs" type="xs:string" minOccurs="0"/>
        <xs:element name="from" type="urt:StopPropertyType"/>
        <xs:element name="to" type="urt:StopPropertyType"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Pathway" type="urt:PathwayType" substitutionGroup="urt:_PublicTransit"/>

```

```

<xs:complexType name="PathwayPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Pathway"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="TranslationJPType">
  <xs:annotation>
    <xs:documentation>extended file in GTFS-JP</xs:documentation>
  </xs:annotation>
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="language" type="gml:CodeType"/>
        <xs:element name="translation" type="xs:string"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="TranslationJP" type="urt:TranslationJPType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="TranslationJPPPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:TranslationJP"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="AttributionType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitType">
      <xs:sequence>
        <xs:element name="organizationName" type="xs:string"/>
        <xs:element name="isProducer" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isOperator" type="xs:boolean" minOccurs="0"/>
        <xs:element name="isAuthority" type="xs:boolean" minOccurs="0"/>
        <xs:element name="url" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="email" type="xs:string" minOccurs="0"/>
        <xs:element name="phoneNumber" type="xs:string" minOccurs="0"/>
        <xs:element name="agency" type="urt:AgencyPropertyType" minOccurs="0"/>
        <xs:element name="route" type="urt:RoutePropertyType" minOccurs="0"/>
        <xs:element name="trip" type="urt:TripPropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Attribution" type="urt:AttributionType" substitutionGroup="urt:_PublicTransit"/>
<xs:complexType name="AttributionPropertyType">
  <xs:sequence minOccurs="0">
    <xs:element ref="urt:Attribution"/>
  </xs:sequence>
  <xs:attributeGroup ref="gml:AssociationAttributeGroup"/>
</xs:complexType>
<!-- ===== -->
<!-- =====      DataType Declaration      ===== -->
<!-- ===== -->
<xs:complexType name="PublicTransitDataTypeType" abstract="true"/>
<xs:element name="_PublicTransitDataType" type="urt:PublicTransitDataTypeType" abstract="true"/>
<xs:complexType name="PublicTransitDataTypePropertyType">

```

```

<xs:sequence>
  <xs:element ref="urt:_PublicTransitDataType"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="FeedInfoType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitDataTypeType">
      <xs:sequence>
        <xs:element name="publisherName" type="xs:string"/>
        <xs:element name="publisherUrl" type="xs:anyURI"/>
        <xs:element name="language" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="defaultLanguage" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="startDate" type="xs:date" minOccurs="0"/>
        <xs:element name="endDate" type="xs:date" minOccurs="0"/>
        <xs:element name="version" type="xs:string" minOccurs="0"/>
        <xs:element name="contactEmail" type="xs:string" minOccurs="0"/>
        <xs:element name="contactURL" type="xs:anyURI" minOccurs="0"/>
        <xs:element name="detailedInfo" type="xs:anyURI" minOccurs="0"/>
        <xs:annotation>
          <xs:documentation>extended information defined in this module</xs:documentation>
        </xs:annotation>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="FeedInfo" type="urt:FeedInfoType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="FeedInfoPropertyType">
  <xs:sequence>
    <xs:element ref="urt:FeedInfo"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="TranslationType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitDataTypeType">
      <xs:sequence>
        <xs:element name="tableName" type="gml:CodeType"/>
        <xs:element name="fieldName" type="xs:string"/>
        <xs:element name="language" type="gml:CodeType"/>
        <xs:element name="translation" type="xs:string"/>
        <xs:element name="fieldValue" type="xs:string" minOccurs="0"/>
        <xs:element name="recordId" type="urt:PublicTransitPropertyType" minOccurs="0"/>
        <xs:element name="recordSubId" type="xs:string" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="Translation" type="urt:TranslationType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="TranslationPropertyType">
  <xs:sequence>
    <xs:element ref="urt:Translation"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="TransferType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitDataTypeType">
      <xs:sequence>

```



```

<xs:element name="transferType" type="gml:CodeType"/>
<xs:element name="minTransferTime" type="xs:integer" minOccurs="0"/>
<xs:element name="from" type="urt:StopPropertyType"/>
<xs:element name="to" type="urt:StopPropertyType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="Transfer" type="urt:TransferType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="TransferPropertyType">
<xs:sequence>
<xs:element ref="urt:Transfer"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="FrequencyType">
<xs:complexContent>
<xs:extension base="urt:PublicTransitDataTypeType">
<xs:sequence>
<xs:element name="startTime" type="xs:time"/>
<xs:element name="endTime" type="xs:time"/>
<xs:element name="headwaySecs" type="xs:integer"/>
<xs:element name="exactTimes" type="gml:CodeType" minOccurs="0"/>
<xs:element name="trip" type="urt:TripPropertyType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="Frequency" type="urt:FrequencyType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="FrequencyPropertyType">
<xs:sequence>
<xs:element ref="urt:Frequency"/>
</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="StopTimeType">
<xs:complexContent>
<xs:extension base="urt:PublicTransitDataTypeType">
<xs:sequence>
<xs:element name="arrivalTime" type="xs:time"/>
<xs:element name="departureTime" type="xs:time"/>
<xs:element name="stopSequence" type="xs:integer"/>
<xs:element name="headsign" type="xs:string" minOccurs="0"/>
<xs:element name="pickupType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="dropoffType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="continuousPickupType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="continuousDropoffType" type="gml:CodeType" minOccurs="0"/>
<xs:element name="shapeDistanceTraveled" type="xs:double" minOccurs="0"/>
<xs:element name="timePoint" type="gml:CodeType" minOccurs="0"/>
<xs:element name="trip" type="urt:TripPropertyType"/>
<xs:element name="stop" type="urt:StopPropertyType"/>
</xs:sequence>
</xs:extension>
</xs:complexContent>
</xs:complexType>
<xs:element name="StopTime" type="urt:StopTimeType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="StopTimePropertyType">
<xs:sequence>
<xs:element ref="urt:StopTime"/>

```

```

</xs:sequence>
</xs:complexType>
<!-- ===== -->
<xs:complexType name="FareRuleType">
  <xs:complexContent>
    <xs:extension base="urt:PublicTransitDataType">
      <xs:sequence>
        <xs:element name="originId" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="destinationId" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="containsId" type="gml:CodeType" minOccurs="0"/>
        <xs:element name="fare" type="urt:FareAttributePropertyType"/>
        <xs:element name="route" type="urt:RoutePropertyType" minOccurs="0"/>
      </xs:sequence>
    </xs:extension>
  </xs:complexContent>
</xs:complexType>
<xs:element name="FareRule" type="urt:FareRuleType" substitutionGroup="urt:_PublicTransitDataType"/>
<xs:complexType name="FareRulePropertyType">
  <xs:sequence>
    <xs:element ref="urt:FareRule"/>
  </xs:sequence>
</xs:complexType>
<!-- ===== Extended attribute for CityObjectGroup ===== -->
<xs:element name="dataType" type="urt:PublicTransitDataTypePropertyType"
substitutionGroup="grp:_GenericApplicationPropertyOfCityObjectGroup"/>
</xs:schema>

```

A.2 Sample data (informative)

```

<core:CityModel xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance" xmlns:grp="http://www.opengis.net/citygml/cityobjectgroup/2.0" xmlns:xlink="http://www.w3.org/1999/xlink" xmlns:gml="http://www.opengis.net/gml" xmlns:core="http://www.opengis.net/citygml/2.0" xmlns:urt="https://www.geospatial.jp/iur/urt/3.1" xsi:schemaLocation="https://www.geospatial.jp/iur/urt/3.1 https://www.geospatial.jp/iur/schemas/urt/3.1/publicTransit.xsd http://www.opengis.net/citygml/cityobjectgroup/2.0 http://schemas.opengis.net/citygml/cityobjectgroup/2.0/cityObjectGroup.xsd http://www.opengis.net/citygml/2.0 http://schemas.opengis.net/citygml/2.0/cityGMLBase.xsd http://www.opengis.net/gml http://schemas.opengis.net/gml/3.1.1/base/gml.xsd">
  <gml:boundedBy>
    <gml:Envelope srsName="http://www.opengis.net/def/crs/EPSSG/0/6697" srsDimension="3">
      <gml:lowerCorner>36 137 0</gml:lowerCorner>
      <gml:upperCorner>37 137.3 0</gml:upperCorner>
    </gml:Envelope>
  </gml:boundedBy>
  <core:cityObjectMember>
    <grp:CityObjectGroup>
      <grp:groupMember>
        <urt:Route gml:id="route1">
          <urt:orgId>1</urt:orgId>
          <urt:longName>中央ルート</urt:longName>
          <urt:type>3</urt:type>
          <urt:color>92D050</urt:color>
          <urt:updateDate>2017-12-01</urt:updateDate>
          <urt:agency xlink:href="agency7230001002032"/>
          <urt:parentRoute xlink:href="route1"/>
        </urt:Route>
      </grp:groupMember>
      <grp:groupMember>
        <urt:Route gml:id="route2">
          <urt:orgId>2</urt:orgId>
          <urt:longName>清水町ルート</urt:longName>

```

```

<urt:type>3</urt:type>
<urt:color>FFC000</urt:color>
<urt:updateDate>2017-12-01</urt:updateDate>
<urt:agency xlink:href="agency7230001002032"/>
<urt:parentRoute xlink:href="route2"/>
</urt:Route>
</grp:groupMember>
<grp:groupMember>
  <urt:Agency gml:id="agency7230001002032">
    <urt:orgId>7230001002032</urt:orgId>
    <urt:name>まいどはやバス</urt:name>
    <urt:url>http://mdtoyama.com/?tid=100324,Asia/Tokyo,ja</urt:url>
    <urt:timeZone>Asia/Tokyo</urt:timeZone>
    <urt:language>ja</urt:language>
    <urt:officialName>株式会社富山市民プラザ まちづくり事業部</urt:officialName>
    <urt:zipNumber>9300083</urt:zipNumber>
    <urt:address>富山県富山市総曲輪3丁目3番16号ウイズビル3階</urt:address>
  </urt:Agency>
</grp:groupMember>
<grp:groupMember>
  <urt:Calendar gml:id="calendar1">
    <urt:orgId>毎日</urt:orgId>
    <urt:monday>true</urt:monday>
    <urt:tuesday>true</urt:tuesday>
    <urt:wednesday>true</urt:wednesday>
    <urt:thursday>true</urt:thursday>
    <urt:friday>true</urt:friday>
    <urt:saturday>true</urt:saturday>
    <urt:sunday>true</urt:sunday>
    <urt:startDate>2020-01-31</urt:startDate>
    <urt:endDate>2021-03-31</urt:endDate>
  </urt:Calendar>
</grp:groupMember>
<grp:groupMember>
  <urt:CalendarDate>
    <urt:orgId>毎日</urt:orgId>
    <urt:date>2020-02-11</urt:date>
    <urt:exceptionType>1</urt:exceptionType>
    <urt:calendar xlink:href="calendar1"/>
  </urt:CalendarDate>
</grp:groupMember>
<grp:groupMember>
  <urt:Stop gml:id="stop1_1">
    <gml:name>西田地方小学校東</gml:name>
    <urt:orgId>1_1</urt:orgId>
    <urt:latitude>36.68549</urt:latitude>
    <urt:longitude>137.206998</urt:longitude>
    <urt:zonelId>1_1</urt:zonelId>
    <urt:locationType>0</urt:locationType>
    <urt:point>
      <gml:Point>
        <gml:pos>36.68549 137.206998 0</gml:pos>
      </gml:Point>
    </urt:point>
  </urt:Stop>
</grp:groupMember>
<grp:groupMember>
  <urt:Shape gml:id="shape1">
    <urt:orgId>1</urt:orgId>

```

```

<urt:point>
<urt:Point>
<urt:latitude>36.6993267946332</urt:latitude>
<urt:longitude>137.213000565343</urt:longitude>
<urt:point>
<gml:Point>
<gml:pos>36.6993267946332 137.213000565343 0</gml:pos>
</gml:Point>
</urt:point>
<urt:pointSequence>1</urt:pointSequence>
</urt:Point>
</urt:point>
<urt:point>
<urt:Point>
<urt:latitude>36.699333944</urt:latitude>
<urt:longitude>137.2131175</urt:longitude>
<urt:point>
<gml:Point>
<gml:pos>36.699333944 137.2131175 0</gml:pos>
</gml:Point>
</urt:point>
<urt:pointSequence>2</urt:pointSequence>
</urt:Point>
</urt:point>
<urt:point>
<urt:Point>
<urt:latitude>36.699393258</urt:latitude>
<urt:longitude>137.213110883</urt:longitude>
<urt:point>
<gml:Point>
<gml:pos>36.699393258 137.213110883 0</gml:pos>
</gml:Point>
</urt:point>
<urt:pointSequence>3</urt:pointSequence>
</urt:Point>
</urt:point>
</urt:Shape>
</grp:groupMember>
<grp:groupMember>
<urt:Trip gml:id="trip1">
<urt:orgId>1+毎日+1</urt:orgId>
<urt:headsign>新桜町公園前</urt:headsign>
<urt:route xlink:href="route1"/>
<urt:calendar xlink:href="calendar1"/>
<urt:shape xlink:href="shape1"/>
<urt:lod0MultiCurve>
<gml:MultiCurve>
<gml:curveMembers>
<gml:LineString>
<gml:pos>36.6993267946332 137.213000565343 0</gml:pos>
<gml:pos>36.699333944 137.2131175 0</gml:pos>
<gml:pos>36.699393258 137.213110883 0</gml:pos>
</gml:LineString>
</gml:curveMembers>
</gml:MultiCurve>
</urt:lod0MultiCurve>
</urt:Trip>
</grp:groupMember>
<grp:groupMember>
<urt:FareAttribute gml:id="fare1">

```

```

<urt:orgId>均一運賃_00</urt:orgId>
<urt:price>100</urt:price>
<urt:currencyType>JPY</urt:currencyType>
<urt:paymentMethod>0</urt:paymentMethod>
<urt:transfers>0</urt:transfers>
</urt:FareAttribute>
</grp:groupMember>
<urt:dataType>
  <urt:StopTime>
    <urt:arrivalTime>09:20:00</urt:arrivalTime>
    <urt:departureTime>09:20:00</urt:departureTime>
    <urt:stopSequence>18</urt:stopSequence>
    <urt:headsign>グラントプラザ前にいかわ信用金庫</urt:headsign>
    <urt:pickupType>0</urt:pickupType>
    <urt:dropoffType>0</urt:dropoffType>
    <urt:trip xlink:href="trip1"/>
    <urt:stop xlink:href="stop1_1"/>
  </urt:StopTime>
</urt:dataType>
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    <urt:language codeSpace="https://www.geospatial.jp/iur/codelists/1.5/Common_language.xml">ja</urt:language
>
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    <urt:endDate>2021-03-31</urt:endDate>
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</urt:dataType>
</grp:CityObjectGroup>
</core:cityObjectMember>
</core:CityModel>

```

Annex B (informative)

Code lists for Public Transit Data

A code list is a form of enumeration where the valid values are defined in a separate register. The code list values consist of a link or identifier for the register as well as the value from that register which is being used. In contrast to fixed enumerations, modifications and extensions to the value domain become possible with code lists. The values for all code lists in Urban Planning ADE are defined externally as in CityGML. This could, for example, be by adopting classifications from global, national, or community standards.

Examples of code lists for Urban Planning ADE can be found in Geospatial Information Center (<https://www.geospatial.jp/iur/codelists/>) which are converted from the code lists managed and maintained by GTFS.org (<https://gtfs.org/reference/static/>).

Please note that this annex is non-normative and the example code lists are neither mandatory nor complete.

Bibliography

- [1] Filip Biljecki, Kavisha Kumar and Claus Nagel. CityGML Application Domain Extension (ADE): overview of developments, 27 August 2018, <https://opengeospatialdata.springeropen.com/articles/10.1186/s40965-018-0055-6> (Accessed 7 March 2019)
- [2] CityGML UtilityNetworkADE, http://www.citygmlwiki.org/index.php?title=CityGML_UtilityNetworkADE (Accessed 7 March 2019)
- [3] City Bureau, Ministry of Land, Infrastructure, Transport and Tourism of Japan: Implementation Guidelines of Basic Survey of City Planning (in Japanese), March 2019, <http://www.mlit.go.jp/common/001282174.pdf> (Accessed 18 April 2019)
- [4] Fukuoka Prefecture, Data Specification for Basic Survey of City Planning Database (survey by city), 2018 (in Japanese)
- [5] Fukuoka Prefecture, Data Specification for Basic Survey of City Planning Database (survey by prefecture), 2018 (in Japanese)

Revision History

Date	Release	Paragraph modified	Description
2019/3/20	0.9	All	Document created
2019/5/7	1.0	All	<p>Add elements and properties to ensure consistency with Basic Surveys Concerning City Planning (Part 1, Part 2, and Part 3)</p> <p>Add temporal attribute to accumulate and utilize time series datasets (Part1, part2, Part 3 and Part4)</p> <p>Import and extend grp::CityObjectGroup for object collection to mention the purpose or usage of the collection (Part1)</p> <p>Rename or add properties for clarification (Part 1)</p> <p>Add associations to describe global city model as LOD extension (Part 4)</p> <p>Modify UML diagrams and XML Schemata based on the modifications above (Part1, part2, Part 3 and Part4)</p> <p>Modify text description for clarification and Correct editorial errors (Through the document)</p>
2019/11/01	1.1	Part 1	Add an attribute “uro::widthType” to “tran::Road” and the code list for the attribute.
		Part 2	Change the associated classes of “urf::area”, “urf::boundary” and “urf::location” to the multiple geometric objects.
		Part 1, Part 2 and Part 4	Correct inconsistency between UML diagrams and XMLSchema.
		Part 2 and Part 3	Add remarks to that of featureType classes. Change global element of feature attributes to local elements not to use the mechanism of “hook”. Delete “_GenericApplicationPropertyOf...” elements of dataType classes.
		All	Correct editorial errors (Through the document)
2020/02/24	1.2	Part 3 and Part 4	Delete Part 4 to integrate the concept of extended LOD into statistical grid.
		All	Clarify the XMLSchema location
		All	Update UML diagrams based on the OGC best practice (Modeling an application domain extension of CityGML in UML, 12-066. Open Geospatial Consortium. 2014.)
		All	Correct inconsistency with “Element - Property” structure in XMLSchema
		All	The type “xs:double” used to describe area is changed to “gml:MeasureType” for its strictness with “uom”.

		Part 2	The type “xs:double” used to describe length is changed to “gml:LengthType” for its strictness with “uom”.
		All Annex A	XML Schemas are updated based on the modification above.
		All Annex B	The URL of each codelist is added.
		All Annex A	Sample datasets are updated based on the modification above. Describe CRS identifier in the sample datasets.
2020/03/19	1.3	Figures	Fix printing mistakes in figures.
		Part1 and 2	Add “PublicTransit” to represent public transit networks and delete extended properties for TransportationComplex in Urban Object module.
		Part 2 and 3	Correct typos.
2020/3/27	1.4	Part 2 and 3	Reorganize the concept of extended LOD and new Annex C is added to explain the concept of ExtendedLOD. Delete “_GenericApplicationPropertyOf...” elements for maintaining strictness.
		Part 1 and Part 3	Generic property for building and statistical grid is added.
		Part 3	Modify data structure of Statistical Grid Module to avoid data complexity.
		Part 4 and Part 2	Define new module for "Public Transit" as Part 4.
2020/08/31		Part 1 and Part 3	Correct type of “dateValue” in KeyValuePair
		Part 2	Change name of the class “PublicTransit” to “PublicTransportationFacility” for clarification.
		Part 3	Add missing attribute “genericValue” into XMLSchema of GenericGridCell.
2021/04/01	1.5	XMLSchema	Change the namespace URI and schemaLocation attribute of all XSD files.
2022/03/23	2.0	Part 1	update application schema and codelist to ensure harmonization with the “Project PLATEAU”.
		Part 2	Added classes for information on city planning decisions based on the City Planning Law.
		XMLSchema	Change the namespace URI and schemaLocation attribute of all XSD files.
2022/04/28		Part 2	Correct typos.
2023/03/28	3.0	Part 1 through Part 3	Added new feature types and data types based on the results of the Project PLATEAU in 2022.
		XMLSchema	Revised to reflect updated conceptual models.
2023/08/07		Part 1	Added new attributes and data types into Utility Network.
2023/11/20		Part 1	Added a new attribute to bldg:Building for real estate ID.
2024/03/22		Part 1	Added new attributes to CityObjects.