CityGML model for Other Constructions

CityGML SWG WG 9

Version 1.0

October 20th, 2014

«featureType»
AbstractCityObject

«featureType»
Vegetation::
AbstractVegetationObject

«featureType»
Relief::
ReliefFeature

+reliefComponent

«featureType»
Relief::
AbstractReliefComponent

1..*

Previously: AbstractSite

«featureType»
AbstractConstruction

«featureType»
Transportation::
AbstractTransportationObject

«featureType»
GenericCityObject

«featureType»
OtherConstruction::
CityFurniture

«featureType»
Tunnel::
AbstractTunnel

«featureType»
Building::
AbstractBuilding

«featureType»
WaterBody::
AbstractWaterObject

«featureType»
LandUse::LandUse

«featureType»
UtilityNetwork::
AbstractNetworkObject

«featureType»
OtherConstruction::
OtherConstruction

«featureType»
Bridge::
AbstractBridge

«dataType»
Elevation

+ elevationReference :ElevationReferenceValue
+ elevationValue :DirectPosition

«codeList»
HeightStatusValue

+ estimated
+ measured

«codeList»
ConditionOfConstructionValue

+ declined
+ demolished
+ functional
+ projected
+ ruin
+ underConstruction

«dataType»
HeightAboveGround

+ heightReference :ElevationReferenceValue
+ lowReference :ElevationReferenceValue
+ status :HeightStatusValue
+ value :Length

«codeList»
ElevationReferenceValue

+ aboveGroundEnvelope
+ bottomOfConstruction
+ entrancePoint
+ generalEave
+ generalGround
+ generalRoof
+ generalRoofEdge
+ highestEave
+ highestGroundPoint
+ highestPoint
+ highestRoofEdge
+ lowestEave
+ lowestFloorAboveGround
+ lowestGroundPoint
+ lowestRoofEdge
+ topOfConstruction

«codeList»
HorizontalGeometryReferenceValue

+ aboveGroundEnvelope
+ combined
+ entrancePoint
+ envelope
+ footPrint
+ lowestFloorAboveGround
+ pointInsideBuilding
+ pointInsideCadastralParcel
+ roofEdge

AbstractCityObject

«featureType»
AbstractConstruction

+ conditionOfConstruction :ConditionOfConstructionValue [0..1]
+ dateOfConstruction :Date [0..1]
+ dateOfRenovation :Date [0..*]
+ dateOfDemolition :Date [0..1]
+ elevation :Elevation [0..*]
+ heightAboveGround :HeightAboveGround [0..*]

«featureType»
Building::
AbstractBuilding

«featureType»
Bridge::
AbstractBridge

«featureType»
Tunnel::
AbstractTunnel

«featureType»
UtilityNetwork::
AbstractNetworkObject

«featureType»
OtherConstruction::
CityFurniture

«featureType»
OtherConstruction::
OtherConstruction

AbstractConstruction

«featureType»
OtherConstruction

+ class :OtherConstructionClassValue
+ function :OtherConstructionFunctionValue [0..*]
+ usage :OtherConstructionUsageValue [0..*]
+ lod0Geometry :LoD0Representation [0..*]
+ lod1Geometry :LoD1Representation [0..1]
+ lod2Geometry :LoD2Representation [0..1]
+ lod3Geometry :LoD3Representation [0..1]
+ lod0ImplicitRepresentation :ImplicitGeometry [0..1]
+ lod1ImplicitRepresentation :ImplicitGeometry [0..1]
+ lod2ImplicitRepresentation :ImplicitGeometry [0..1]
+ lod3ImplicitRepresentation :ImplicitGeometry [0..1]

constraints
{lod0Geometry XOR lod0ImplicitRepresentation}
{lod1Geometry XOR lod1ImplicitRepresentation}
{lod2Geometry XOR lod2ImplicitRepresentation}
{lod3Geometry XOR lod3ImplicitRepresentation}

«codeList»
OtherConstructionClassValue

+ acousticFence
+ antenna
+ bridge
+ chimney
+ cityWall
+ crane
+ monument
+ openAirPool
+ protectiveStructure
+ pylon
+ retainingWall
+ solarPanel
+ substation
+ tunnel

«codeList»
OtherConstructionFunctionValue

«codeList»
OtherConstructionUsageValue

«dataType»
LoD0Representation

+ multiPointRepresentation :GM_MultiPoint [0..1]
+ multiCurveRepresentation :GM_MultiCurve [0..1]
+ multiSurfaceRepresentation :GM_MultiSurface [0..1]
+ terrainIntersection :GM_MultiCurve [0..1]
+ horizontalGeometryReference :HorizontalGeometryReferenceValue [0..1] {id}
+ verticalGeometryReference :ElevationReferenceValue [0..1]

constraints
{multiPointRepresentation XOR multiLineRepresentation XOR multiSurfaceRepresentation}
{multiCurveRepresentation: Must be 2.5 D}
{multiSurfaceRepresentation: Must be horizontal(?)}

«dataType»
LoD1Representation

+ multiCurveRepresentation :GM_MultiCurve [0..1]
+ multiSurfaceRepresentation :GM_MultiSurface [0..1]
+ solidRepresentation :GM_Solid [0..1]
+ terrainIntersection :GM_MultiCurve [0..1]
+ horizontalGeometryReference :HorizontalGeometryReferenceValue [0..1]
+ verticalGeometryReferenceBottom :ElevationReferenceValue [0..1]
+ verticalGeometryReferenceTop :ElevationReferenceValue [0..1]

constraints
{multiLlineRepresentation XOR multiSurfaceRepresentation XOR solidRepresentation}
{multiCurveRepresentation: Only vertical curve members}
{multiSurfaceRepresentation: Only vertical surface members}
{solidRepresentation: Only horizontal (exactly 2) and vertical surface members}

«dataType»
LoD2Representation

+ multiCurveRepresentation :GM_MultiCurve [0..1]
+ multiSurfaceRepresentation :GM_MultiSurface [0..1]
+ solidRepresentation :GM_Solid [0..1]
+ terrainIntersection :GM_MultiCurve [0..1]

«dataType»
LoD3Representation

+ multiCurveRepresentation :GM_MultiCurve [0..1]
+ multiSurfaceRepresentation :GM_MultiSurface [0..1]
+ solidRepresentation :GM_Solid [0..1]
+ terrainIntersection :GM_MultiCurve [0..1]