CityGML 2.0 standard attribut för att definiera olika relativhöjdnivå till terräng och vatten

I standard CityGML 2.0 som en del av Core schema finns attribut – relativeToTerrain samt relativeToWater som arvs neråt till all geometri.

Feature catalogue core:CityGML (citygmlwiki.org)

relativeToTerrain

Attribute type: core:relativeToTerrain back

Definition
SIG3D: Vertical position of the *_CityObject* relative to the surrounding terrain.

Cardinality
0..1

Data type
RelativeToTerrainType (Enumeration)

Code	*Text*	
entirelyAboveTerrain	entirelyAboveTerrain	SIG3D: Object is located entirely above terrain.
substantiallyAboveTerrain	substantiallyAboveTerrain	SIG3D: Most, but not all parts of the object are located above terrain.
substantiallyAboveAndBelowTerrain	substantiallyAboveAndBelowTerrain	SIG3D: Parts of the object are located above terrain, and other parts below terrain.
substantiallyBelowTerrain	substantiallyBelowTerrain	SIG3D: Most, but not all parts of the object are located below terrain.
entirelyBelowTerrain	entirelyBelowTerrain	SIG3D: All parts of the object are located below terrain.

I Stockholm används 3 av dessa 5.

I Stockholms Baskarta, alla objekt har en liknat värde som relativeToTerrain, ”Mark” och värde På, Under, Över.

Följande mappning har gjorts

Stockholm - Mark	**CityGML - relativeToTerrain**
Över	entirelyAboveTerrain
På	substantiallyAboveAndBelowTerrain
Under	entirelyBelowTerrain

relativeToWater

Attribute type: core:relativeToWater back

Definition
SIG3D: Vertical position of the *_CityObject* relative to a surrounding water surface.

Cardinality
0..1

Data type
RelativeToWaterType (Enumeration)

Code	*Text*	
entirelyAboveWaterSurface	entirelyAboveWaterSurface	SIG3D: Object is located entirely above water surface..
substantiallyAboveWaterSurface	substantiallyAboveWaterSurface	SIG3D: Most, but not all parts of the object are located above water surface.
substantiallyAboveAndBelowWaterSurface	substantiallyAboveAndBelowWaterSurface	SIG3D: Parts of the object are located above water surface, and other parts below water surface.
substantiallyBelowWaterSurface	substantiallyBelowWaterSurface	SIG3D: Most, but not all parts of the object are located below water surface.
entirelyBelowWaterSurface	entirelyBelowWaterSurface	SIG3D: All parts of the object are located below water surface.
temporarilyAboveAndBelowWaterSurface	temporarilyAboveAndBelowWaterSurface	SIG3D: The height of the water surface is varying and the object temporily is located above or below water level.

Än så länge i Stockholms data lagras inget värde för höjd läge i relation till vatten, men det anses att bruk finns för minst objekt Brygga.

Bruk av dessa attribut kan stödja hur geometri visualiseras i en kartklient, om geometri ska draperas på en markmodell eller behåller sin utgångs höjd.

```
<transportation:TrafficArea gml:id="ID_37c7ed29-70a8-45f8-8c89-3f9800ed38fb">
 <gml:description>GC-väg</gml:description>
 <core:creationDate>2024-07-03</core:creationDate>
 <core:externalReference>
 <core:informationSystem>Nationella vagdatabasen_RLID</core:informationSystem>
 <core:externalObject>
 <core:name>16668:52631</core:name>
 </core:externalObject>
 </core:externalReference>
 <core:relativeToTerrain>entirelyAboveTerrain</core:relativeToTerrain>
 <transportation:class codeSpace="https://github.com/3CIM/Public-files/blob/main/
 <transportation:function codeSpace="https://github.com/3CIM/Public-files/blob/ma
 <transportation:surfaceMaterial codeSpace="https://github.com/3CIM/Public-files/
 <transportation:lod2MultiSurface>
 <gml:MultiSurface srsName="epsg:3011" srsDimension="3">
 <gml:surfaceMember>
 <gml:Polygon>
 <gml:exterior>
 <gml:LinearRing>
 <gml:posList>146799.774 6587709.631 19.443 146802.929 6587712.32 19.414 146805.1
 </gml:LinearRing>
 </gml:exterior>
 </gml:Polygon>
 </gml:surfaceMember>
 </gml:MultiSurface>
 </transportation:lod2MultiSurface>
 </transportation:TrafficArea>
```

Exempel av en LOD2 GC-väg som ligger på en bro.