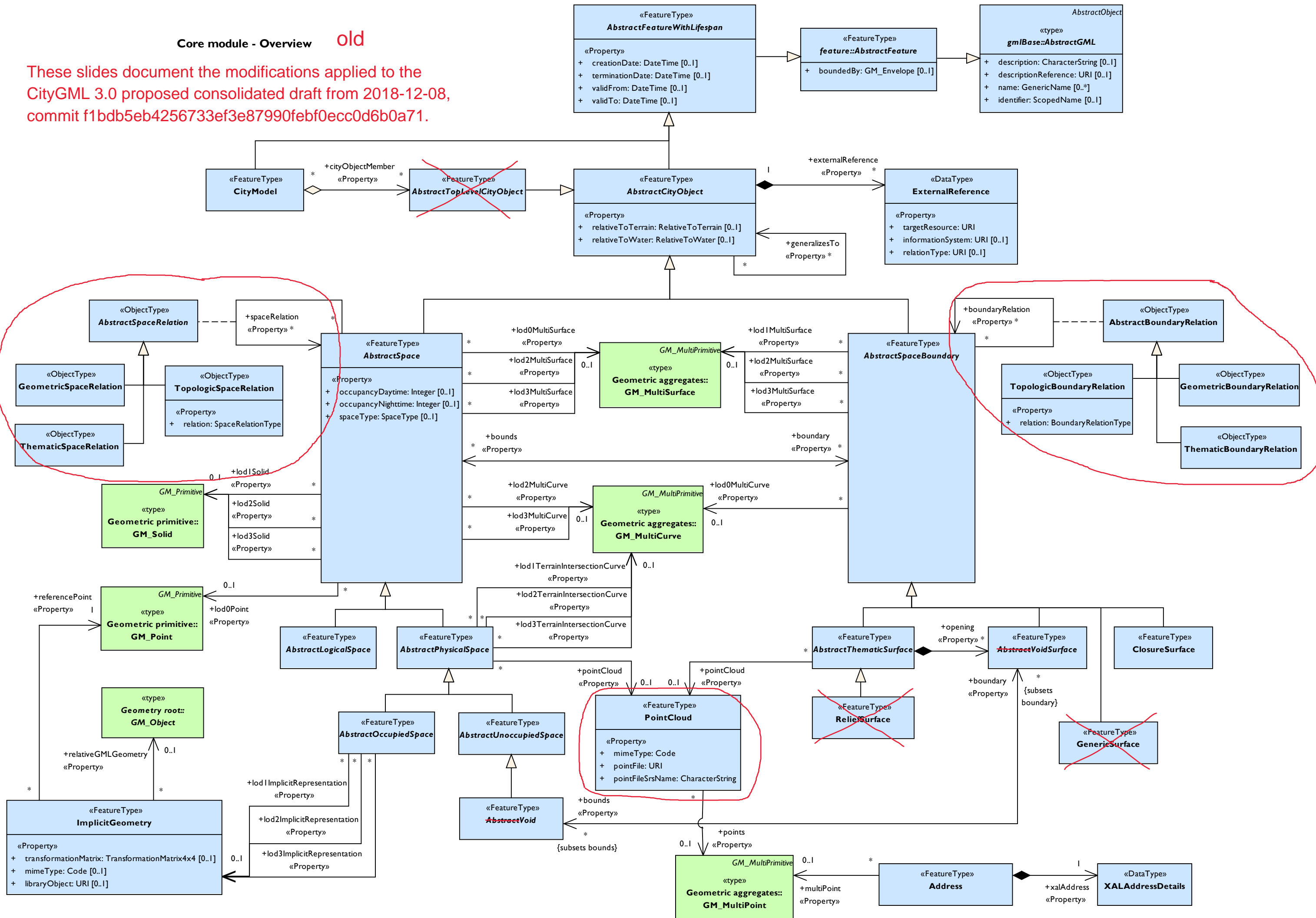
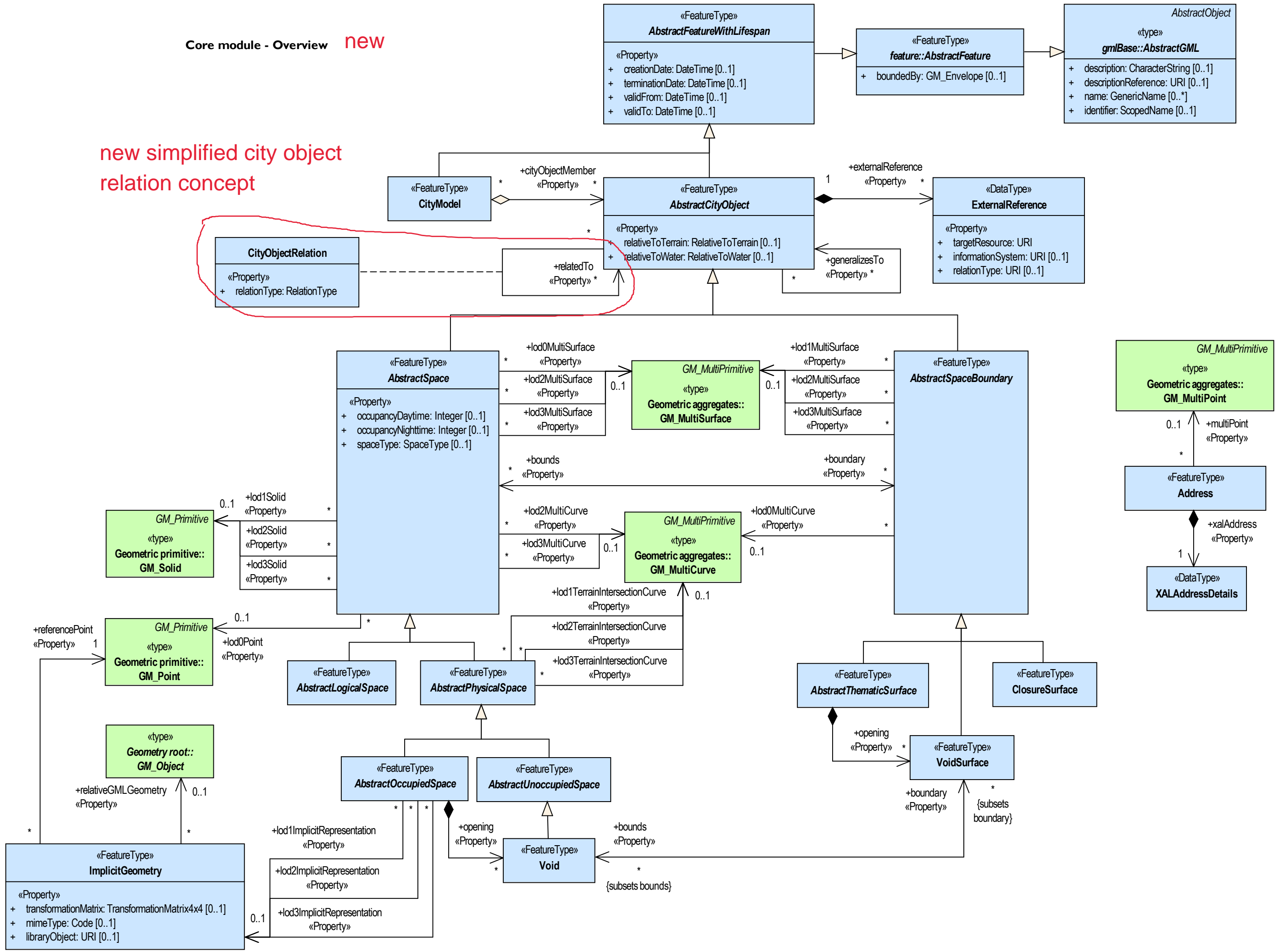


Core module - Overview old

These slides document the modifications applied to the CityGML 3.0 proposed consolidated draft from 2018-12-08, commit f1bdb5eb4256733ef3e87990feb0ecc0d6b0a71.

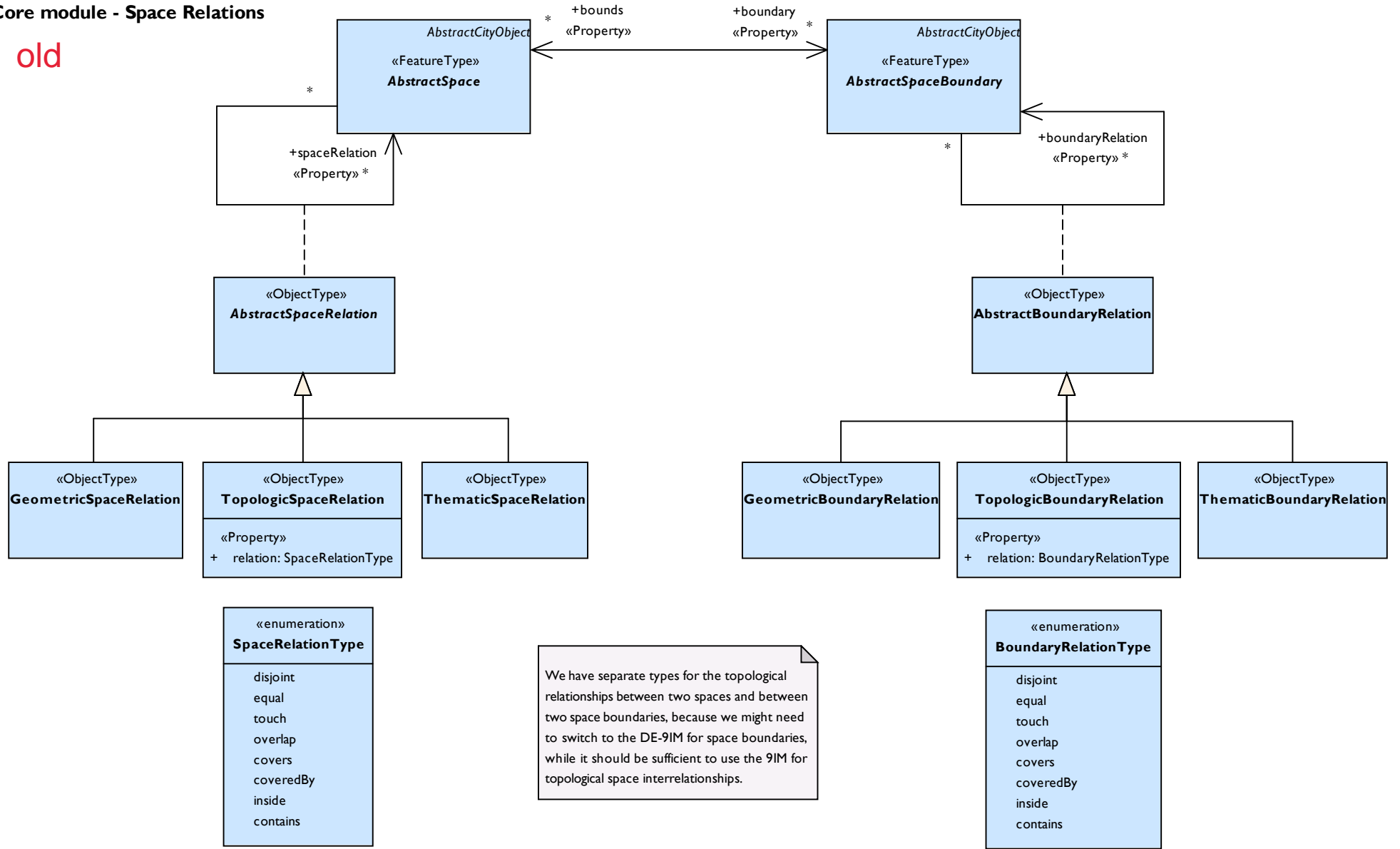


new simplified city object
relation concept



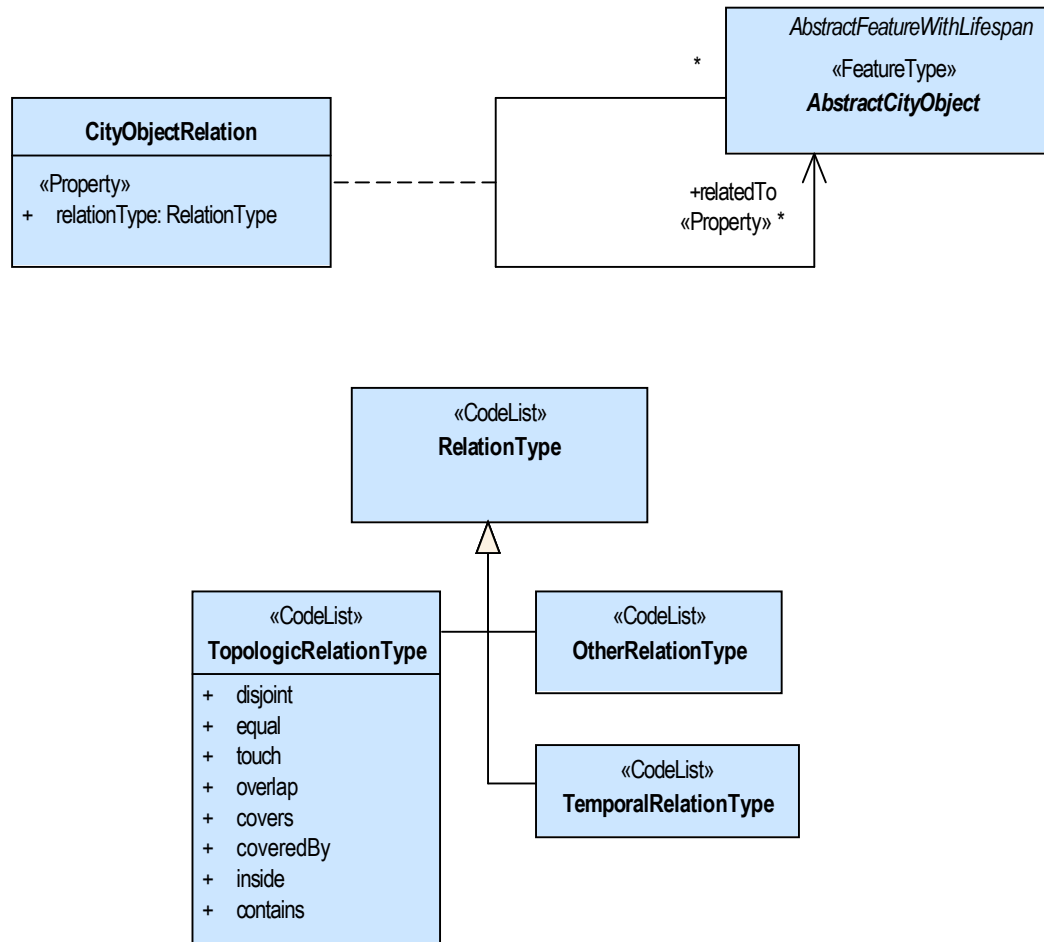
Core module - Space Relations

old

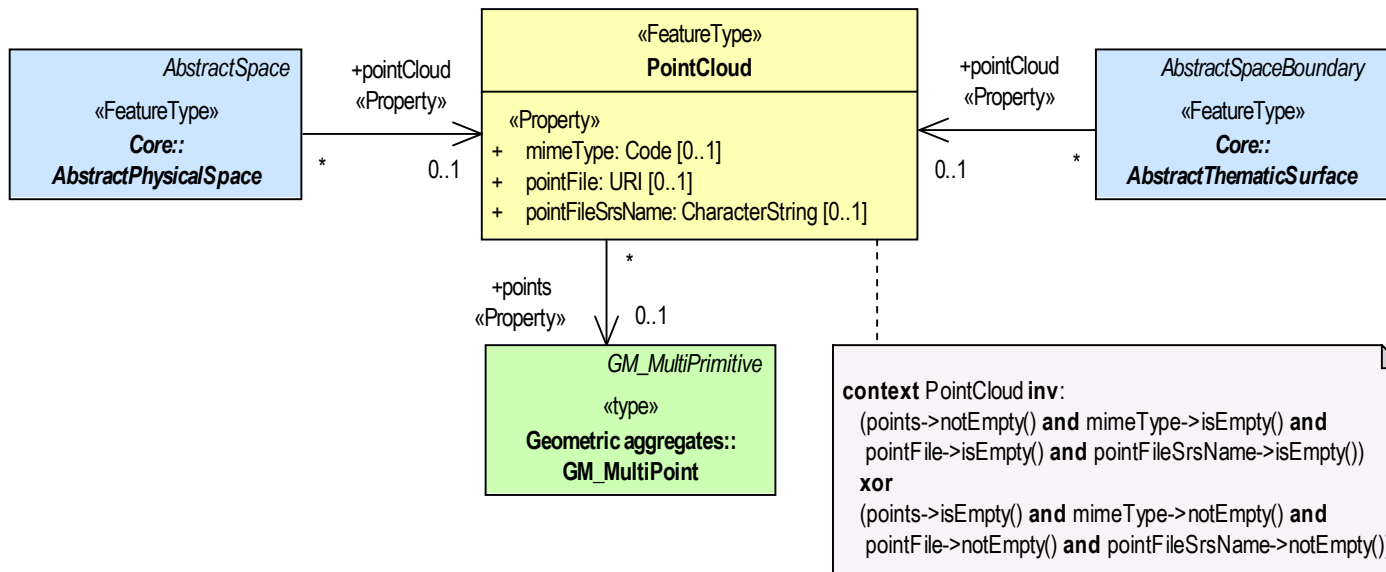


new

Core module - City object relations



new
PointCloud module

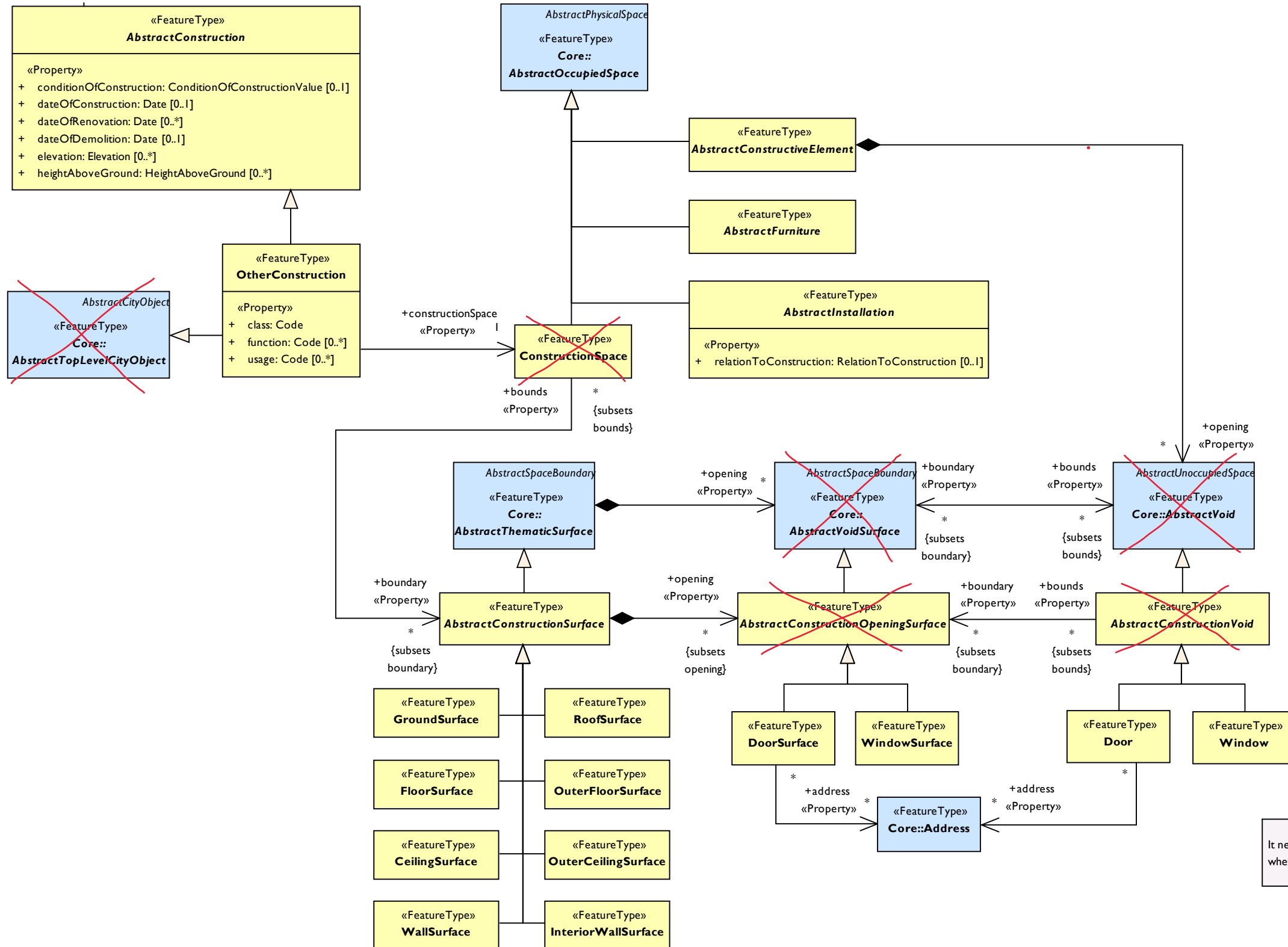


The point cloud module was newly introduced by removing the class PointCloud from the Core module.

old

Construction module

AbstractConstruction is a so-called "mixin" class, i. e. during the mapping to GML its properties and associations are just copied to its subclass **OtherConstruction**. This mechanism allows the handling of multiple inheritance, which is not supported by some platforms like XML. Hence, **OtherConstruction** is mapped to GML in a way that **AbstractTopLevelCityObject** is its real superclass.



«enumeration» ConditionOfConstructionValue
declined
demolished
functional
projected
ruin
underConstruction

«enumeration» RelationToConstruction
inside
outside
bothInsideAndOutside

«DataType» Elevation
«Property»
+ elevationReference: ElevationReferenceValue
+ elevationValue: DirectPosition

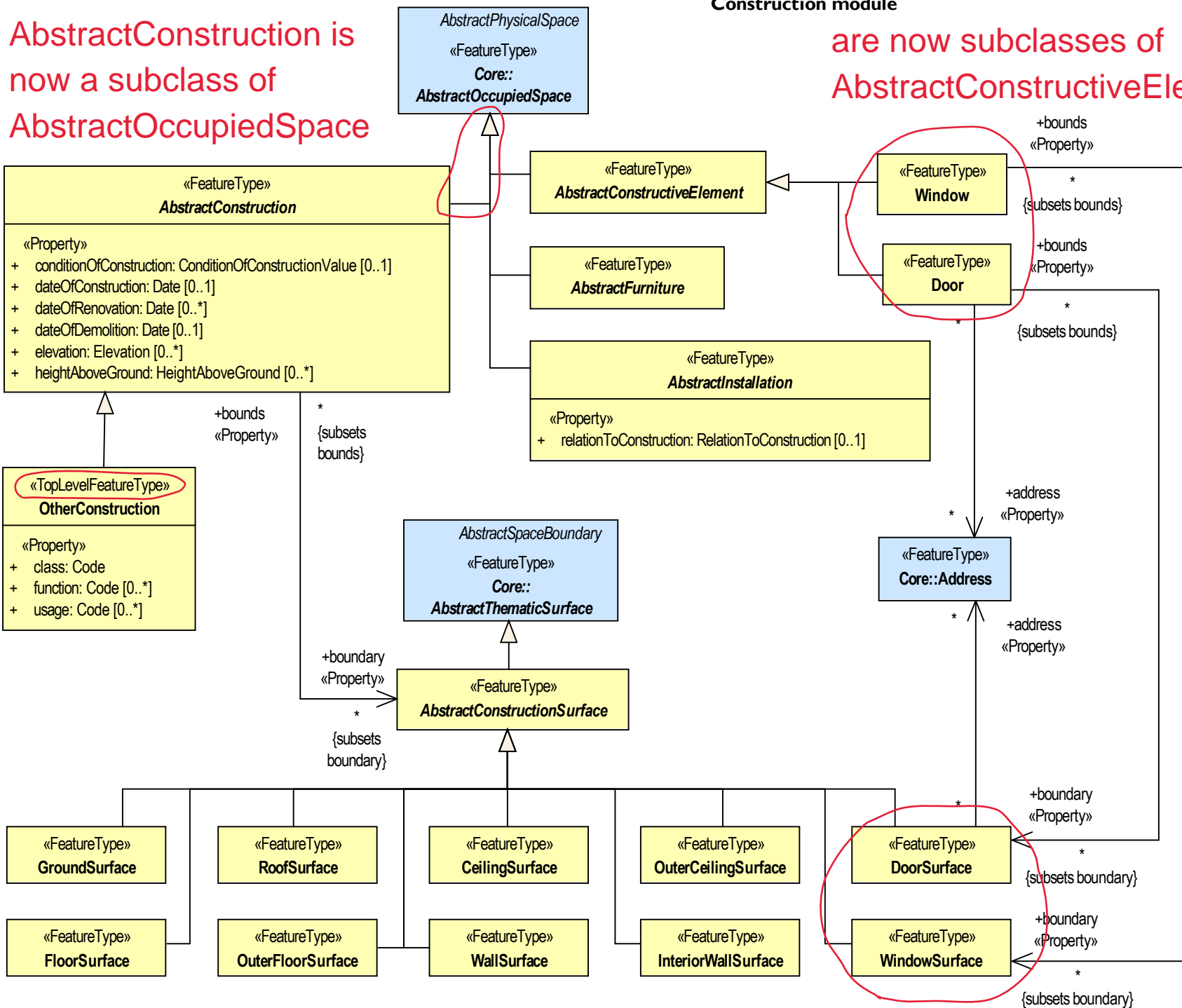
«DataType» HeightAboveGround
«Property»
+ heightReference: ElevationReferenceValue
+ lowReference: ElevationReferenceValue
+ status: HeightStatusValue
+ value: Length

«enumeration» ElevationReferenceValue
aboveGroundEnvelope
bottomOfConstruction
entrancePoint
generalEave
generalGround
generalRoof
generalRoofEdge
highestEave
highestGroundPoint
highestPoint
highestRoofEdge
lowestEave
lowestFloorAboveGround
lowestGroundPoint
lowestRoofEdge
topOfConstruction

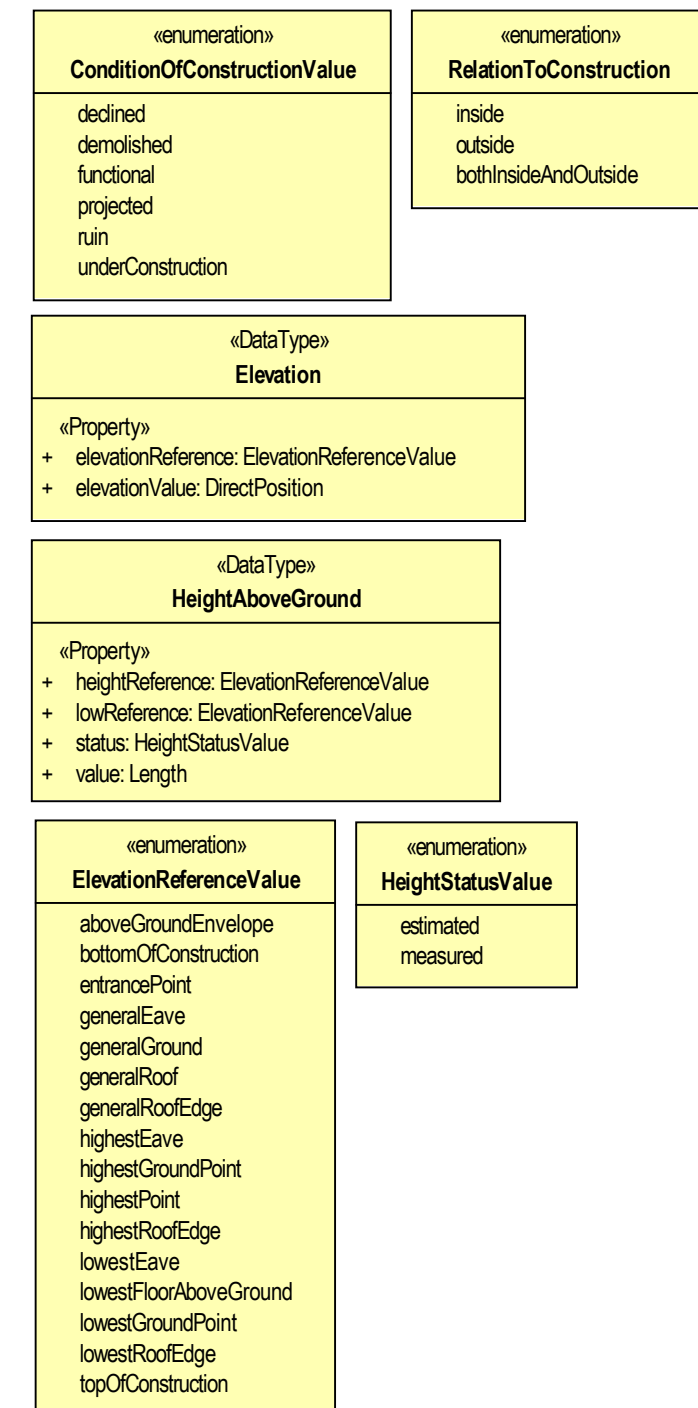
«enumeration» HeightStatusValue
estimated
measured

It needs to be discussed further within the SWG, whether a **Door** is a **Void** or an **Opening**,

AbstractConstruction is
now a subclass of
AbstractOccupiedSpace



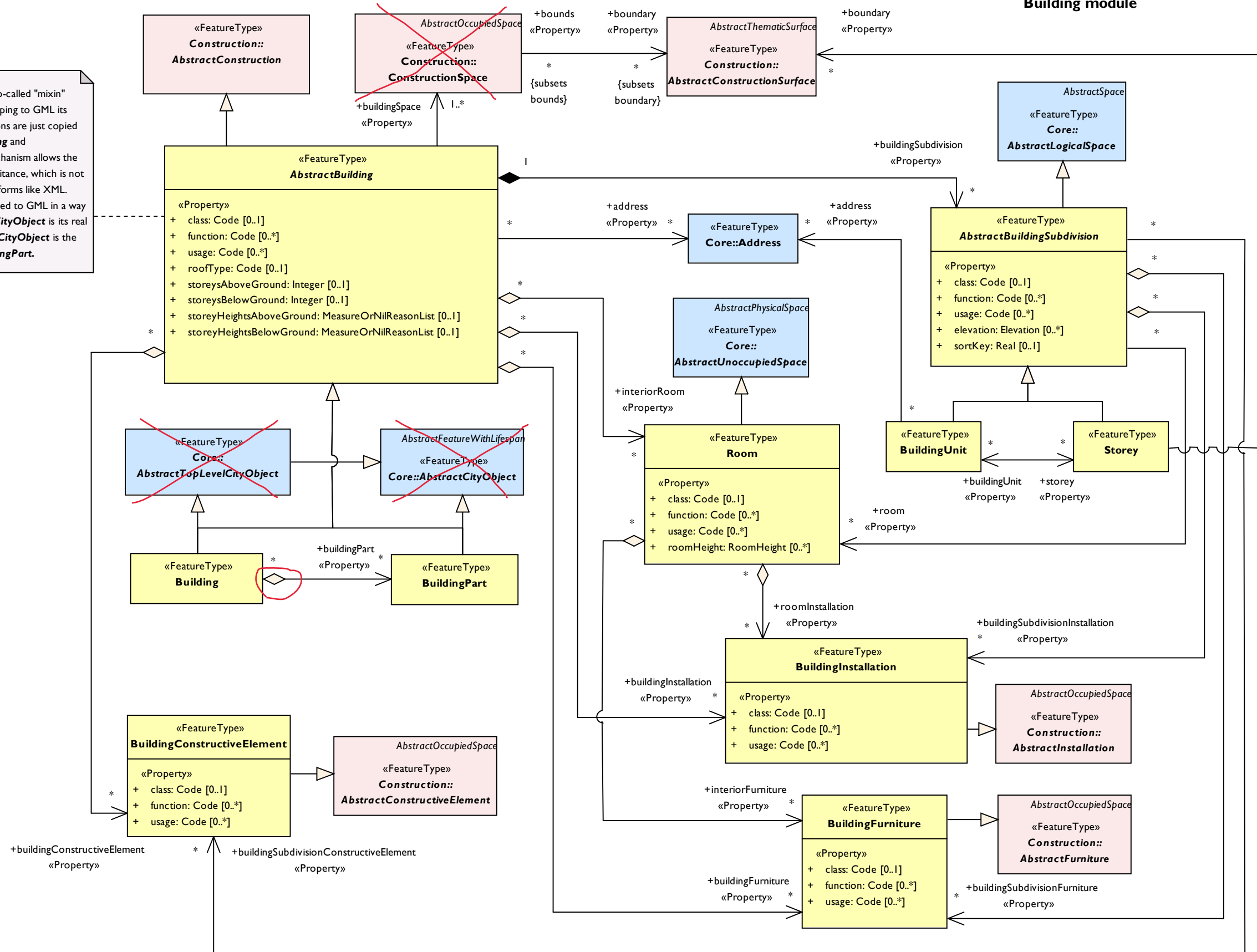
are now subclasses of
AbstractConstructionSurface



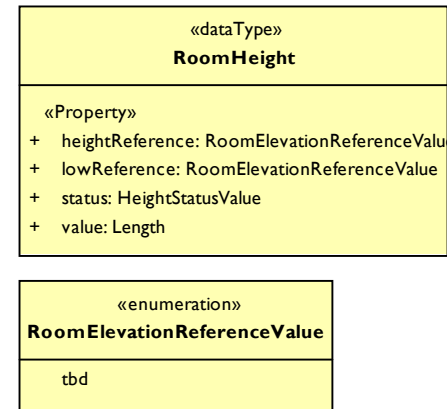
old

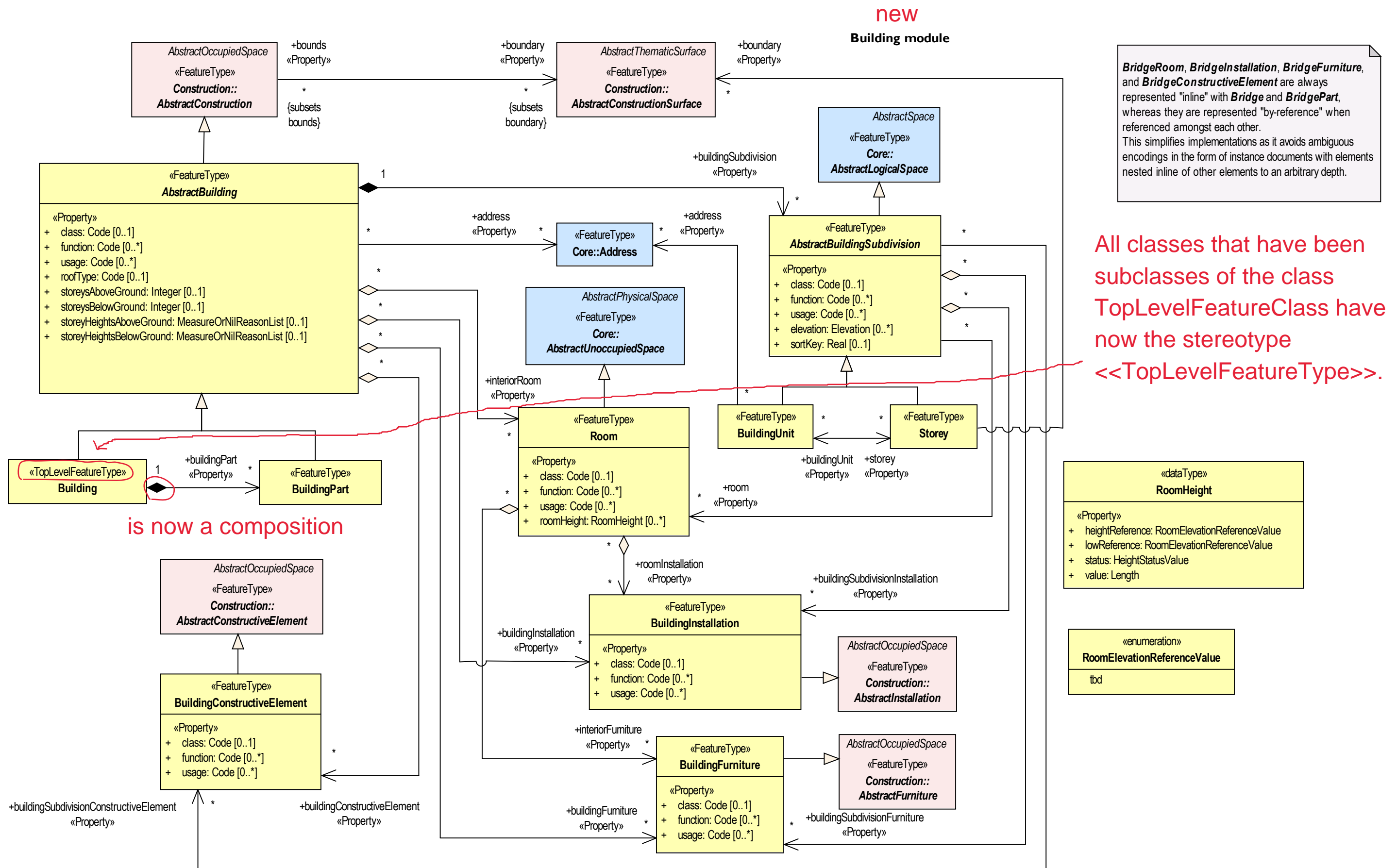
Building module

AbstractBuilding is a so-called "mixin" class, i. e. during the mapping to GML its properties and associations are just copied to its subclasses (**Building** and **BuildingPart**). This mechanism allows the handling of multiple inheritance, which is not supported by some platforms like XML. Hence, **Building** is mapped to GML in a way that **AbstractTopLevelCityObject** is its real superclass and **AbstractCityObject** is the real superclass of **BuildingPart**.



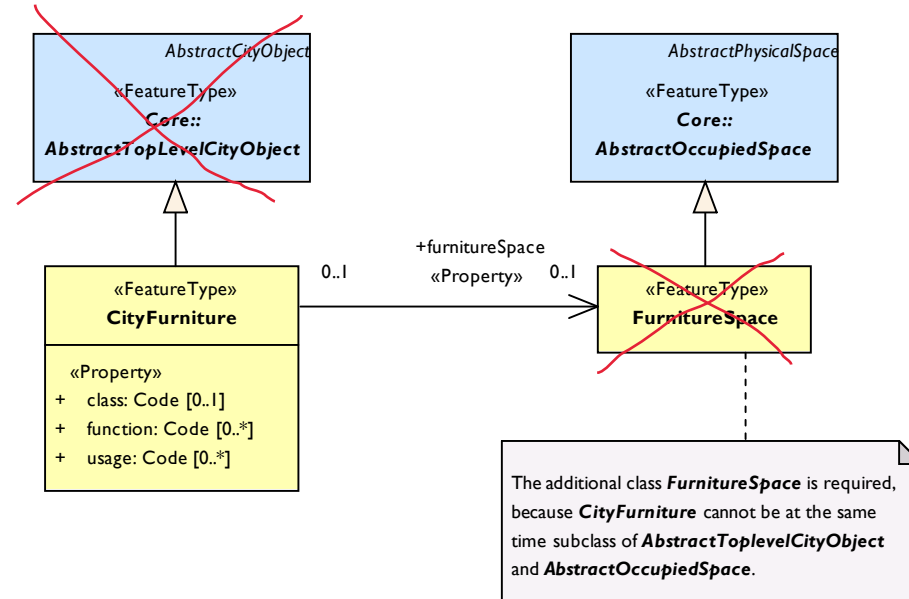
Room, BuildingInstallation, BuildingFurniture, AbstractBuildingSubdivision and **BuildingConstructiveElement** are always represented "inline" with **Building** and **BuildingPart**, whereas they are represented "by-reference" when referenced amongst each other.



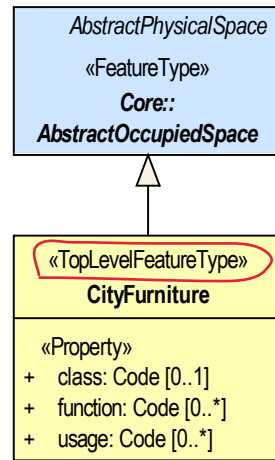


old

CityFurniture module



new
CityFurniture module

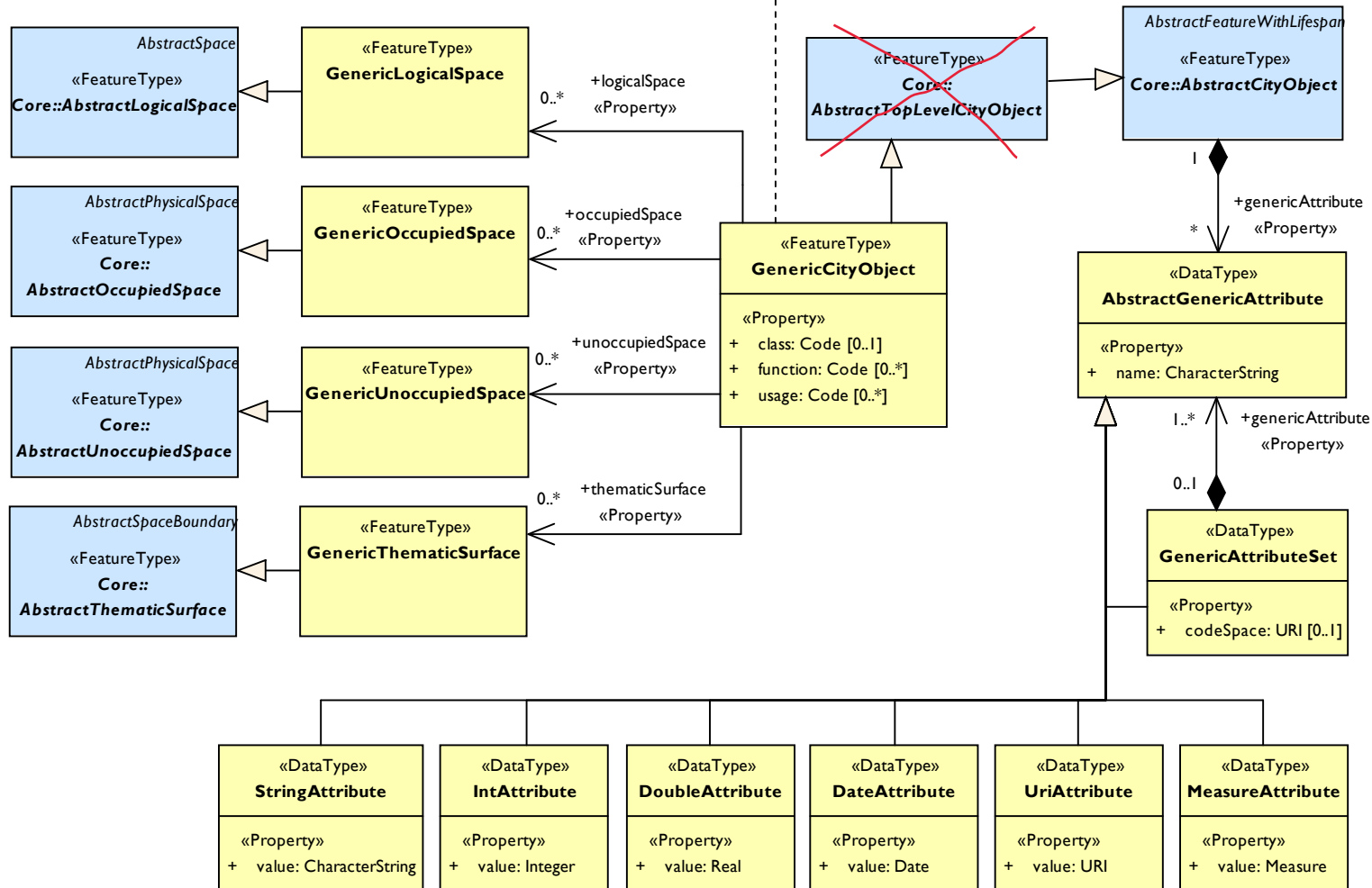


After removing the inheritance relationships the class *TopLevelCityObject* and the association relationships to the specific Space classes, the UML diagrams are now much more similar again to the UML diagrams from CityGML 2.0.

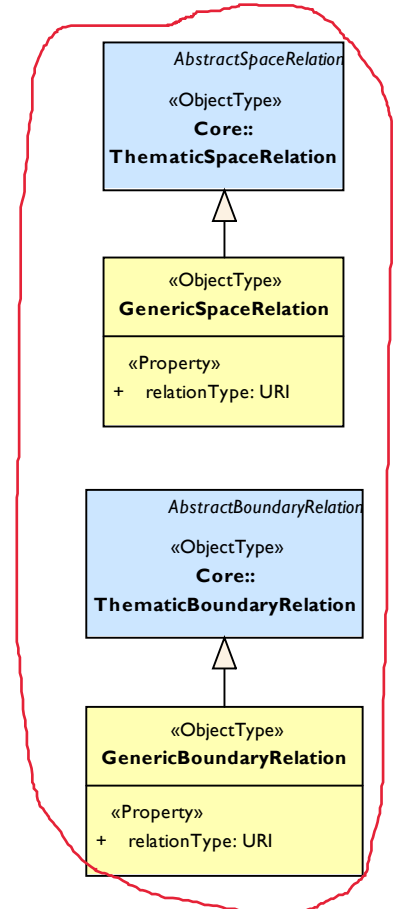
old

Generics module

An instance of **GenericCityObject** can only be associated either with one or several instances of one of the Space classes or with one or several instances of **GenericThematicSurface**.



The **GenericSpaceRelation** and **GenericBoundaryRelation** can be used to represent an arbitrary relationship between two spaces or two space boundaries respectively. The relation type is expressed by an URI. Such relations could directly be mapped to RDF triples, where the source is pointing to the source space object, the target to the target space object, and the relation type is pointing to a definition of a relationship type in the Web.

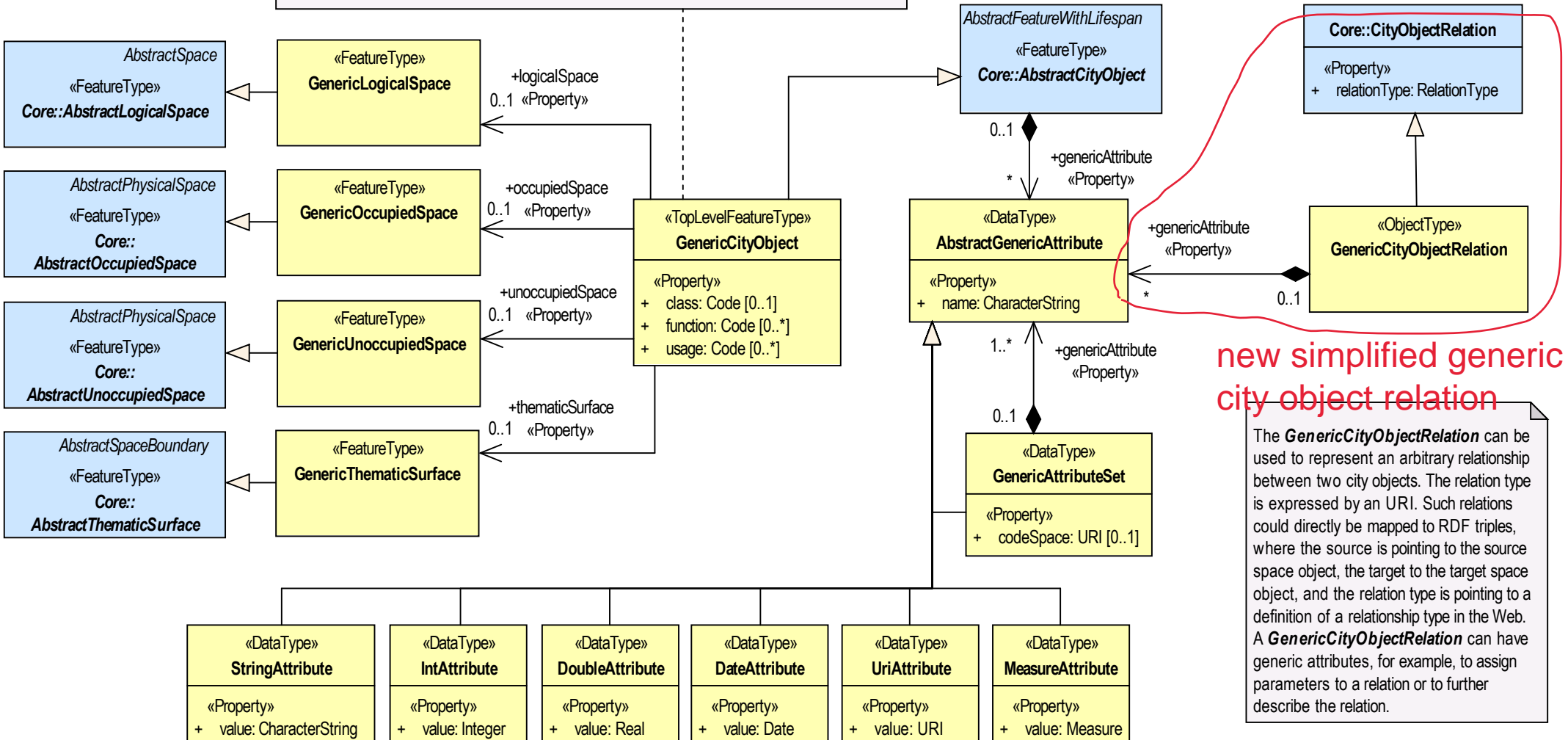


Generics module - Alternative I

new - alternative 1

context GenericCityObject inv:
 logicalSpace->size() + occupiedSpace->size()
 + unoccupiedSpace->size() + thematicSurface->size() = 1

An instance of **GenericCityObject** can only be associated either with one instance of one of the Space classes or with one instance of **GenericThematicSurface**.
 If several city objects are to be modelled at the same time, CityObjectGroup should be used.



new - alternative 2

Generics module

This alternative was used in the encoding

