

1. Visualizations in FZK Viewer (before conversion)

Amsterdam – Dataset

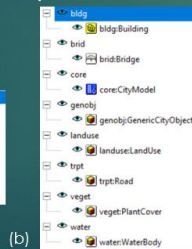
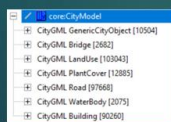
CityGML

- ▶ Huge LoD1 dataset
- ▶ Take approx. 20 mins for dataset to be opened in FZKViewer
- ▶ Accessing features of dataset make software unresponsive

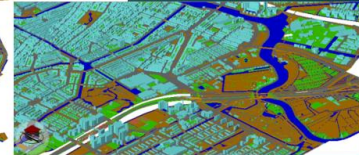


Figure 1.8.3

Figure 1.8.1 (a)



(b)



(b)

Figure 1.8.2 (a)

Visualizations: FZKViewer

2. Conversion through FZK Viewer

a. Visualization in BIM Vision

Amsterdam LoD1 – Experiment

CityGML to IFC

- ▶ Exports CityGML to IFC in approx. 8 mins
- ▶ Software goes unresponsive but doesn't crash
- ▶ Only building features are transformed with planes/footprints as Building geometries
- ▶ Building attributes are translated

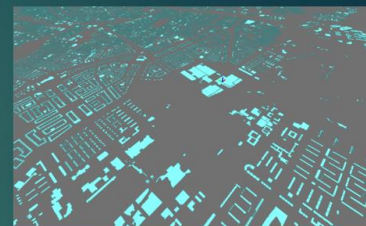


Figure 3.3.1 (a)

Properties	Location	Classification	Relations	Value
Element Specific				
Composition type				ELEMENT
Guid				007b7f7f2b2c4d6d606
Identity				IfBuilding
Name				MyBuilding
XML PropertySet				
IdMeasuredHeight				15.59
CreationDate				2019-06-12

(b)

[illegible]

Figure 3.3.2 (a)

Visualizations: BIMVision
Conversion tool: FZKViewer

b. Discussion

FZK Viewer was tested in terms of importing large scale multilayer CityGML dataset and exporting IFC data from the software. Dataset is composed of multiple city layers Figure 1.8.1 (b) and takes time to be loaded in FZK Viewer. Software gets unresponsive on different stages, for example viewing, panning, enabling/disabling layers, but doesn't crash until multiple actions are input to software.

Since the data set is CityGML LoD1, the exported IFC model was LOD 100 for IFC4 format in considerably short time with no building geometry and only building footprints (see Figure 3.3.2 (a) and (b)). Other elements like bridges, road were discarded automatically in export by FZK Viewer.

Semantic details attached with building elements are kept after conversion as shown in Figure 3.3.1 (a). Geometry information for building footprint with location is also converted correctly. This shows that FZK Viewer has better semantic and geometric mapping of CityGML to IFC data compared to off-the-shelf FME Quick Translation tool.