CityDoctor2 in a nutshell

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License

CityDoctor2 - Introduction

Overview

The use of 3D city models in simulations and spatial analyses has gained interest in recent years. However, practice has shown that geometric city models often contain errors that alter the simulation results. Troubleshooting is usually associated with a high manual effort. In order to reduce or even completely remove this effort, **CityDoctor 2** is one of the tools that can be used. CityDoctor is developed by the HFT Stuttgart, Germany.

Procedure

Before a repair can take place, the errors and as much information as possible about them must first be identified and documented. With this information a repair can then be started. Two different approaches are available. One approach is to develop complex deterministic algorithms that correct the errors. Furthermore, an evolutionary approach is pursued, which is based on a cyclical repair process. Together with an evaluation function, it comes as close as possible to a perfect repair.

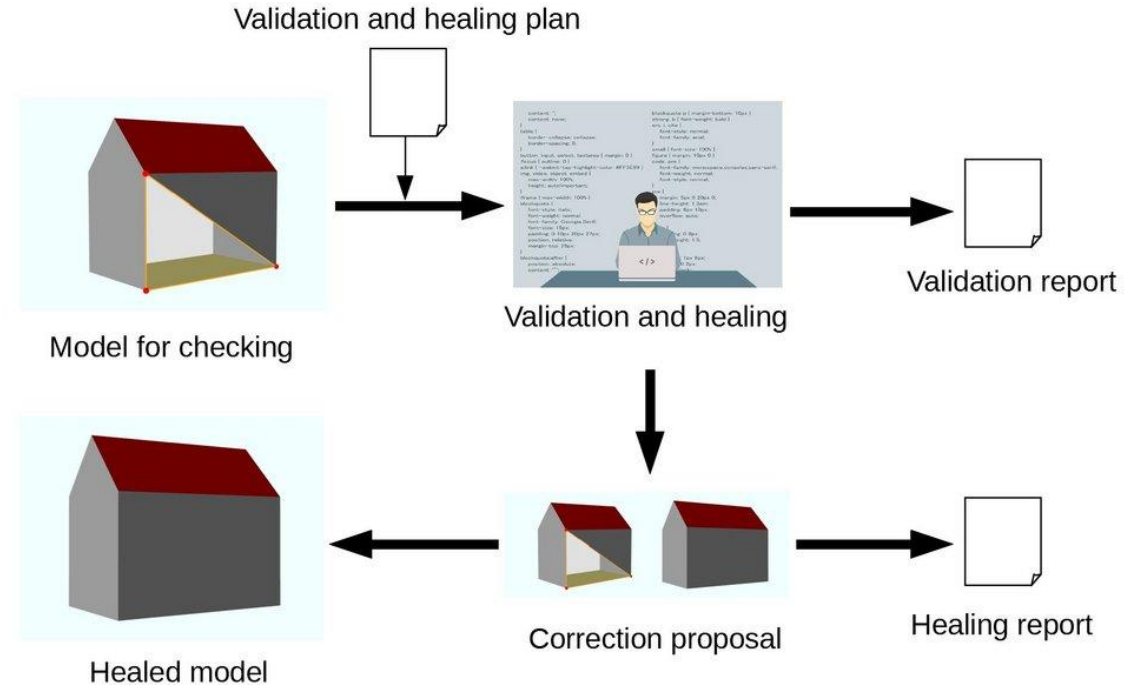
Resources

Webpage: https://www.hft-stuttgart.de/forschung/projekte/aktuell/citydoctor-2
Download: https://transfer.hft-stuttgart.de/gitlab/citydoctor/citydoctor2/-/releases
Source code: https://transfer.hft-stuttgart.de/gitlab/citydoctor/citydoctor2

CityDoctor2 - Introduction

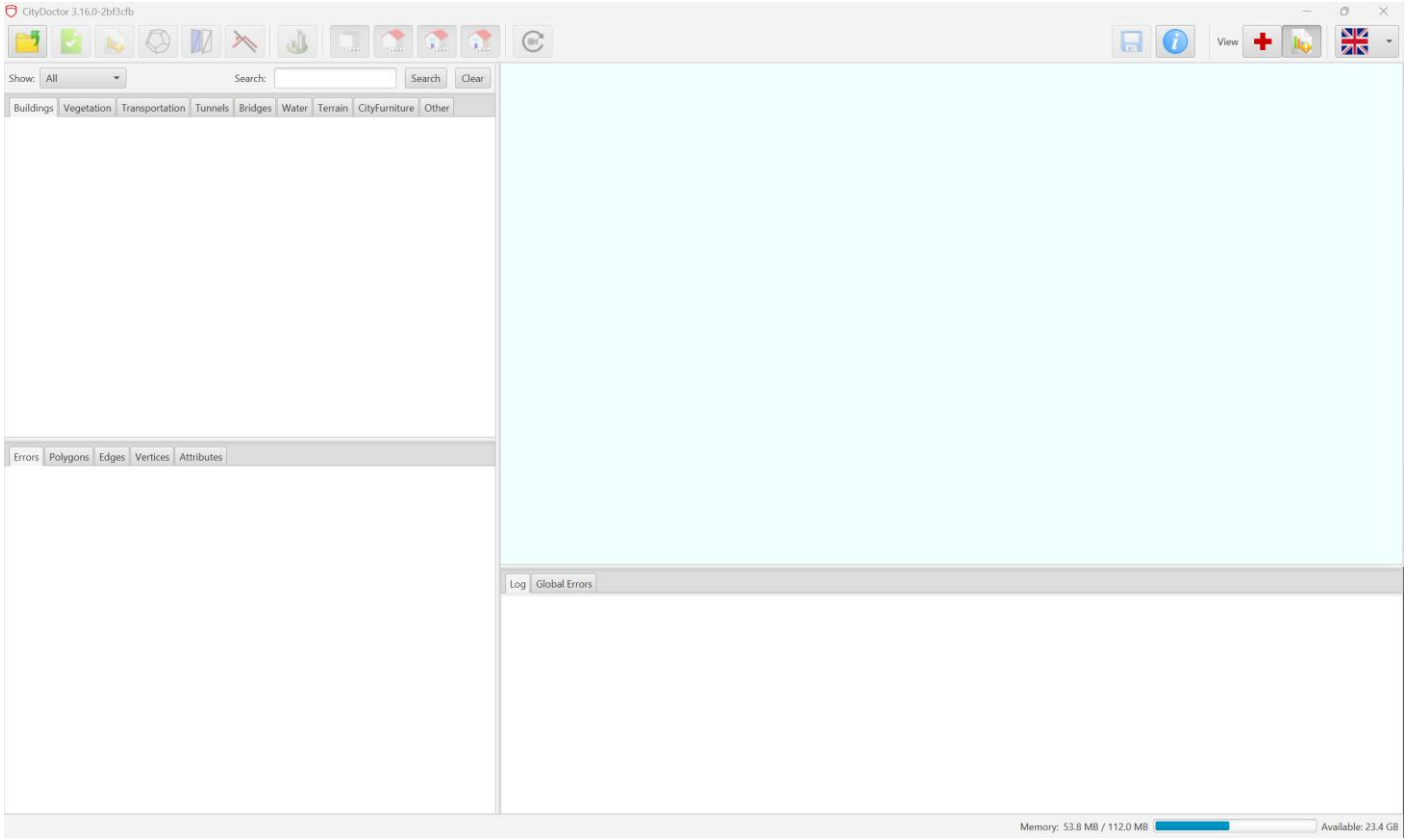
Procedure

Both error checking and repair should have a high degree of configurability to ensure control over the repair process.



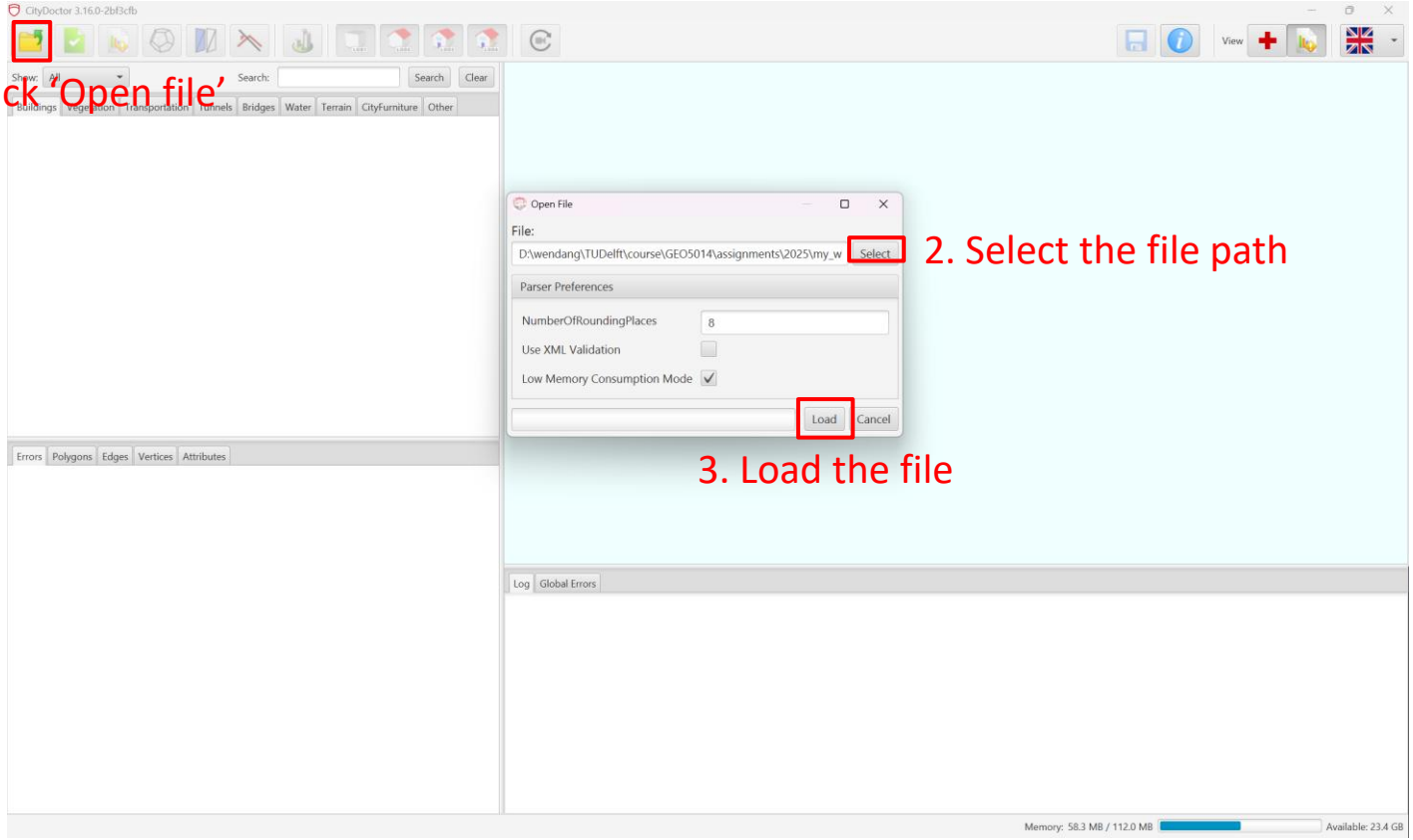
CityDoctor2 – Model Validation

In Windows, run **citydoctor2_healer.bat**



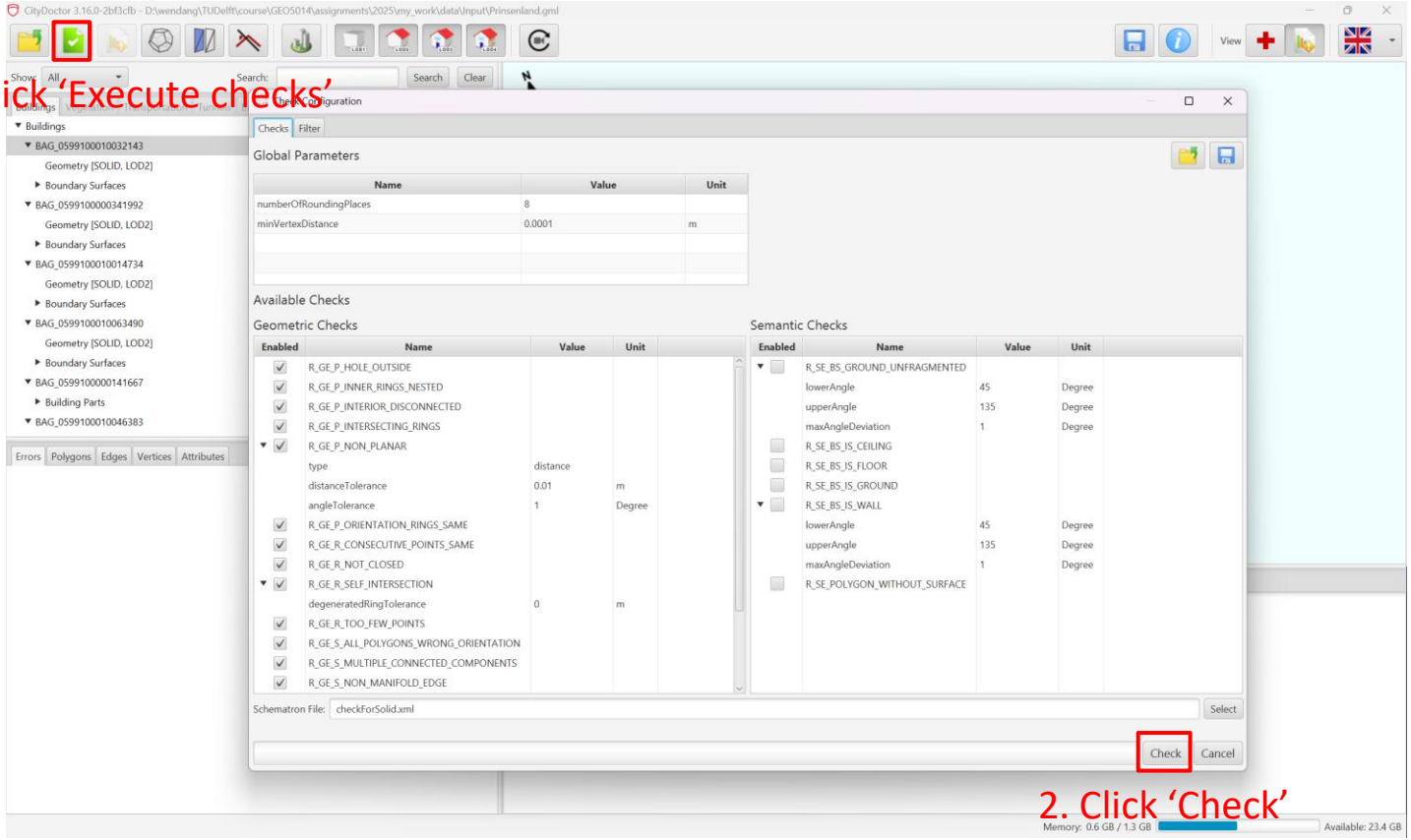
CityDoctor2 – Model Validation

Load the CityGML file



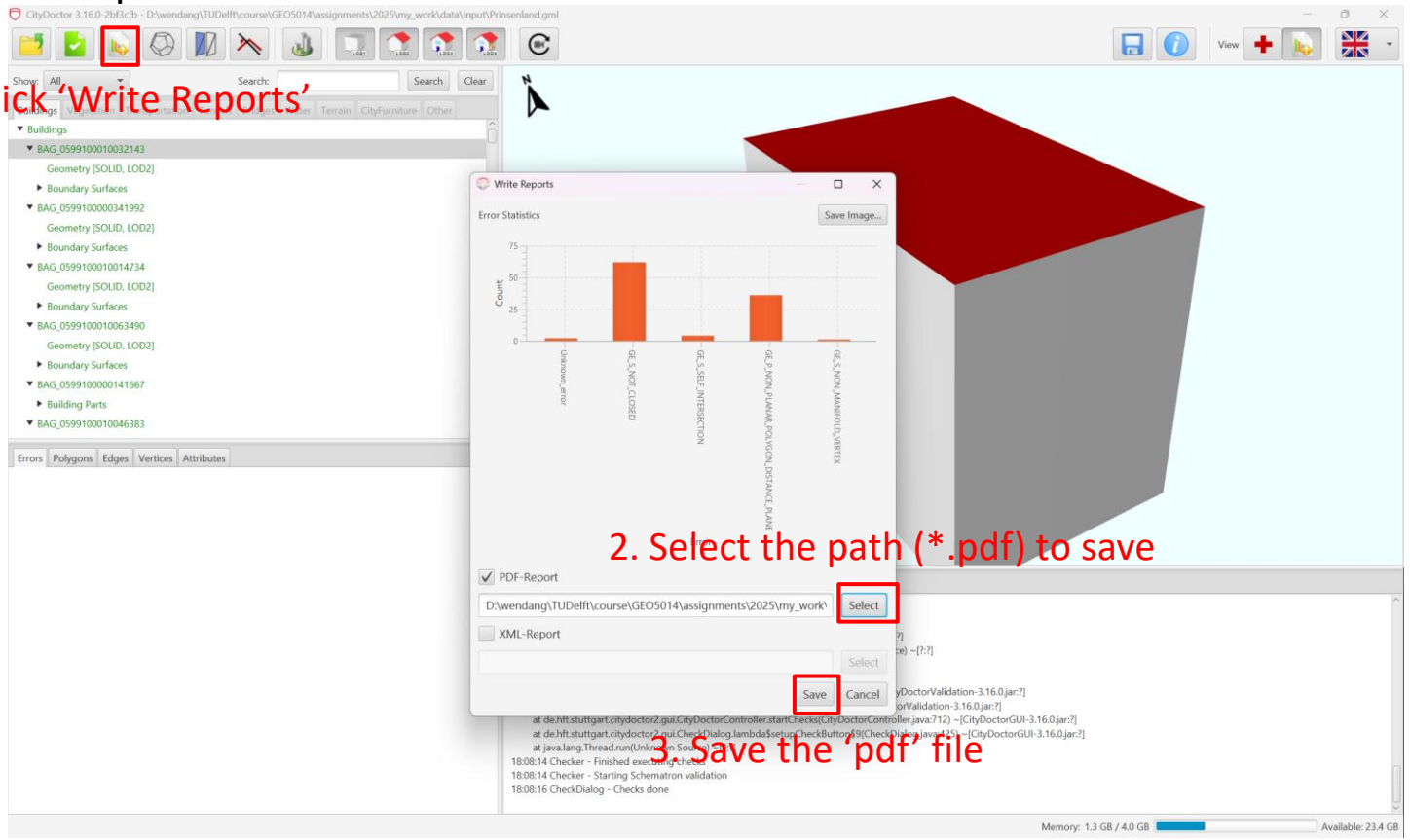
CityDoctor2 – Model Validation

Execute error checks



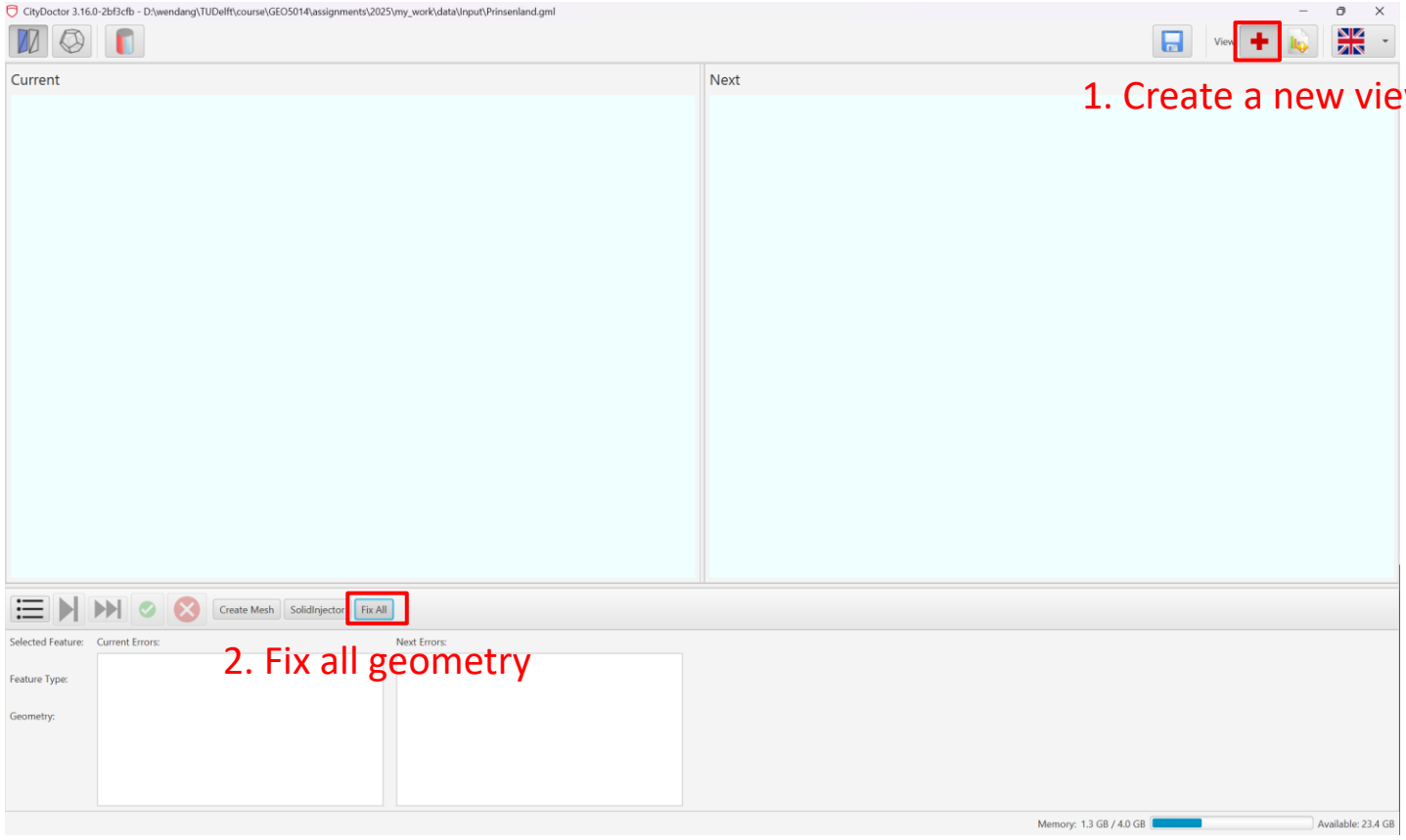
CityDoctor2 – Model Validation

Write reports



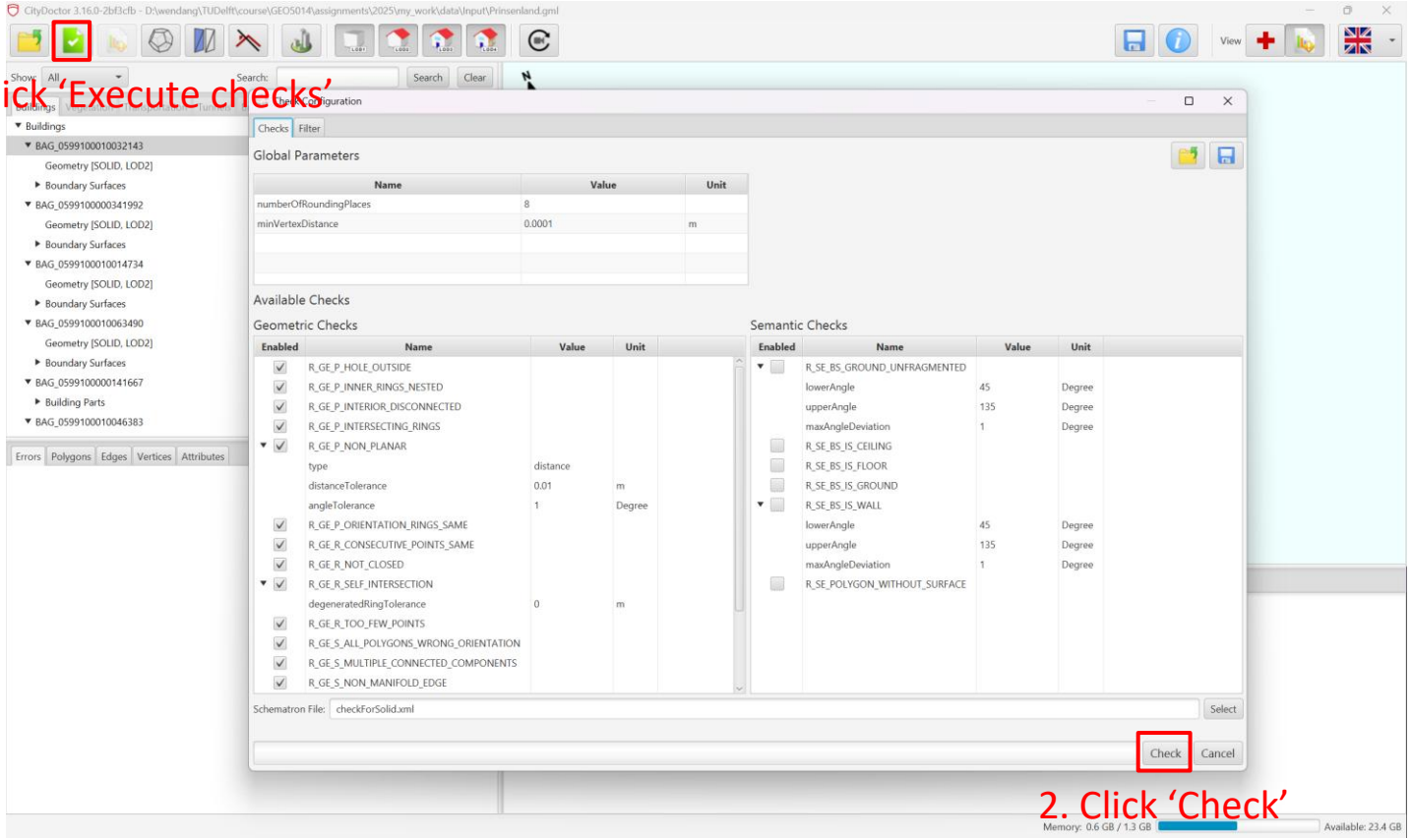
CityDoctor2 – Healing

Fix geometric errors



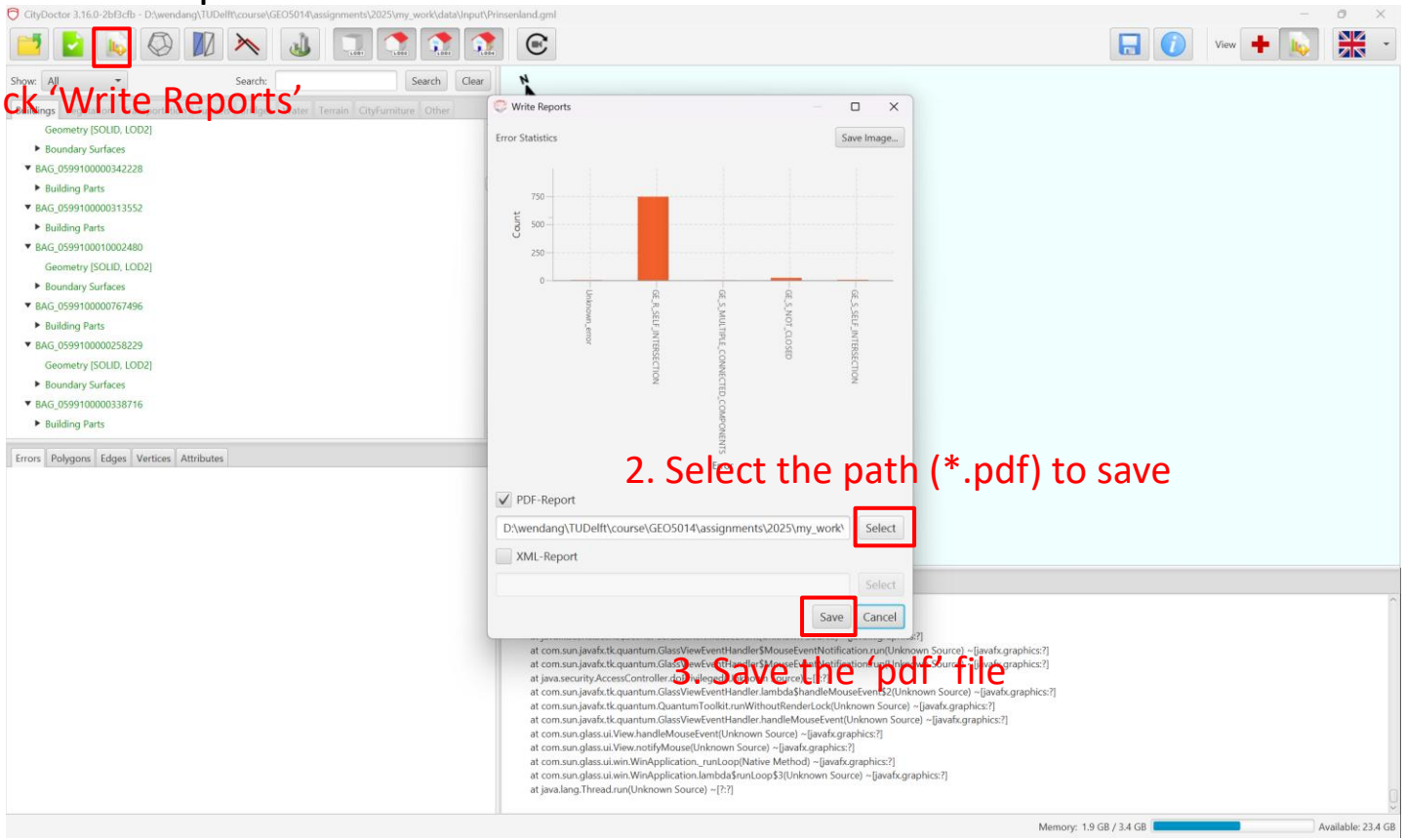
CityDoctor2 – Healing Validation

Execute error checks again



CityDoctor2 – Healing Validation

Write new reports



CityDoctor2 – Report Comparison

Introduction
Model Validation
Healing
Healing Validation
Report Comparison

Check reports and compare differences

Statistics

Object distribution:

Buildings (972):

Error Statistics:

- GE_R_SELF_INTERSECTION: 1
- GE_S_NOT_CLOSED: 19
- GE_S_SELF_INTERSECTION: 3
- GE_P_NON_PLANAR_POLYGON_DISTANCE_PLANE: 35
- GE_S_NON_MANIFOLD_EDGE: 2

Statistics

Object distribution:

Buildings (972):

Error Statistics:

- GE_R_SELF_INTERSECTION: 254
- GE_S_NOT_CLOSED: 2
- GE_S_SELF_INTERSECTION: 4
- GE_P_INTERSECTING_RINGS: 1
- GE_P_NON_PLANAR_POLYGON_DISTANCE_PLANE: 1

Check Report

For File: Prinsenland.gml

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Thank you for your attention!

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