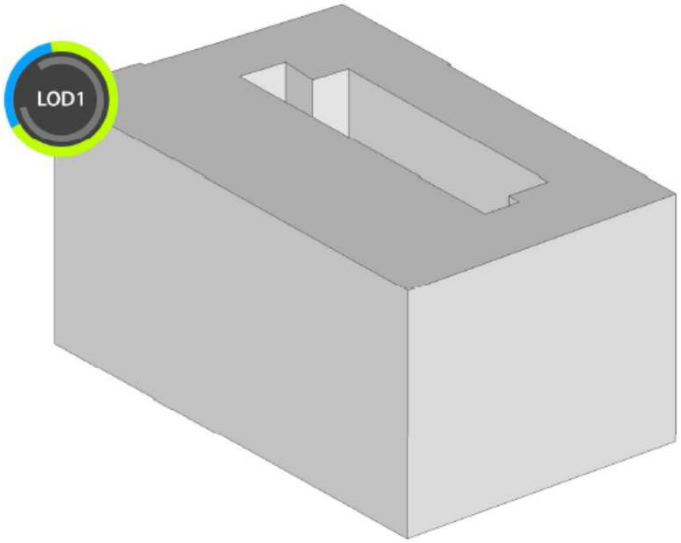
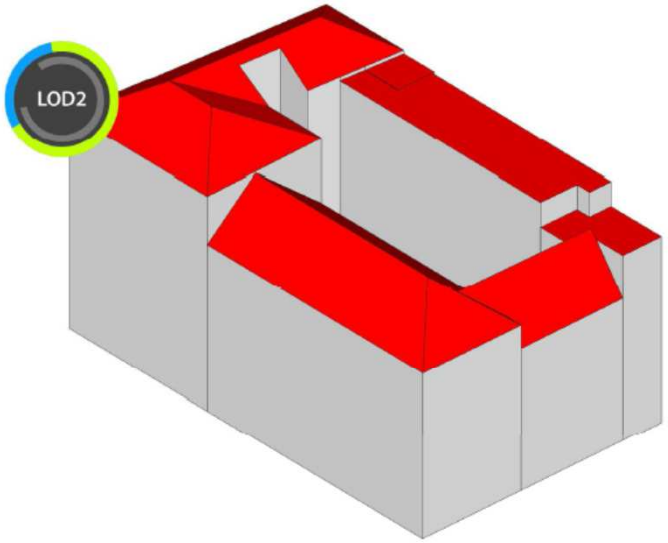
Hochschule für Technik Stuttgart

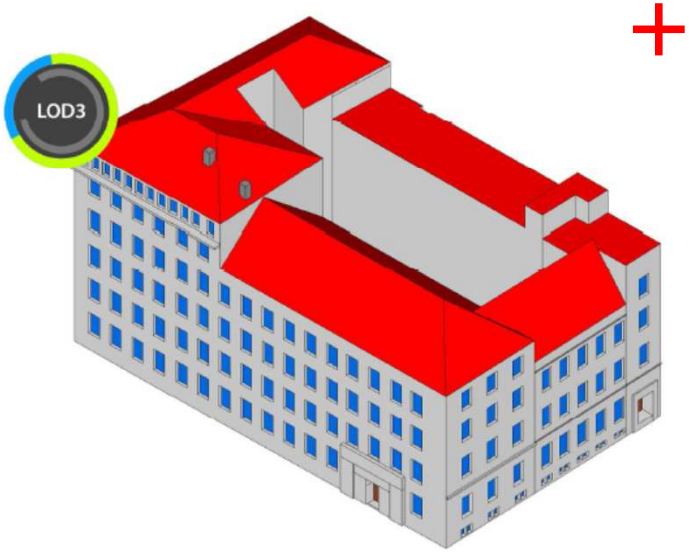
SimStadt

New Urban Energy Simulation Platform based on CityGML + Energy ADE

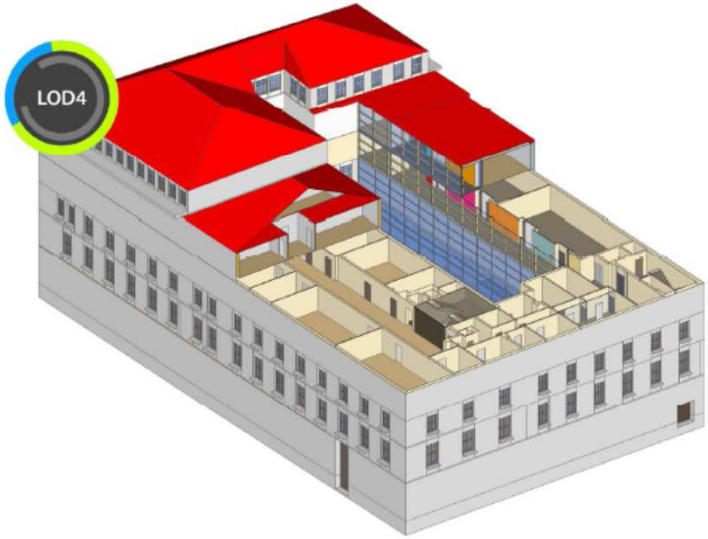
Based on CityGML - handle different Level of Details





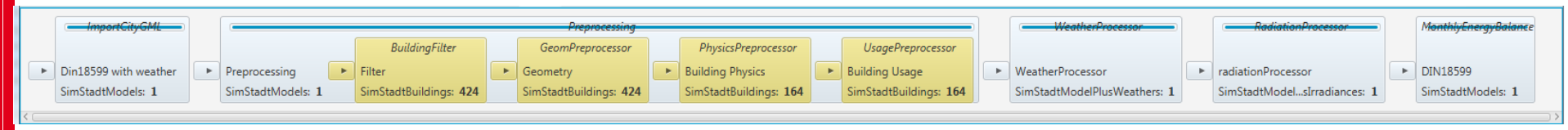


+ ...



4 Level of Details von CityGML

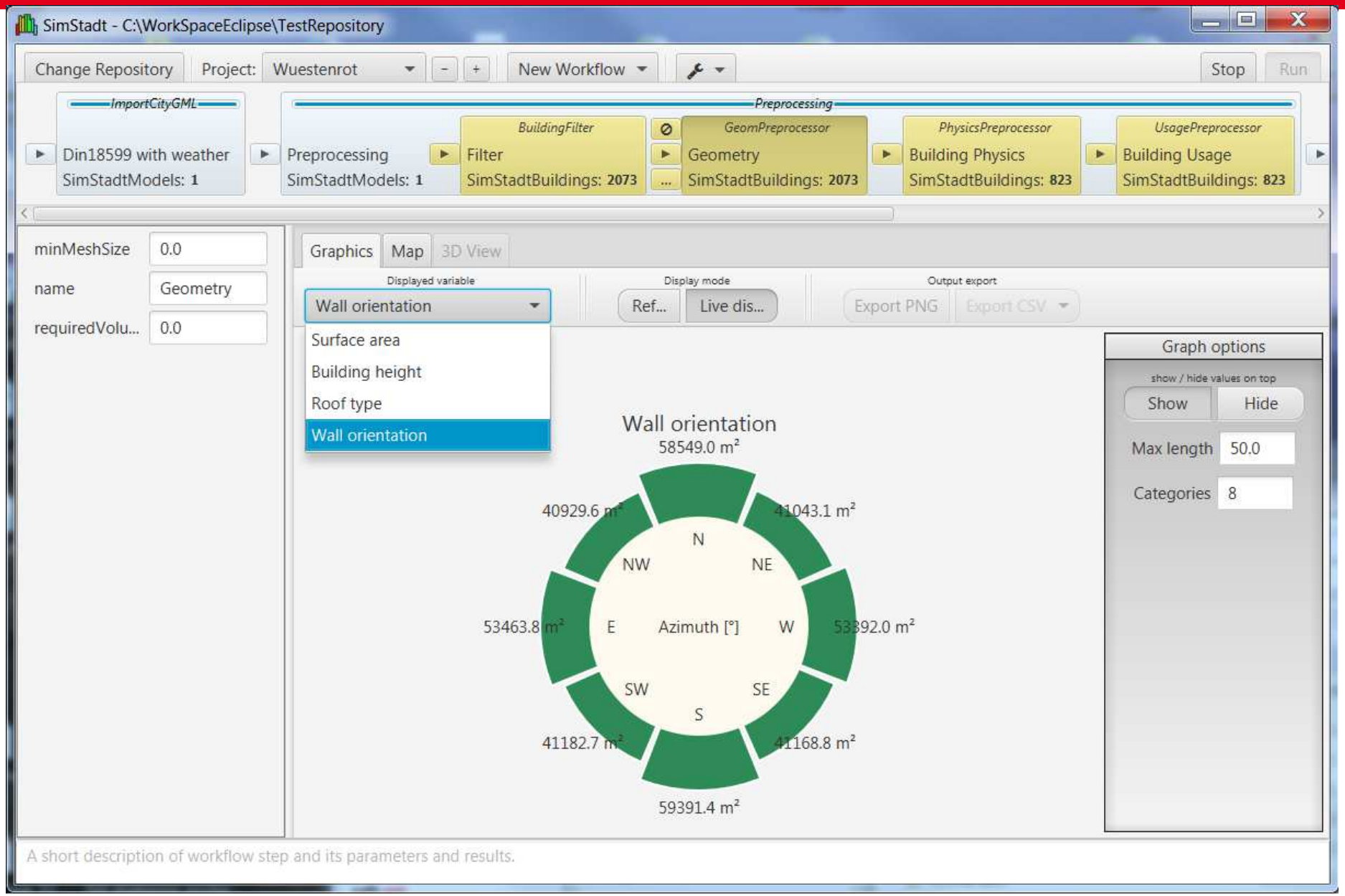
Modular structure, based on Workflows and Workflowsteps



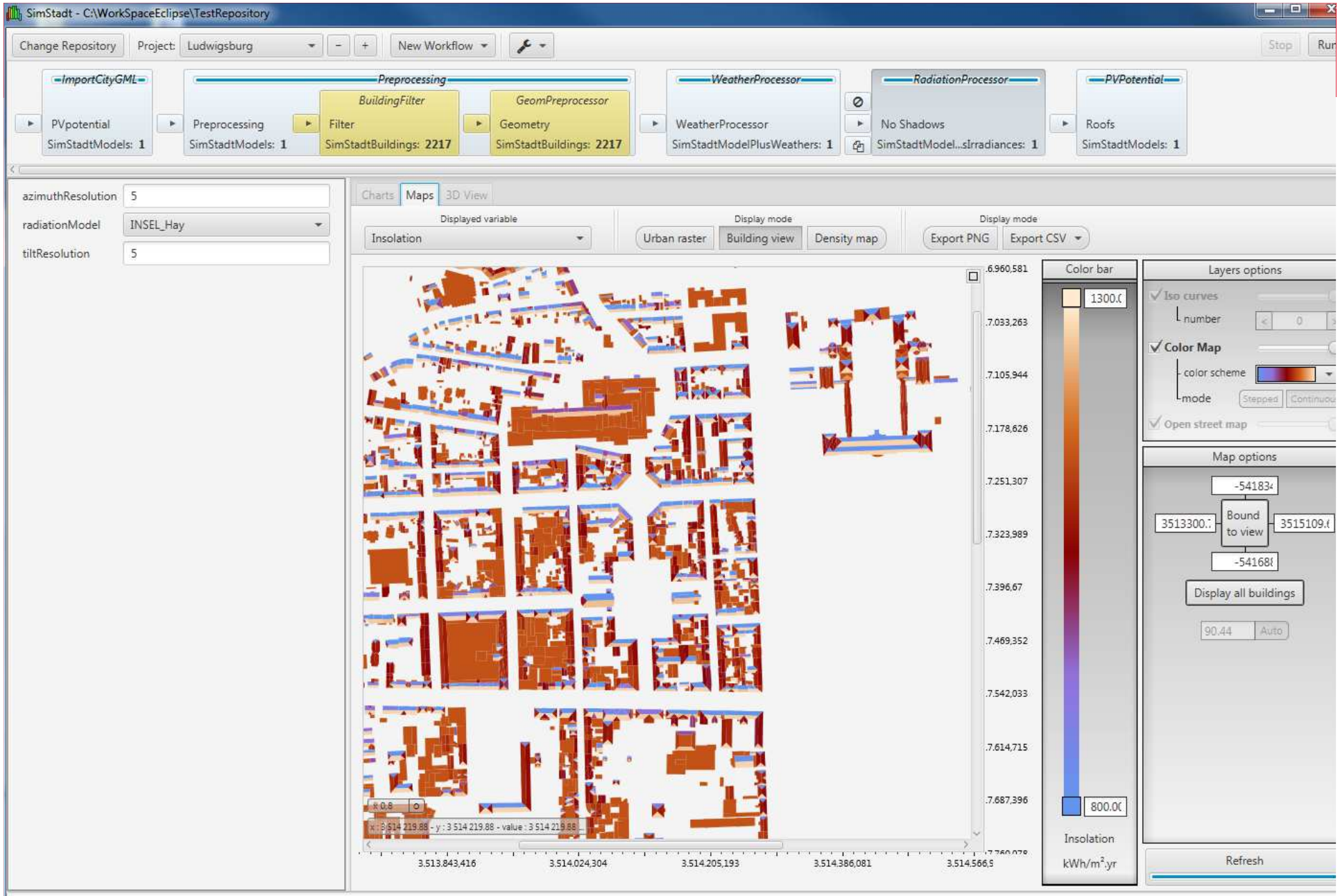
Implemented workflows:

- Heating demand calculation based on monthly energy balance
- Solar and PV potential analysis
- Global CO2 emission analysis
- Refurbishment scenarii generation and simulation

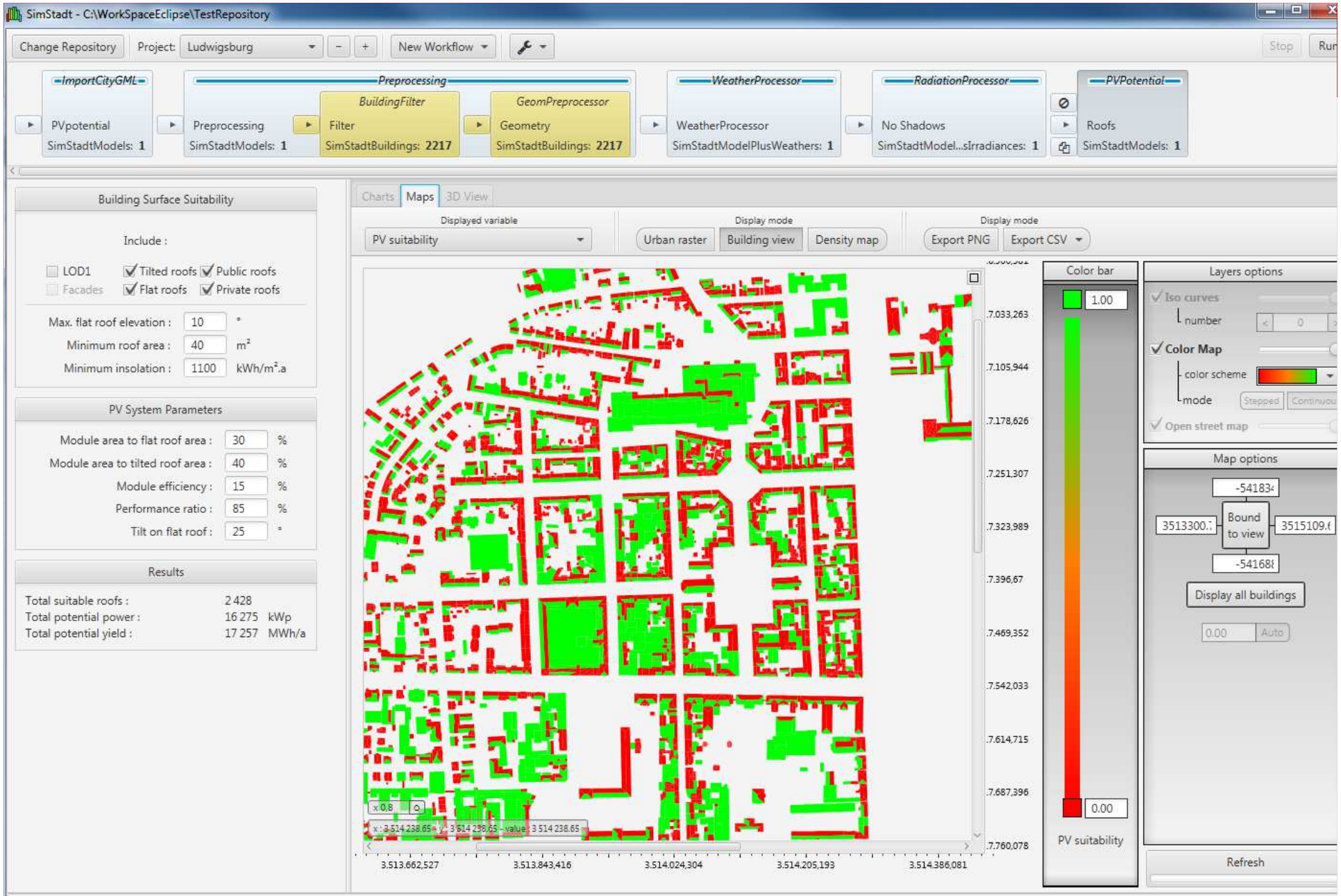
Analyse at each step of the Workflows



Screenshot - SimStadt

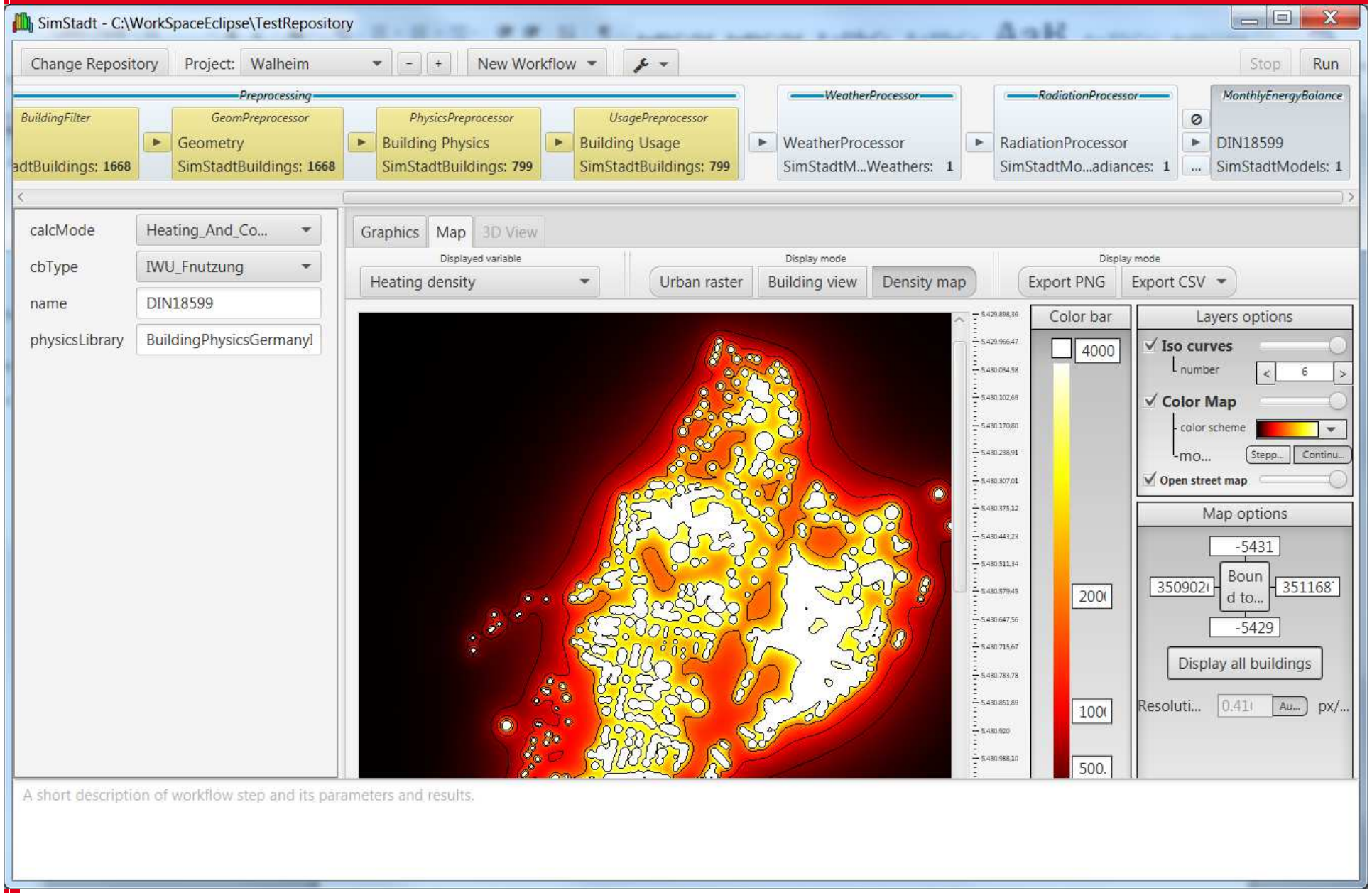


Screenshot - SimStadt



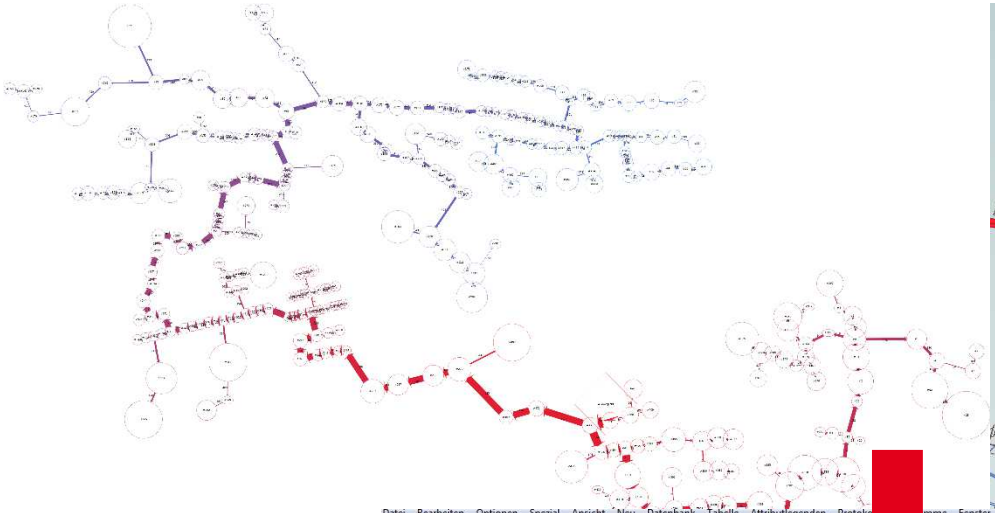
Screenshot - SimStadt

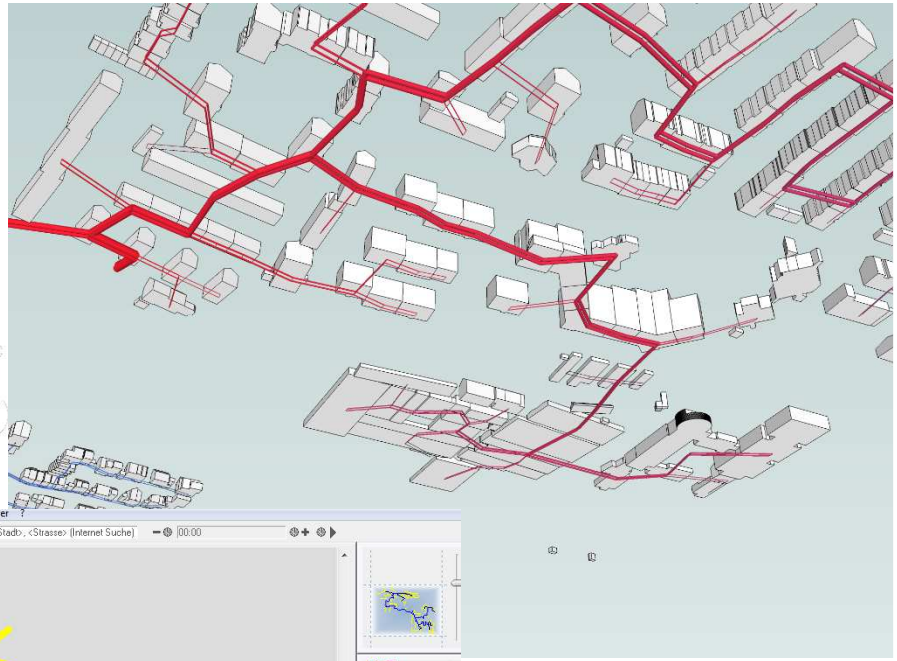
Heat density map

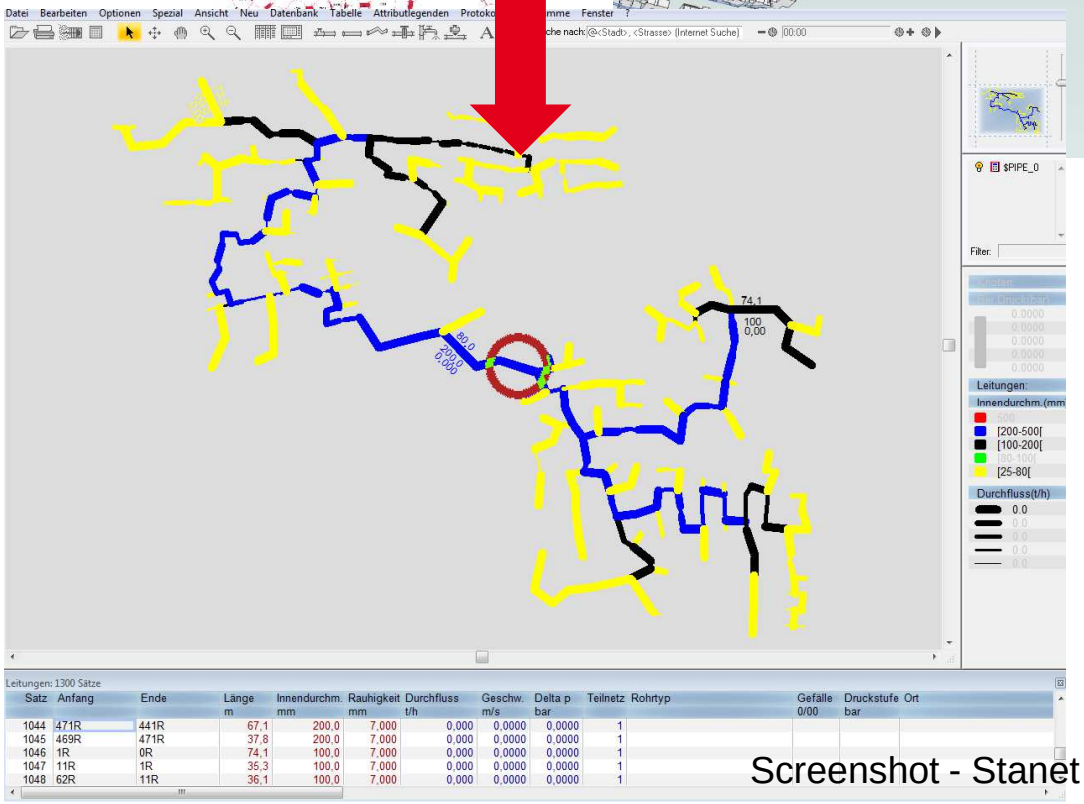


Screenshot - SimStadt

District network – Optimal layout and sizing

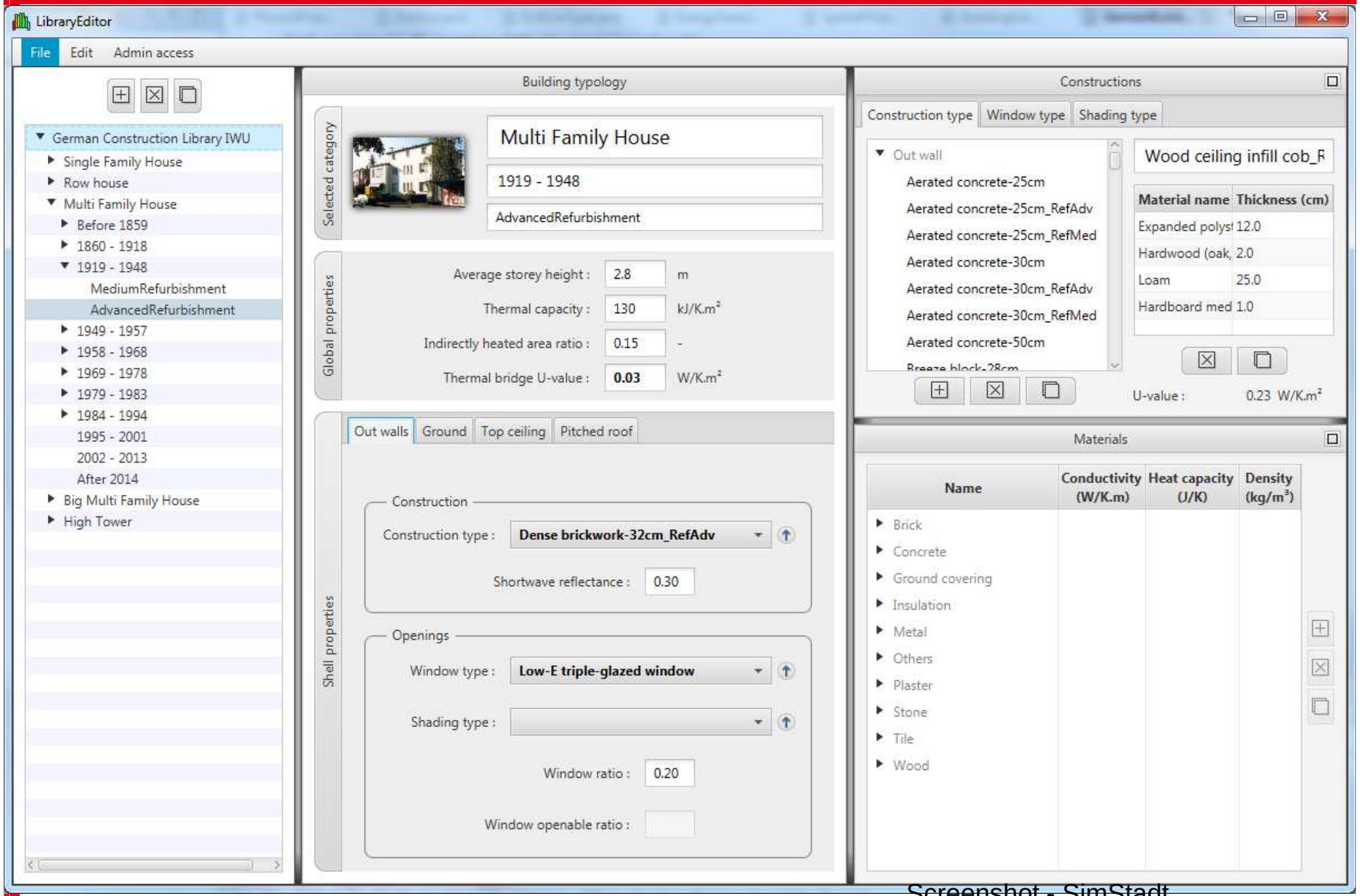






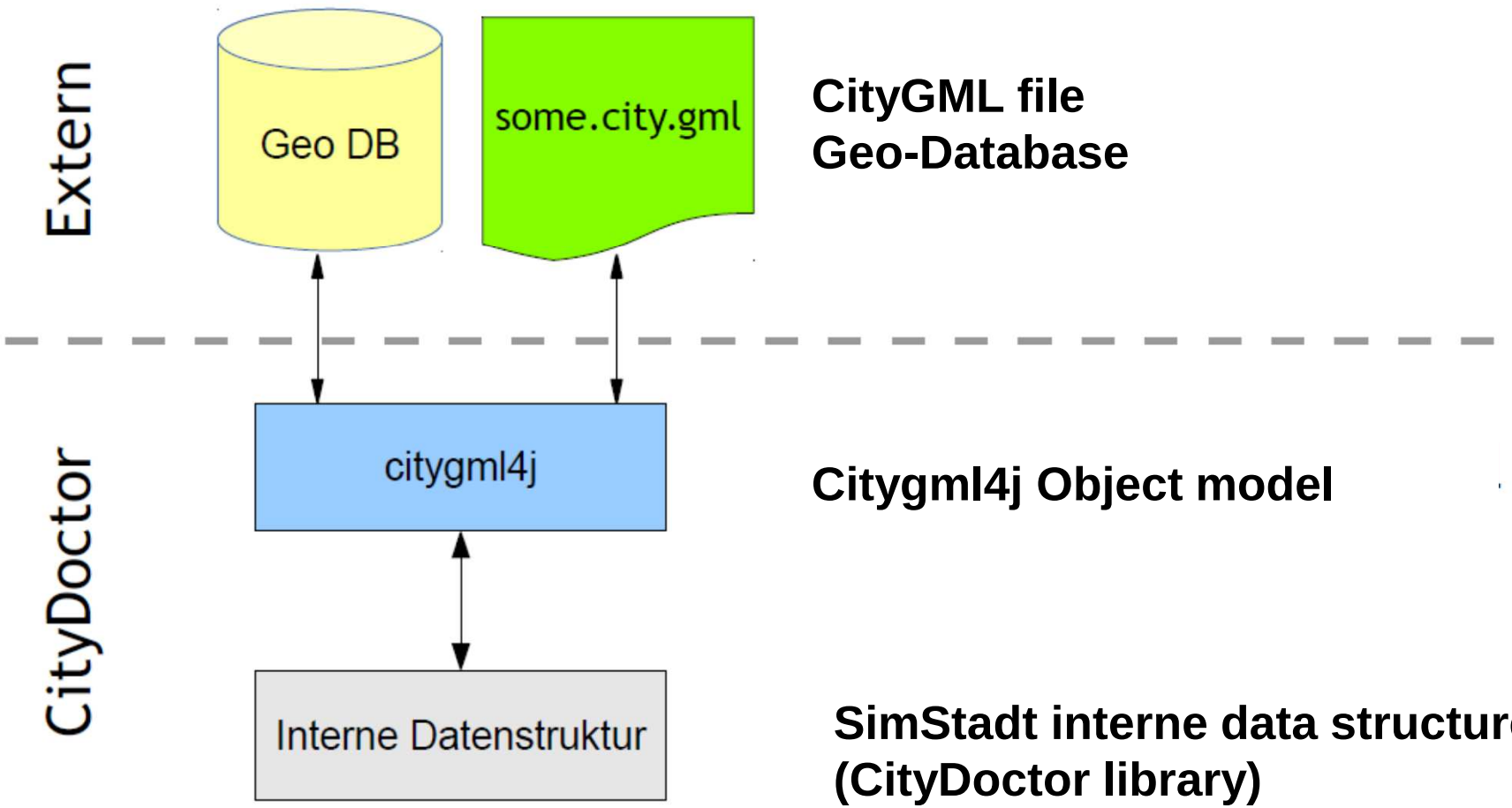
Screenshot - Stanet

Data preprocessing with Building Libraries



Screenshot - SimStadt

Data structure



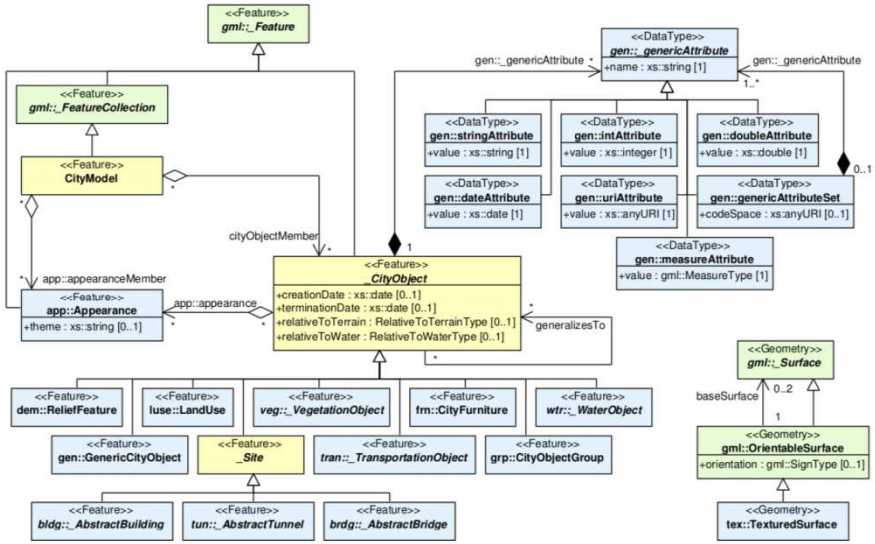
CityGML file
Geo-Database

Citygml4j Object model

SimStadt interne data structure
(CityDoctor library)

Java, citygml4j, ADEs

- **SimStadt/CityDoctor** reads and stores the city model via the java library **citygml4j**
- **Citygml4j** parses all **ADE**-specific tags as DOM nodes
- **Java class-model** is generated from the CityGML+ADE Definition schema by means of **JAXB**



Quelle: Open Geospatial Consortium, Inc; 2012, [1]