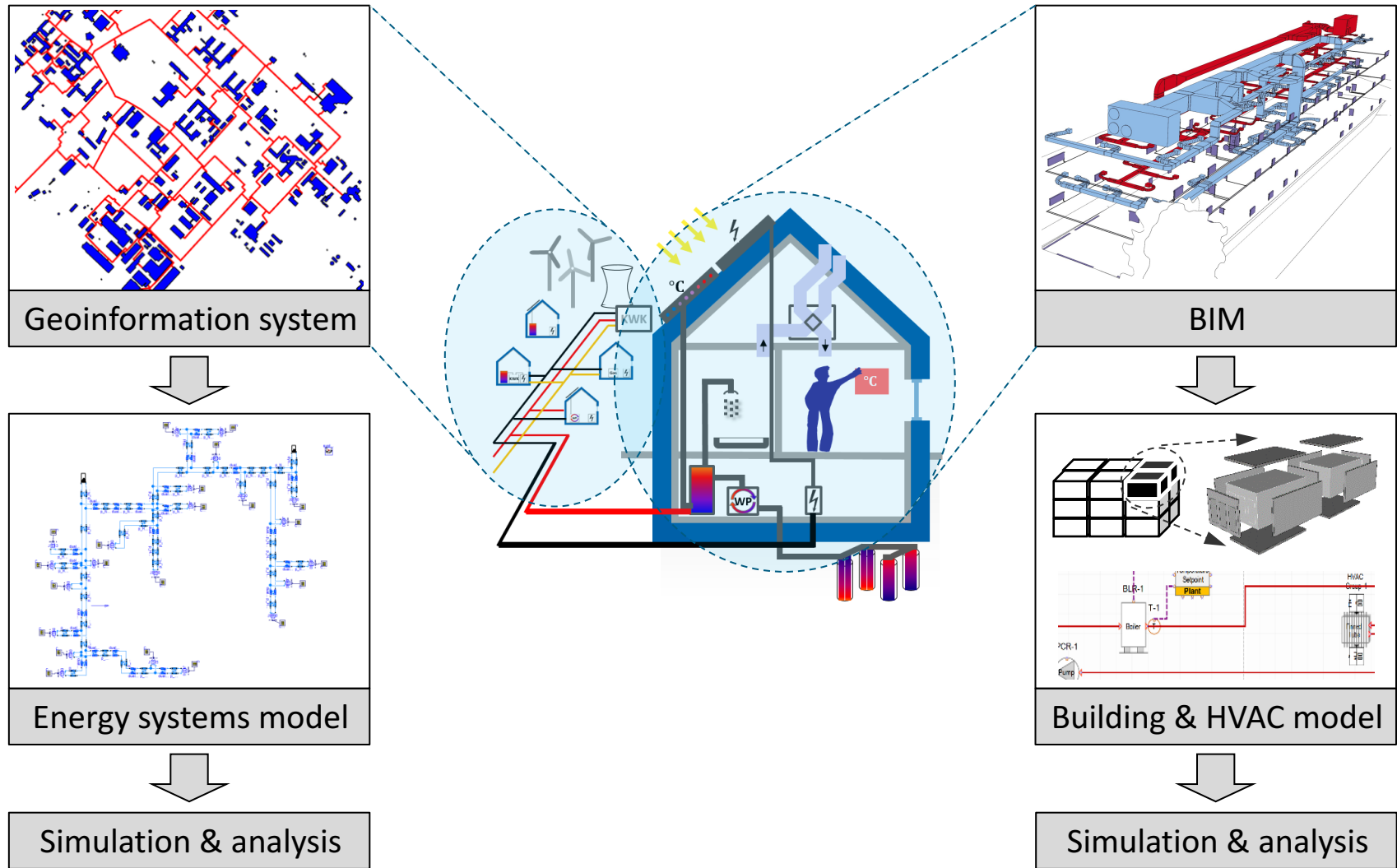


## Building and City Quarter Models

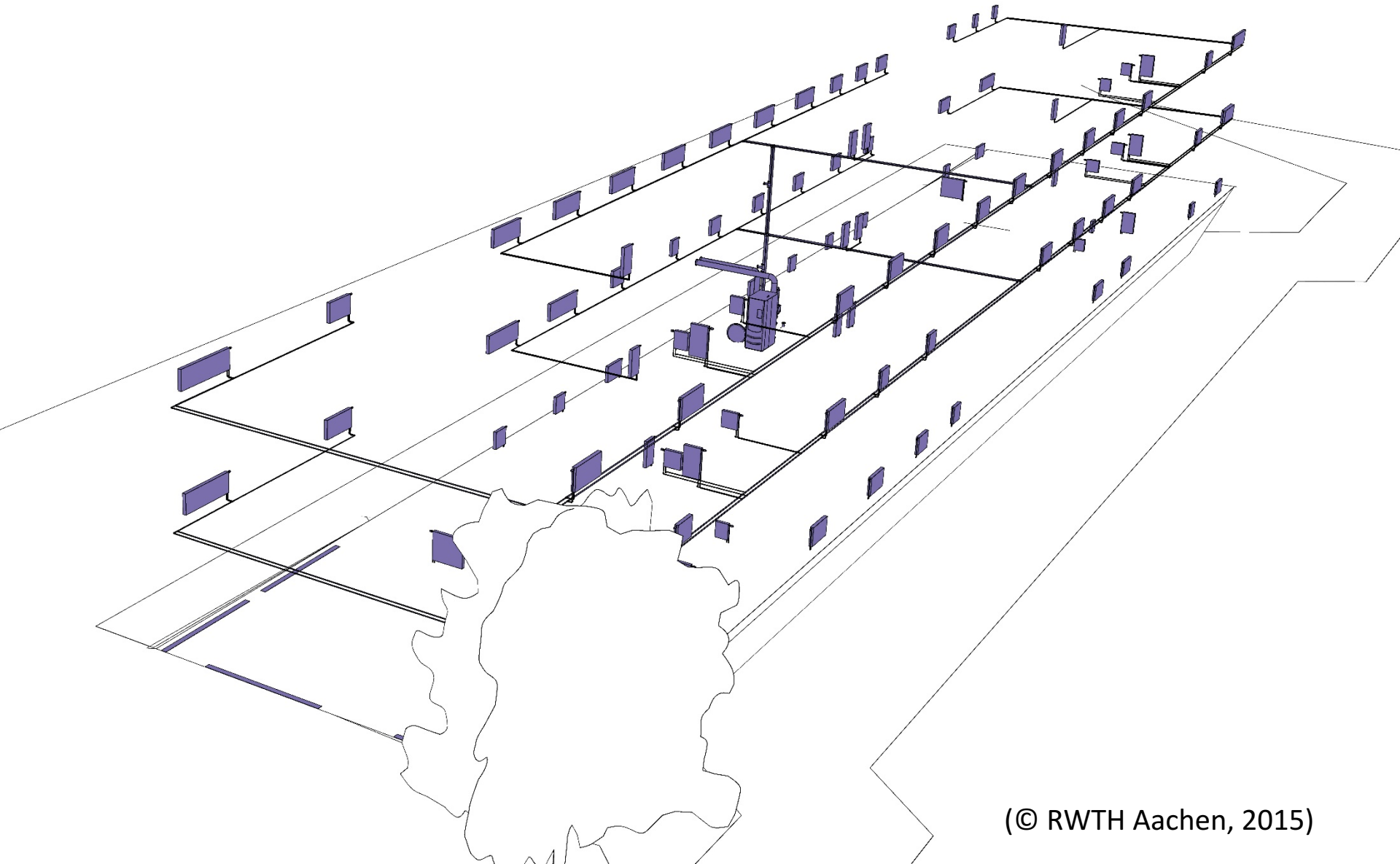
- free open-source GIS/BIM data model to Modelica translators for individual building and community energy systems
- emphasis placed on the district and building model to Modelica transformation process
- dedicated to continuing BIM-oriented developments
- use of existing standards for exchanging energy calculation data, extending standards such as CityGML as appropriate

Will facilitate the construction of whole building and district Modelica models, it will integrate energy performance simulation, especially with respect to Modelica, with the developments of BIM/GIS-based tools that are ongoing outside of this project, and provide a path for a next-generation modeling that also specifies control sequences.

# Digital planning and simulation | Multi-scales and levels

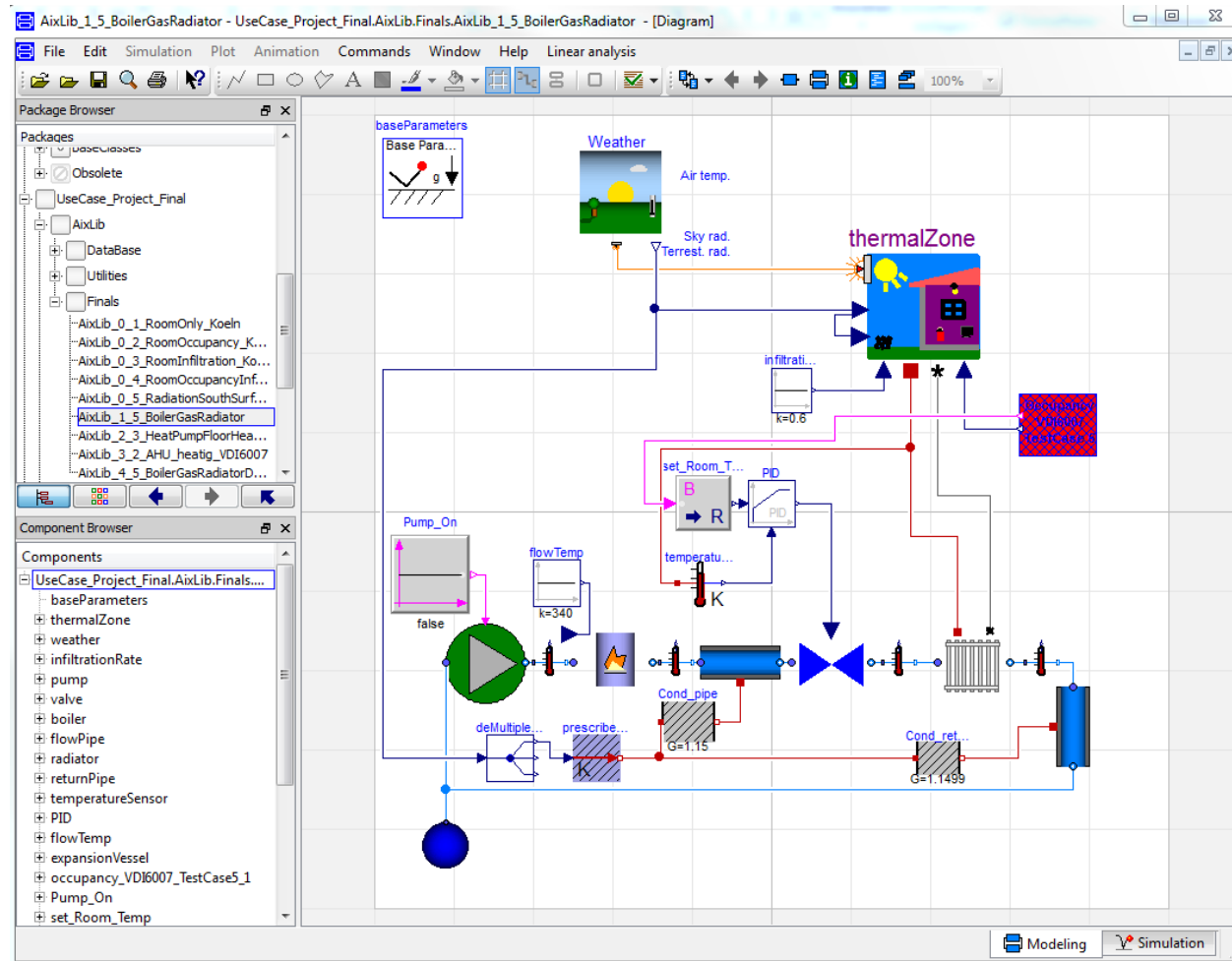


# BIM | HVAC modeling & simulation



(© RWTH Aachen, 2015)

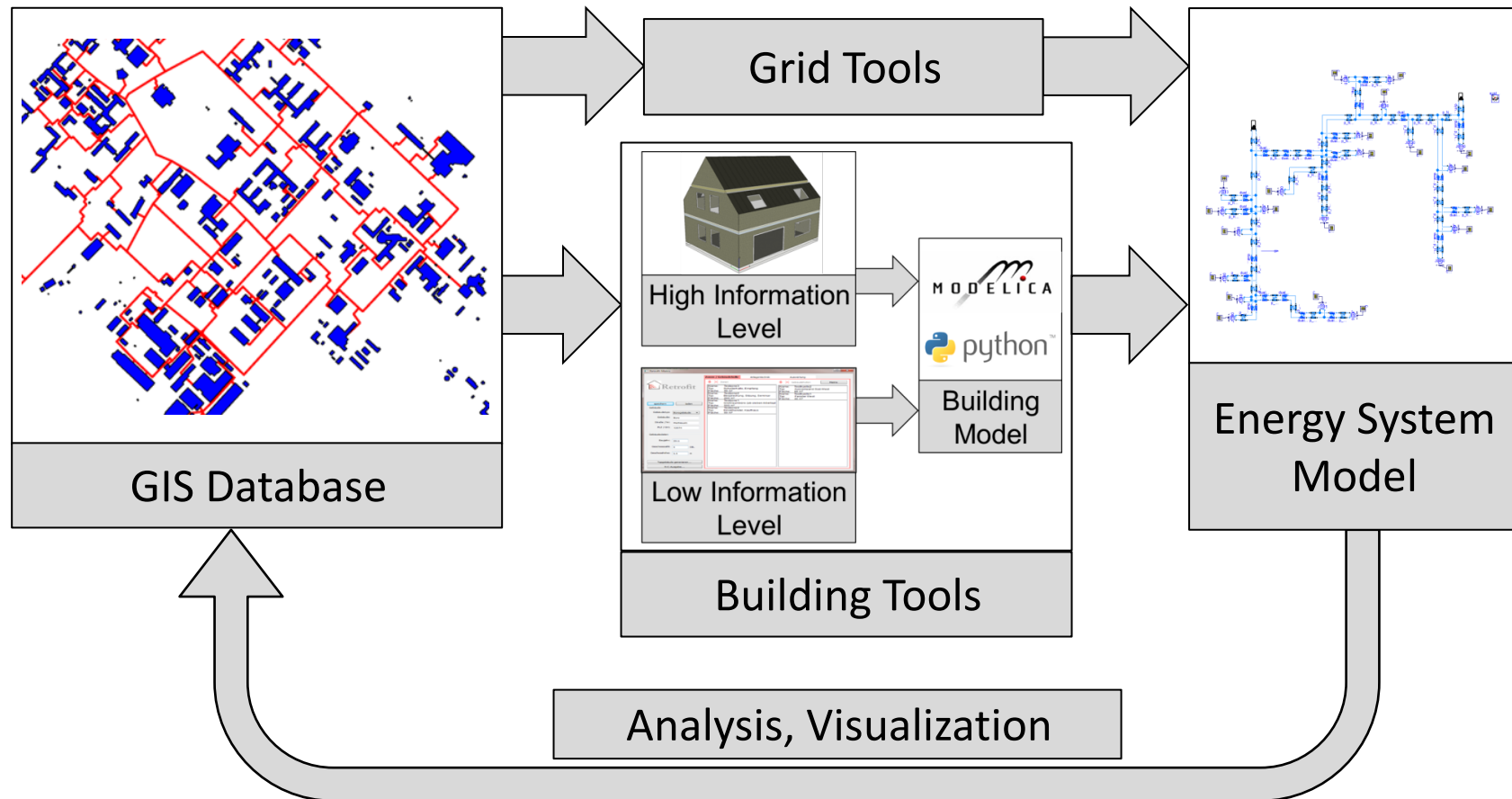
# Example | Use Case Boiler & Gas Radiator AixLib (RWTH Aachen)





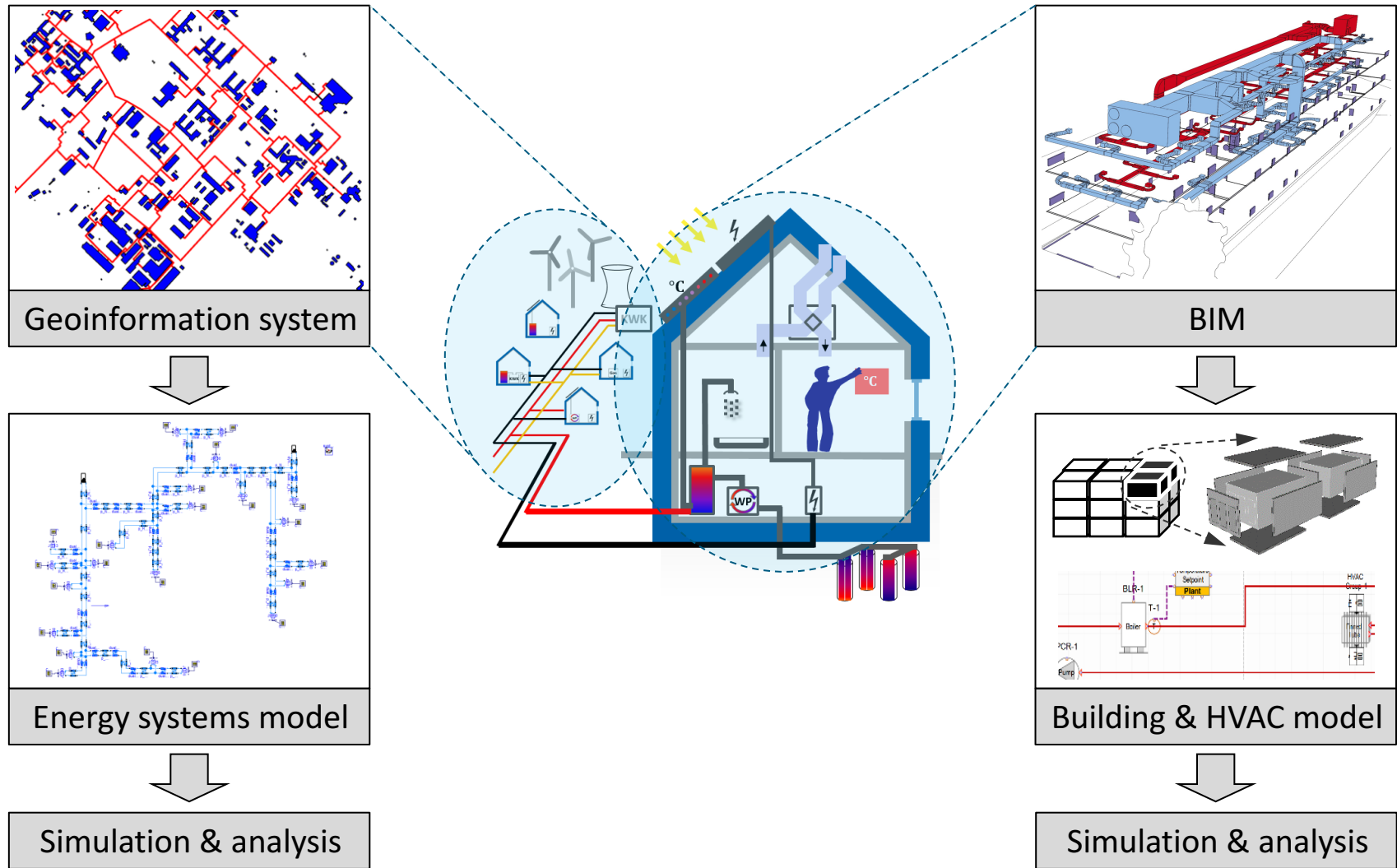
# Multi-scale and multi-level simulation

## EnEff:Campus Roadmap RWTH Aachen (2015 – 2017)



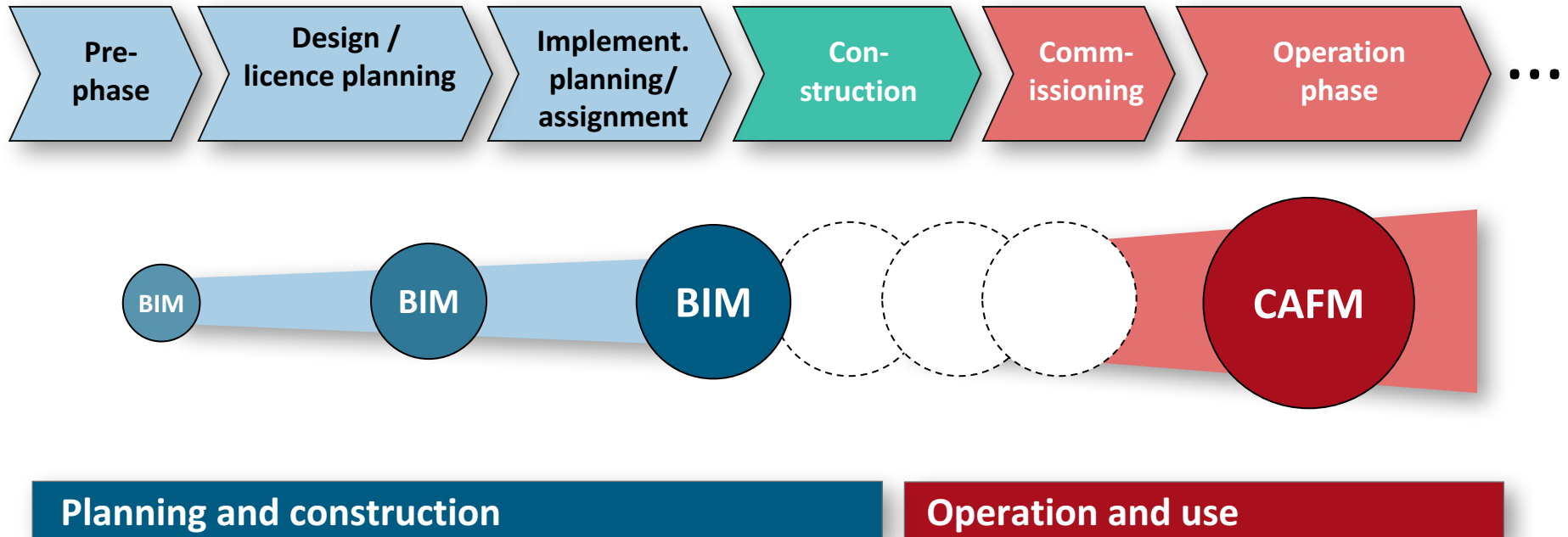
Picture source: D. Müller, R. Streblow, M. Lauster, E.ON ERC, RWTH Aachen (2015)

# Digital planning and simulation | Multi-scales and levels



# BIM within Building Lifecycle

- Planning, design, construction, commissioning, operation, ...

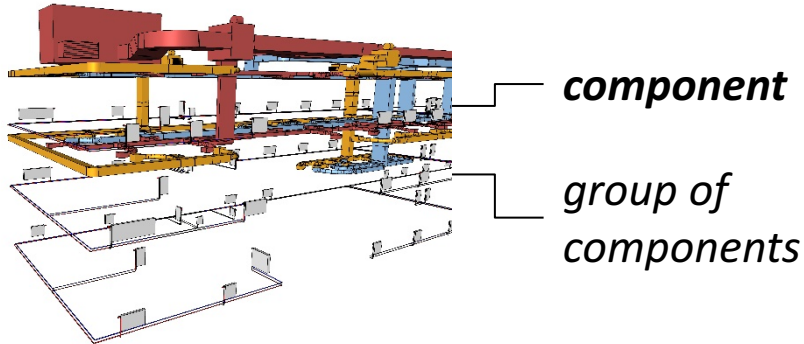


Picture source: Gebäude.Technik.Digital. Building Information Modeling. C. van Treeck et al. ; Springer Verlag, 2016.

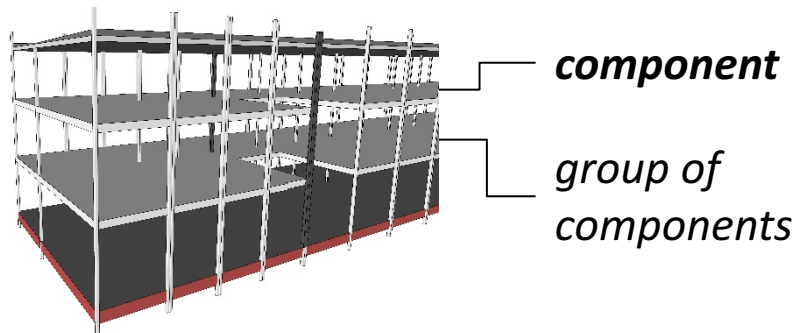


# Communication problem within integral planning

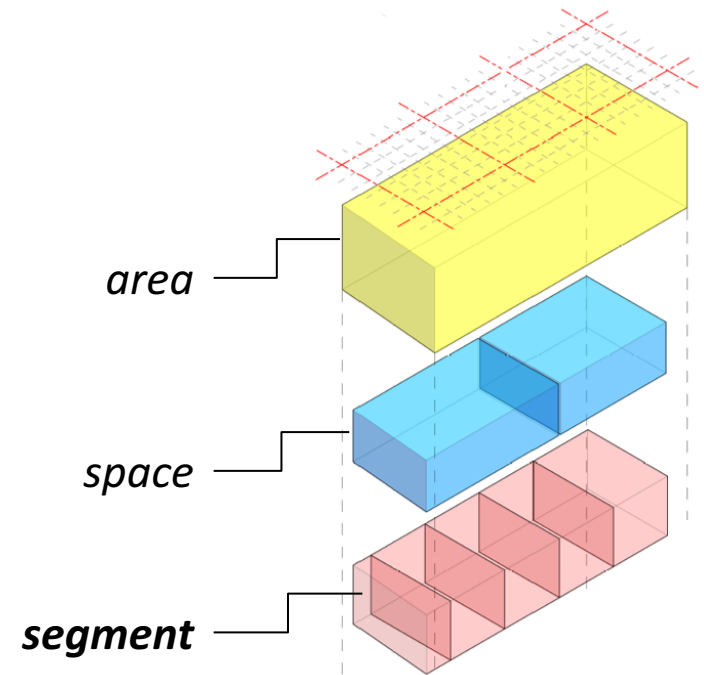
## HVAC domain



## Construction domain



## Automation/controls domain





## Building and City Quarter Models

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