TRNSYS 18 - TRNLizard

Free plug-in for Rhinoceros/Grasshopper for parametric 3D building simulation

TRNLizard is a free plug in to the Rhinoceros 5 software and its editor Grasshopper. It enables thermal and daylight building simulation with Trnsys 18 using a variety of artificial lighting, ventilation, heating and cooling concepts based on detailed 3D geometry.

The parametric architecture and open source enable the user to conduct detailed design studies during the planning phase and respectively individualize the model. Predefined templates and outputs allow quick start simulations and a fast evaluation of simulation results.

The tool has a modular structure and gives great flexibility. The components are and will be adapted to the development of Trnsys and have a variety of new features. Models are fully defined in Grasshopper and then written as complete TRNSYS-models in the project directory.

TRNLizard connects the power of parametric modeling in Grasshopper and the latest building simulation features of Trnsys!

The most important features of TRNLizard are:

- input of 3D model information in Grasshopper / Rhinoceros
- zones with multiple air nodes (atrium, double façade)
- complex shading from adjacent buildings
- regime definitions (heating, cooling, ventilation, etc.) can be assigned to multiple air nodes
- definition of daylight grid for daylight simulation
- definition of comfort grid for comfort evaluation
- visualization of 3D-building models with model information
- display of selected simulation results in 3D
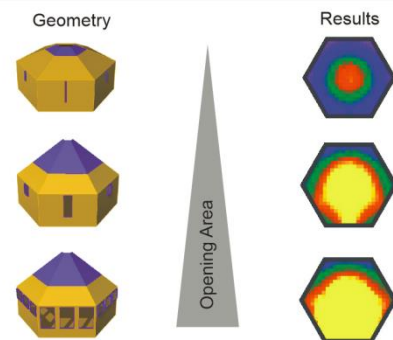- individual output of model information in the online plotter and printer

Mulitzone model
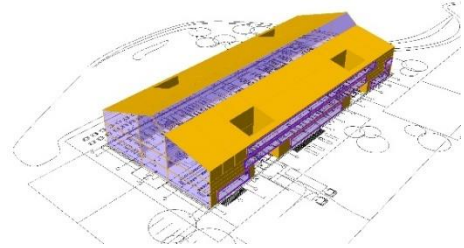
Parametric model definition
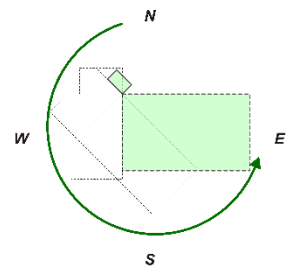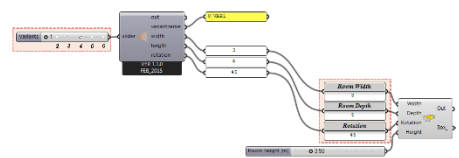
Representation of daylight and geometry

Display of results