IBPSA Project 1

Modelica Buildings library

Michael Wetter

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Lawrence Berkeley National Laboratory

Current activities

Spawn of EnergyPlus

- First released as part of Modelica Buildings Library 8.0.0

District heating and cooling

- Template models for URBANopt (Modelica edition)
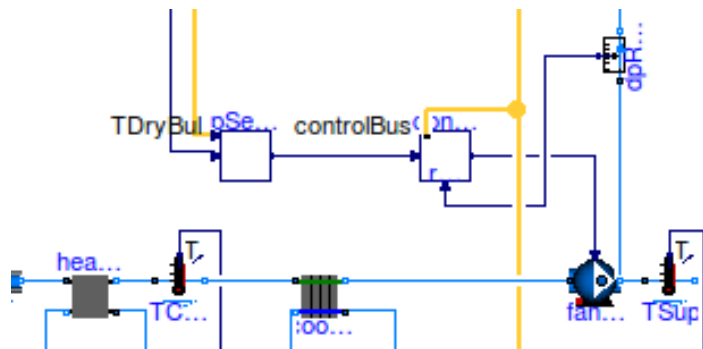
OpenBuildingControl

- Control description language CDL
  - Reviewed through ASHRAE Standard 231P (CDL)
- Ongoing
  - Update ASHRAE Guideline 36 to official guideline
  - Implement boiler and chiller plant sequences from ASHRAE RP 1711
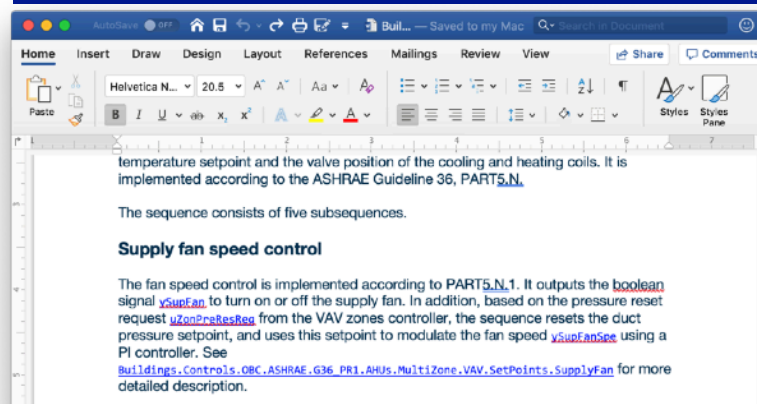 - Template models for HVAC systems and controls

Export to BRICK prototyped through modelica-json
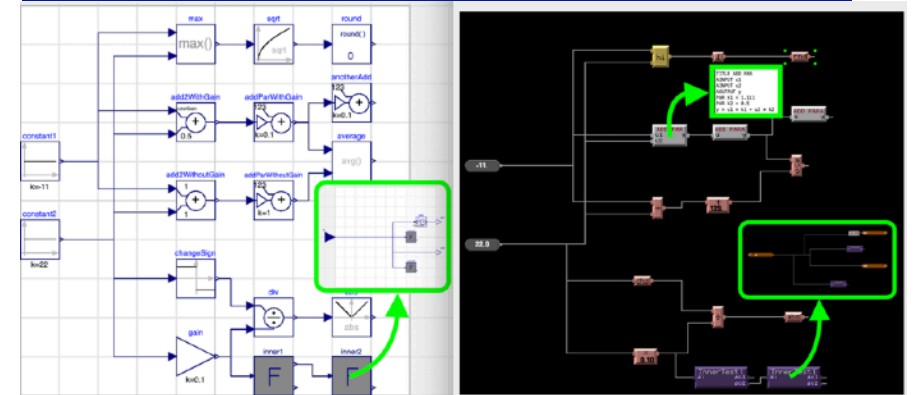

CDL control sequence

Energy simulation

Documentation

Physical execution

Major new models (other than those that were added in IBPSA)

Release 8.1.0 (December 2021)

- BoilerTable: Boiler model with efficiency specified by table.

- BoundaryConditions.GroundTemperature: Climate conditions for undisturbed ground.

- OBC.RadiantSystem: Controller for radiant slabs (heating and cooling).

- DHC.Plants.Cooling: Chiller plant for district cooling.

Master branch (for 9.0.0 release)

- Geothermal.BuriedPipes: Ground coupling of pipes with steady-state ground heat transfer.

- CDL: Various new blocks based for ASHRAE Standard 231P.

- Storage.Ice: Ice tank model based on performance curve.

Current activities

Modeling

- Templates for HVAC systems (buildings and districts, including controls)

- Steam heating systems

- Spawn of EnergyPlus

Solver

- QSS

Tools

- Linkage - control sequence selection and configuration tool

- Work on coverage with OpenModelica