About

The Straylight Simulation Client is program that you can install on your computer which allows you to run an energy simulation. The program was written for the Learn High Performance Buildings project. It comes bundled with an energy simulation created by a team at Lawrence Berkeley National Labs. The simulation was written using the Modelica modeling language

<http://en.wikipedia.org/wiki/Modelica>

It uses that Modelica Library for Building Energy and Control Systems

<http://simulationresearch.lbl.gov/modelica>

This energy systems model was published as a Functional Mockup Unit and has used the FMI standard for cosimulation.

<http://www.qtronic.de/en/index_news_10_1_fmi.html>

Install

Download

<https://github.com/rajdye/straylight/downloads>

Double click the downloaded file and you will launch the installer. If you don’t have the latest version of Java, then you will be guided through and install process of the latest Java Runtime Environment.

The application is a 32 bit program, so if you have a 64 bit Operating System then it will install in “c:\Program Files (x86)” folder. Accept all the defaults and finish the installation. You will then have a shortcut on your desktop. Double click it to launch the program.

Startup

When you start the application it takes a minute or so to parse the FMU and initialize the simulation. While this is happening, you will just see and empty debug panel. After some time, other panels will appear and the buttons on the toolbar will become enabled.

Layout

Configuration

The second panel is labeled “Configuration” This allows you to configure the simulation before you run it. In this example the default start time is 28000 seconds after midnight, or 7:46 AM. The step delta is set for one second. The stop time is set for 86400 seconds after midnight, or 12:00 AM.

Input Form

The input form tab shows a table of all the input variables. Press the “Step” button once to see the ‘value’ column populate.

Input Detail

The input detail tab allows you to make changes to the input variables. The Submit button is disabled until you enter a valid value in the text box or move the slider. When the submit button becomes enabled, then you can make changes to the variable.

Results Form

This tab shows the results of the most recent time step. The number in the “value” column will change as you step through or run the simulation.

Results Table

This shows all the result from every time step. This table will add a new row to the bottom every time a time step completes.

Internal Table

This is for debugging onle