SYS-6581 Principles of Modeling for Cyber-Physical Systems

Alan Wang

December 16, 2018

3 Energy Plus and Model Parameters

3.1 Assign nominal values to model parameters

(a) Ok. Submitted the construction.m file

(b) Also submited the nominal.csv

names	values	descriptions
1/(Abk*Roair)	0.00127347978350844	thermal convection external air
Re	0.00593800374055182	thermal conduction external
1/(Abk*Riair)	0.00621007696769394	thermal convection inside air
Ri	0.00123896626583383	thermal conduction internal
1/(Ait*Riair)	0.00405318084553633	total thermal convection internal air
Rf	0.000803868697226336	thermal conduction floor
1/(Af*Riair)	0.0033695846730802	thermal convection inside air
Rw	0.227162884618568	thermal conduction window
Rc	0.00676056478026534	thermal conduction ceiling
Ce_1	56207652.6157491	thermal capacitance of exterior surface exterior wall
Ce_2	56207652.6157491	thermal capacitance of interior surface exterior wall
Ci	855013.187020811	thermal capacitance interior surface ceiling
Cf	18402877.461888	thermal capacitance of inteior surface floor
Cair	0	thermal capacitance of zone air

3.2 Model structure in MATLAB

(a) Submitted the model_structure.m solution file, after changing the time step (unit per hour) and run periods in the idf file