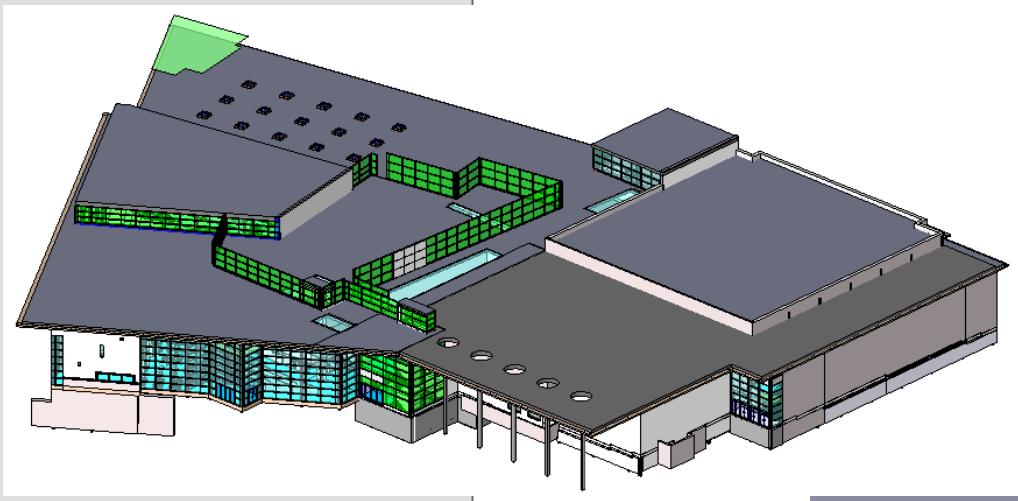
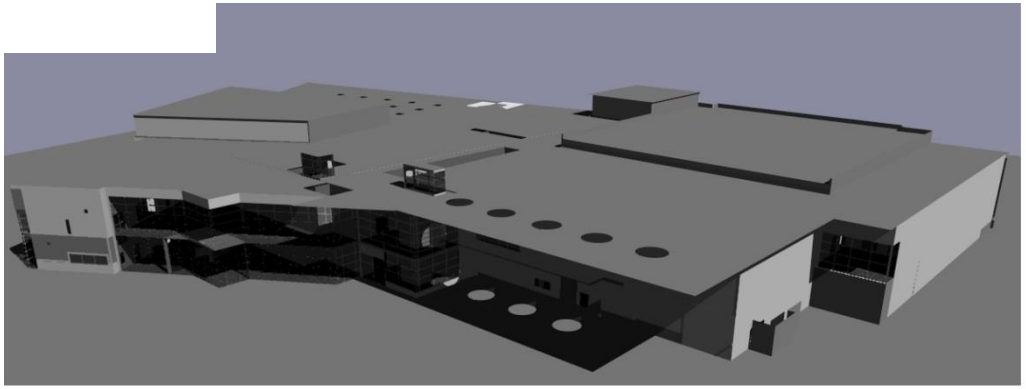
working in partnership with cadline

Bringing Green BIM and Sustainable Design to the construction industry



Revit Architecture 3D Model



3D Model

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Developed for use by architects to check the compliance of architectural designs with UK Building Regulations Part L2

Compliant with UK Part L, CIBSE, ASHRAE and CEN standards

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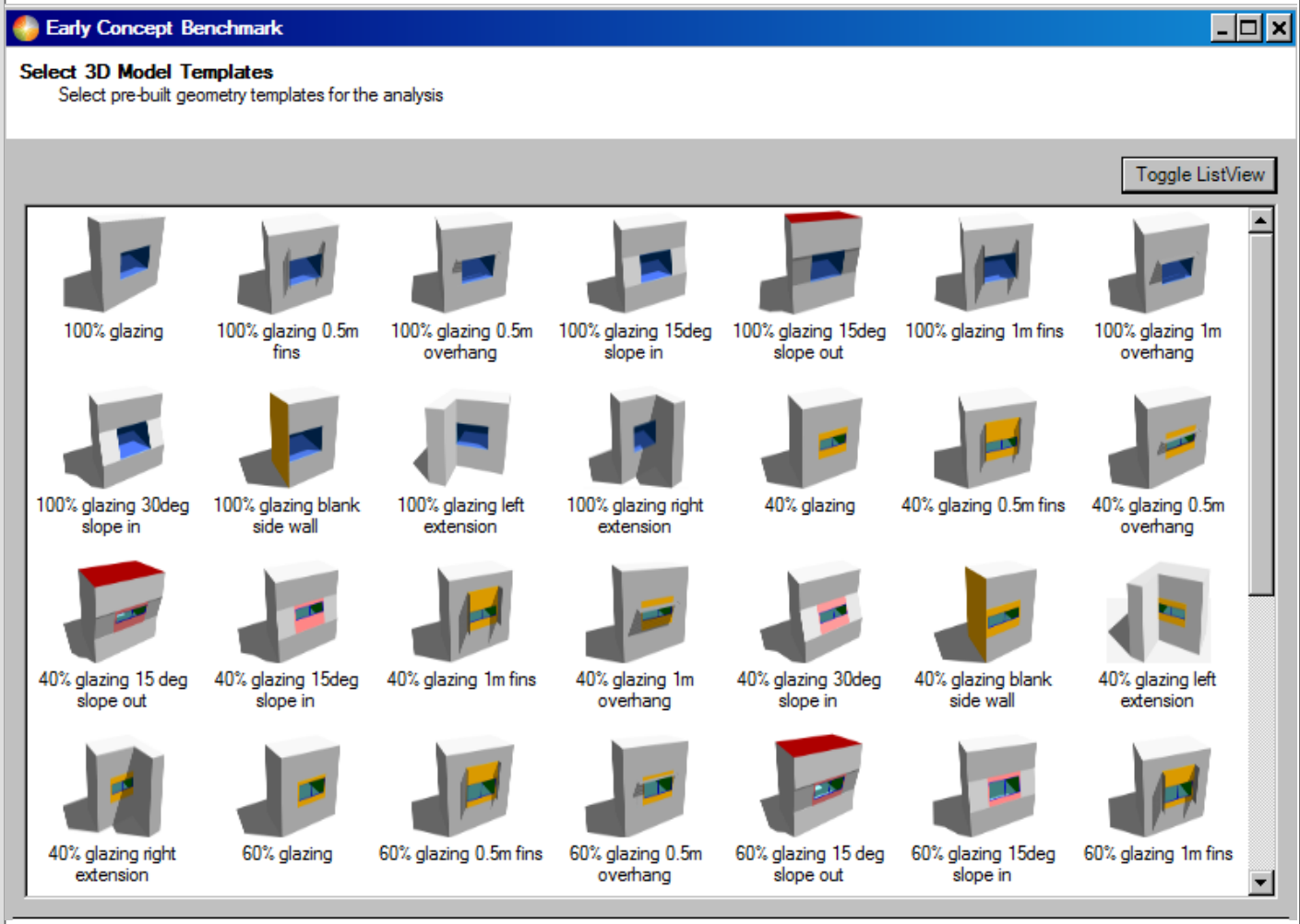
Initial parametric studies

In its simplest form the tool may be used for early concept parametric studies to develop compliant façade specifications.



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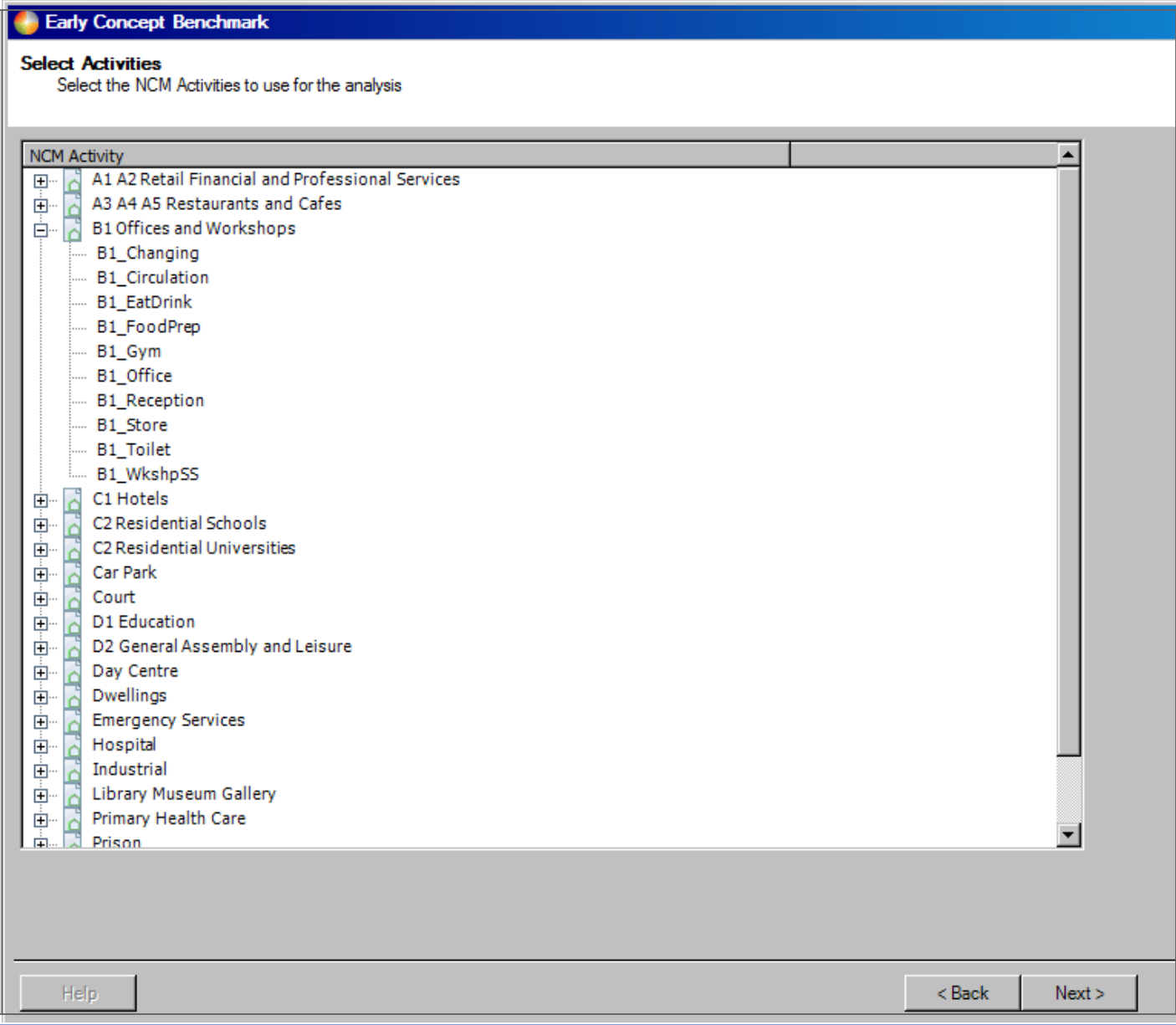
Initial parametric studies

Additional variables include 20 building types

with 10 space types for each building type

This choice installs the appropriate NCM occupation schedules into the façade models



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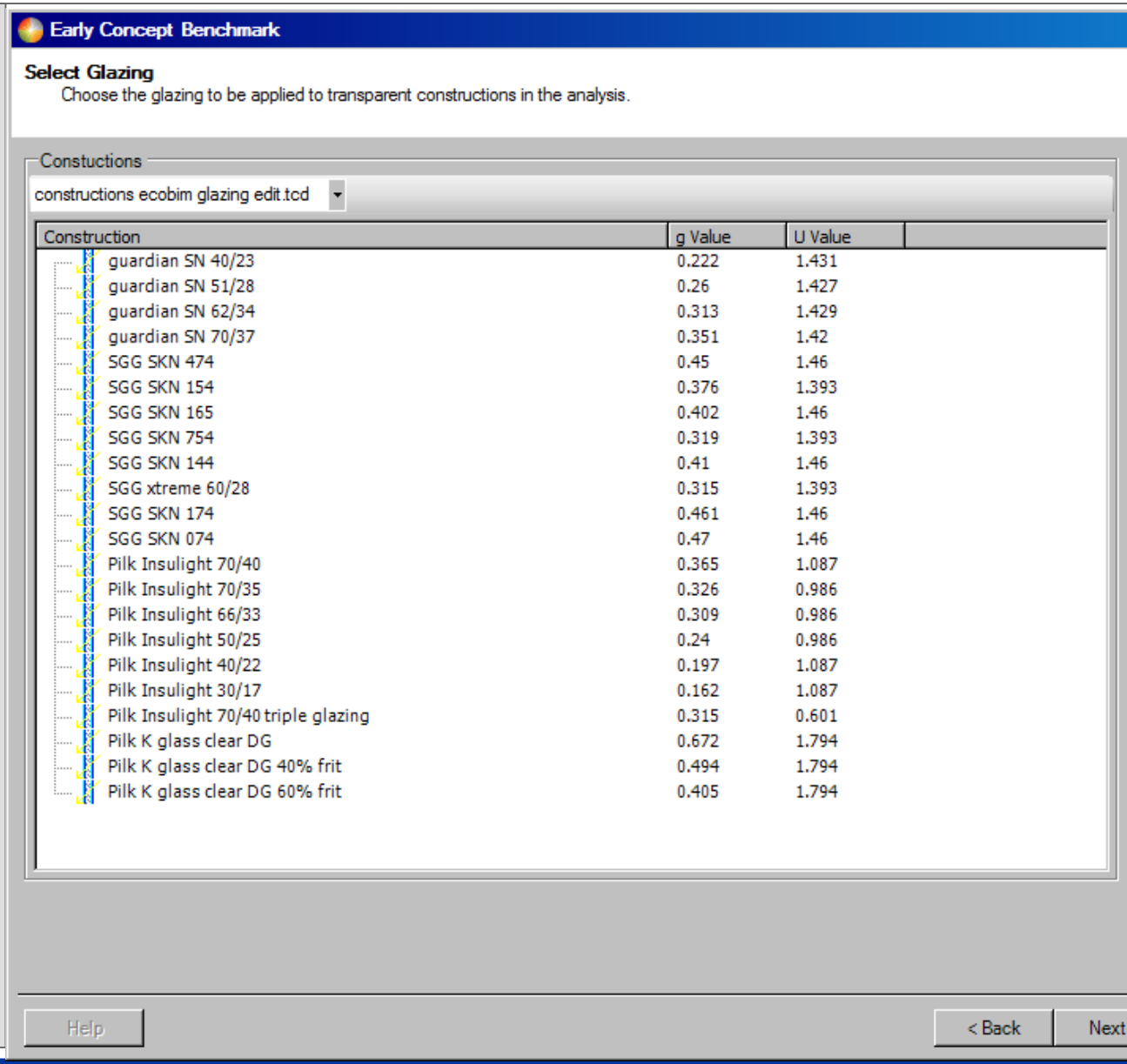
Initial parametric studies

Choice of glazing type



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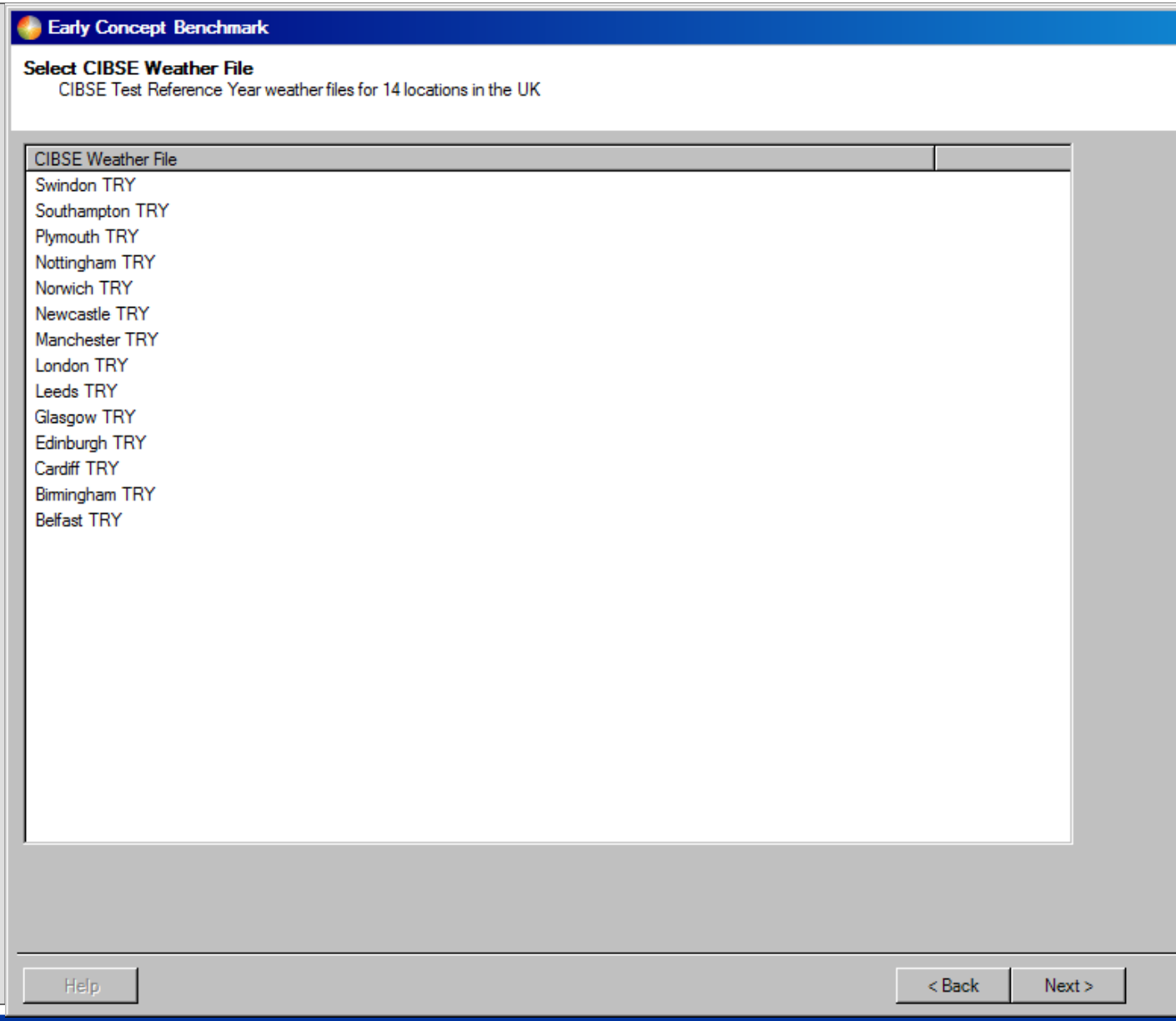
Initial parametric studies

Choice of weather data for 14 locations



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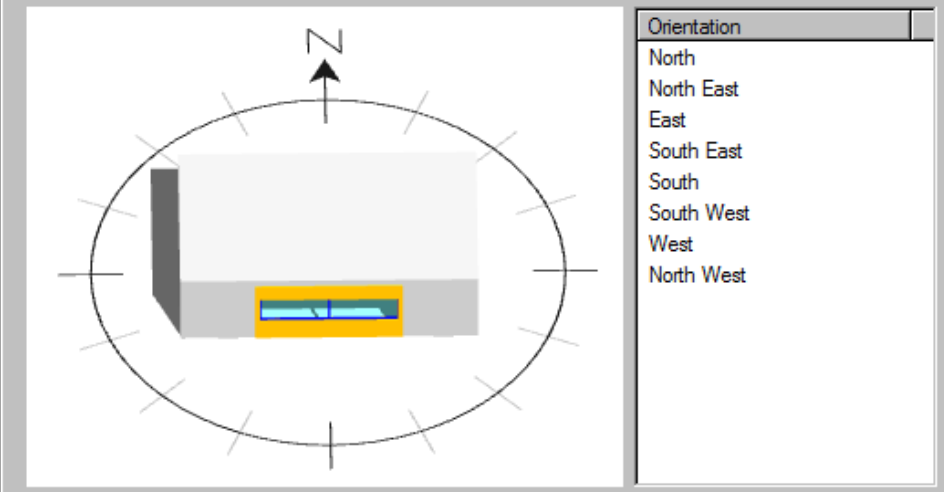
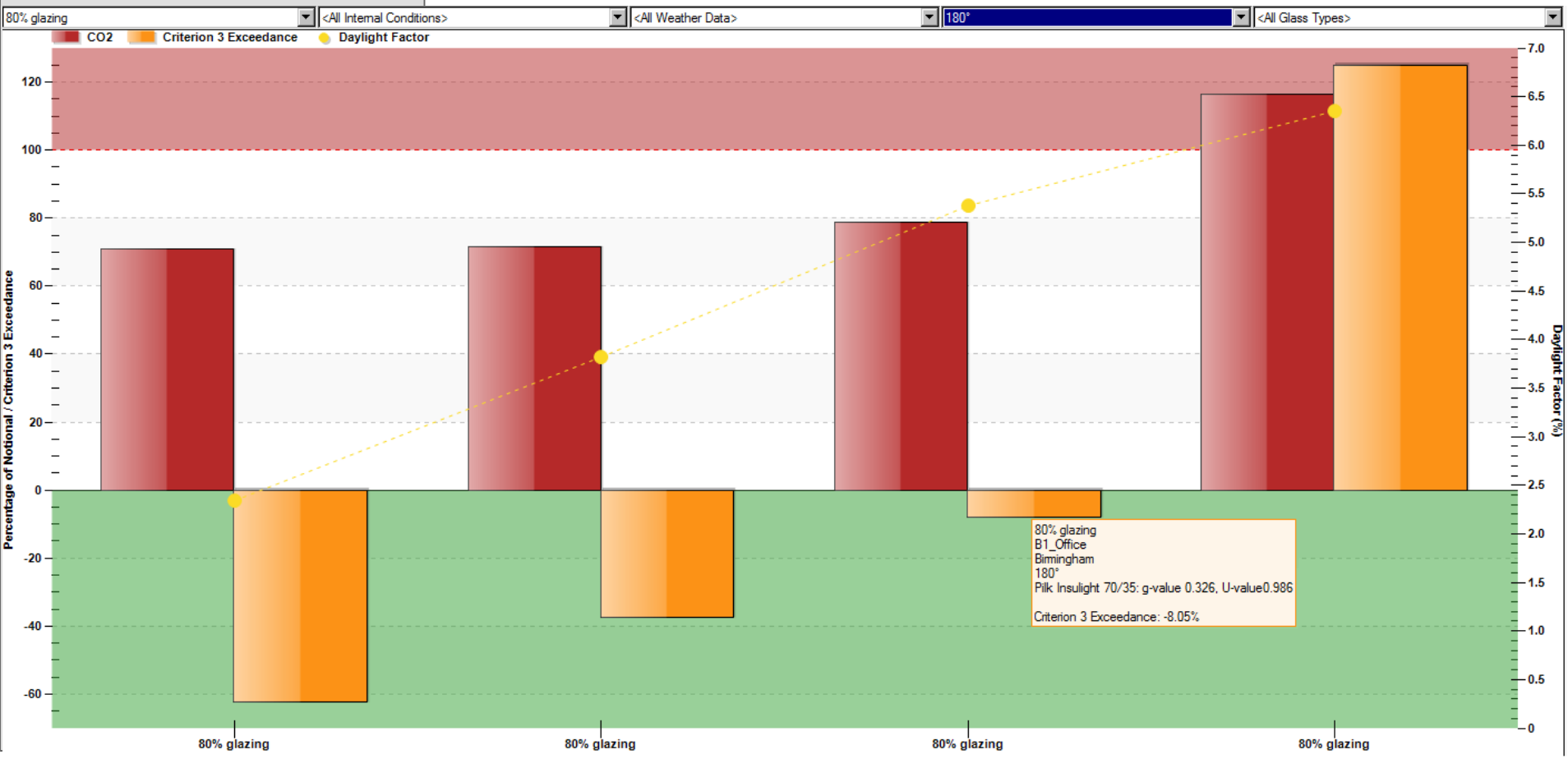
Initial parametric studies

Choice of orientation

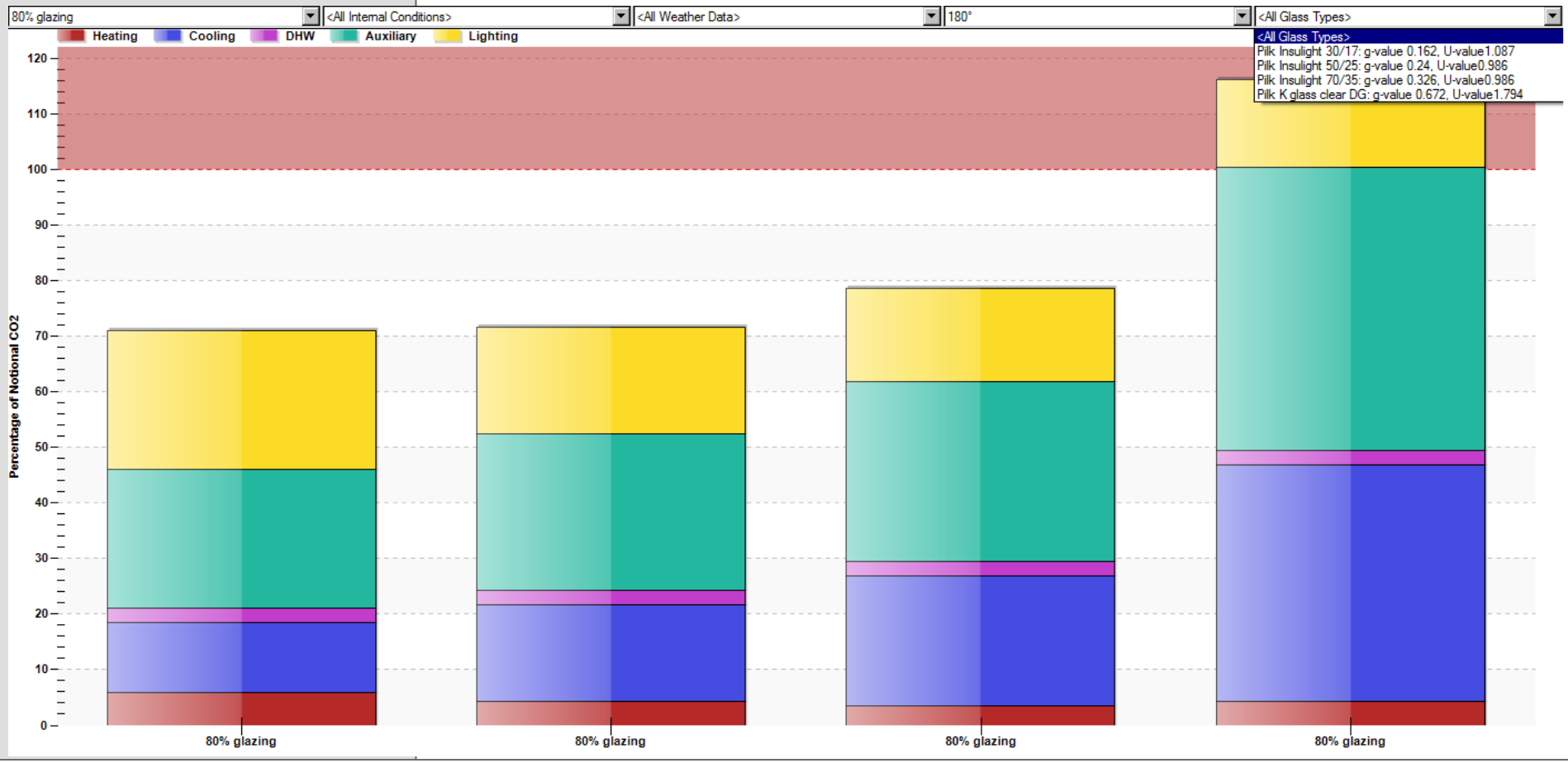


80% glazing, south facing and 4 glass types

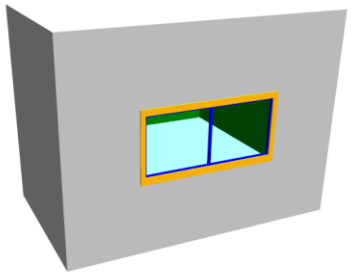
Pilkington insulight 30/17
Pilkington insulight 50/25
Pilkington insulight 70/35
Pilkington clear double glazing



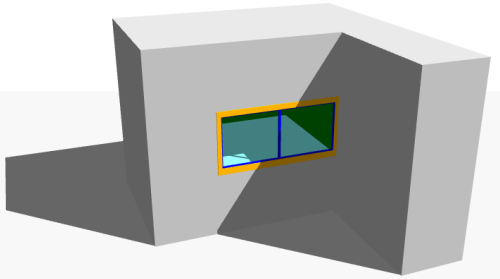
CO2 breakdown with 80% glazing, south facing and 4 glass types



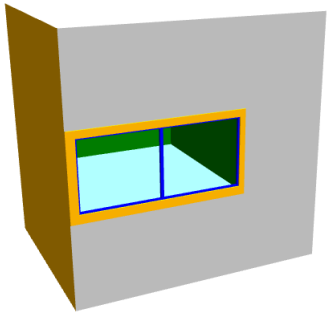
4 locations with the same 80% Pilkington insulight 70/35



4 locations with the same 80% Pilkington insulight 70/35 with some overshading



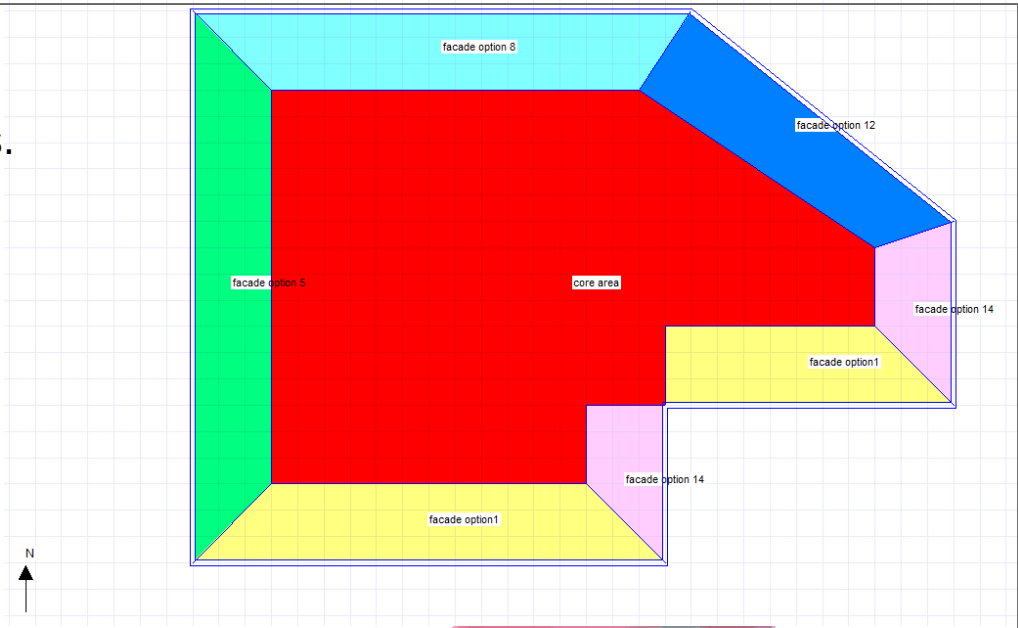
4 locations with the same 80% Pilkington insulight 70/35
with second exposed wall with no glass

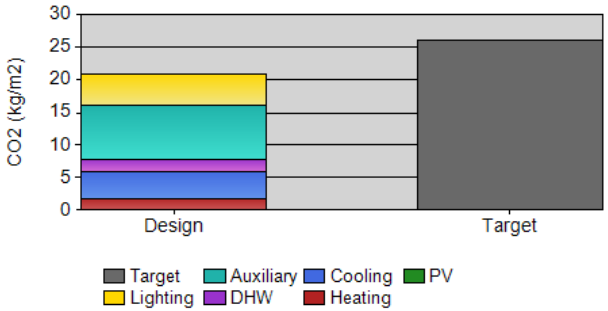


State of the art building simulation software...

Allocation of façade types to floor plans.

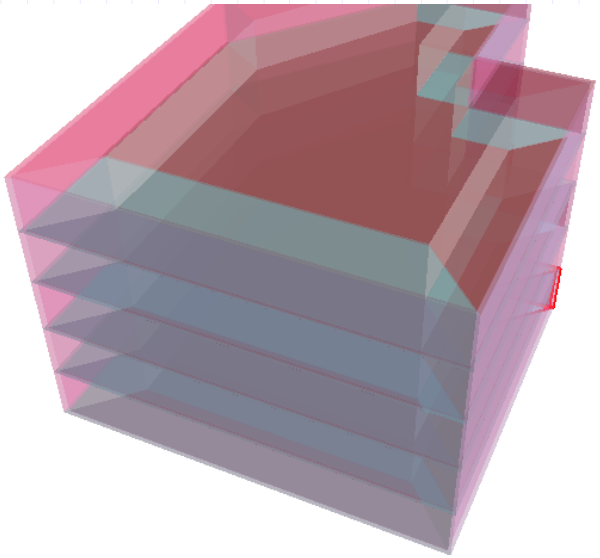
The previously calculated performance of the façade types and core, over the number of floors determines overall Building performance.





CO2 Improvement:	20.2%
PV Contribution:	0.0%

Building Emissions:	20.74 kgCO2/m2
Target Emissions:	25.98 kgCO2/m2
PV Offset CO2:	0.00 kgCO2/m2



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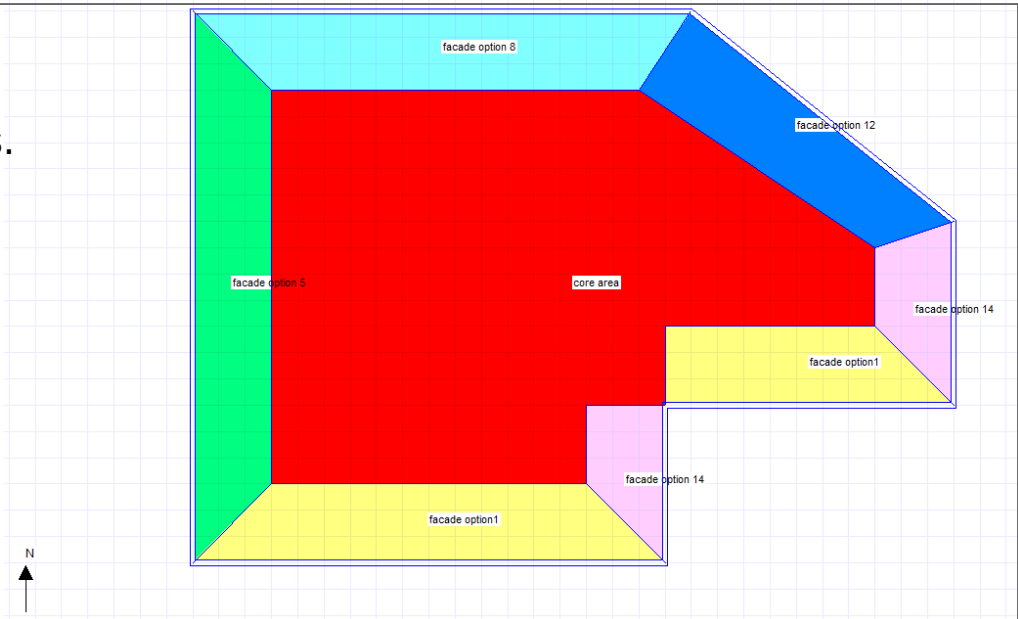
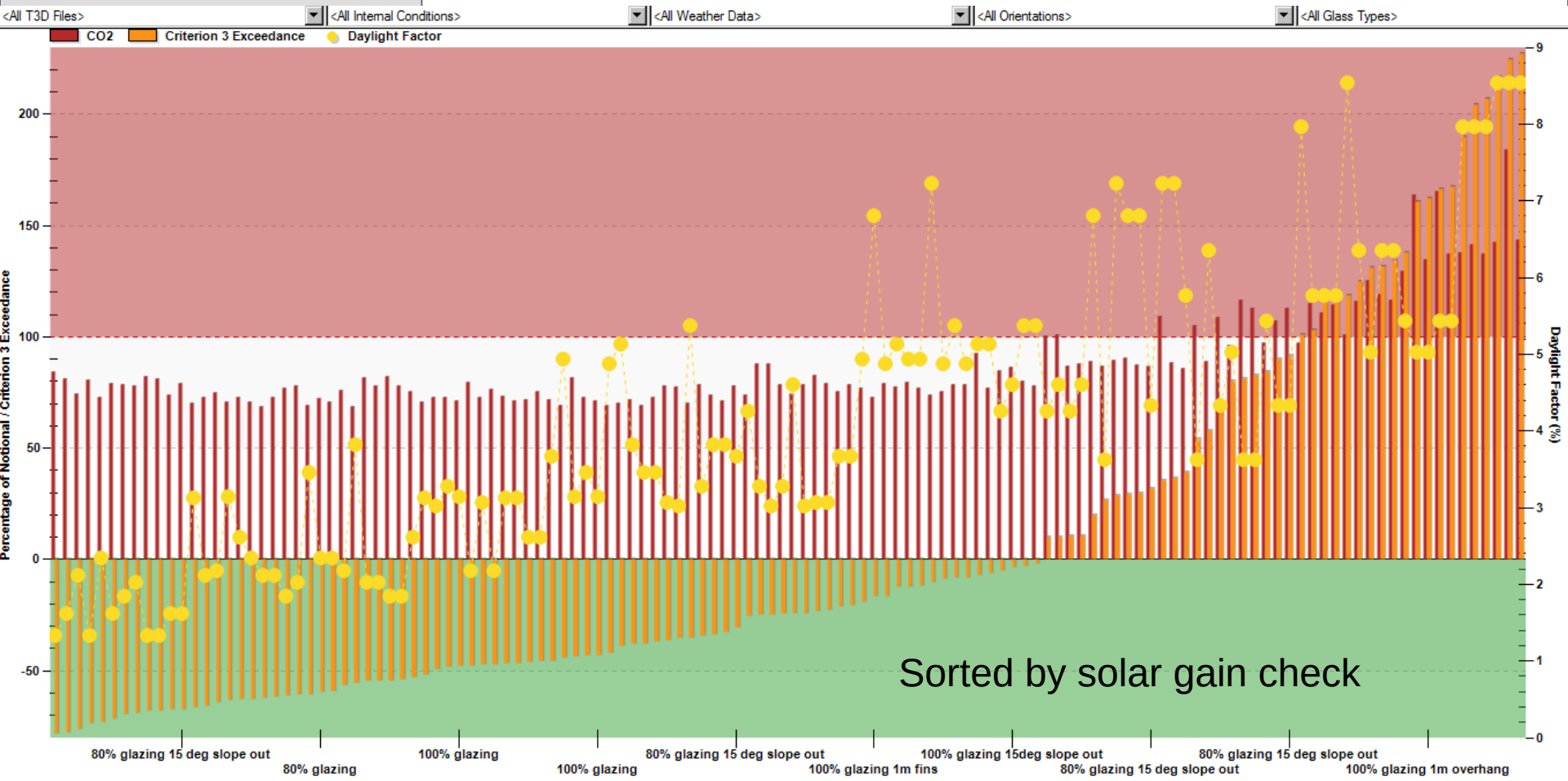


Facade Designer Floor Results

Facade	Area (m2)	Lighting *	Auxiliary *	DHW *	Cooling *	Heating *	BER *	TER *
80%Glzng_B1_Office_BIR_PilkInsulight7035								
south	144.01	4.46	8.61	0.69	6.17	0.93	20.85	26.5
west	111.51	4.46	8.11	0.69	5.56	1.28	20.1	25.79
north	102.91	4.46	5.78	0.69	3.83	1.65	16.4	23.38
northeast	46.86	4.45	8.43	0.69	4.33	1.61	19.5	25.01
east	65.71	4.46	9.3	0.69	5.54	1.36	21.35	26.56
Core_B1_Office_BIR								
core	237	14.1	5.95	0.69	6.37	0.35	27.44	27.44
CompositeResult	708	7.68	7.28	0.69	5.62	0.98	22.25	26.16

8 façade models, 4 orientations and 4 glass types (128 variations)



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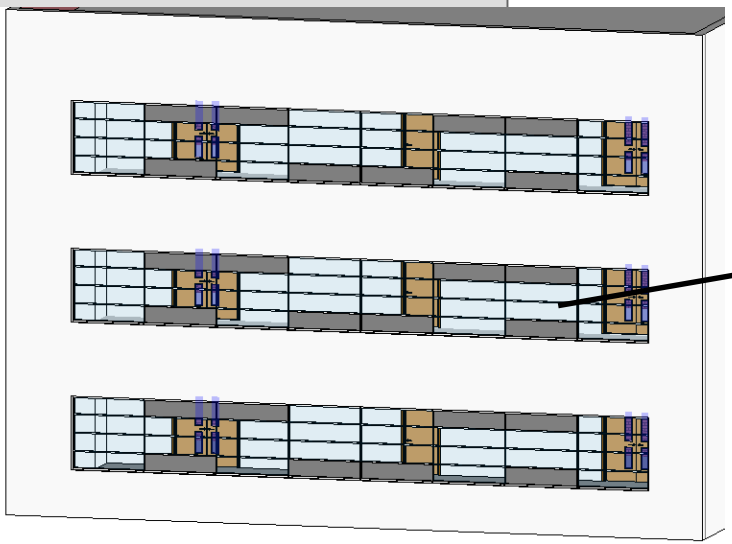
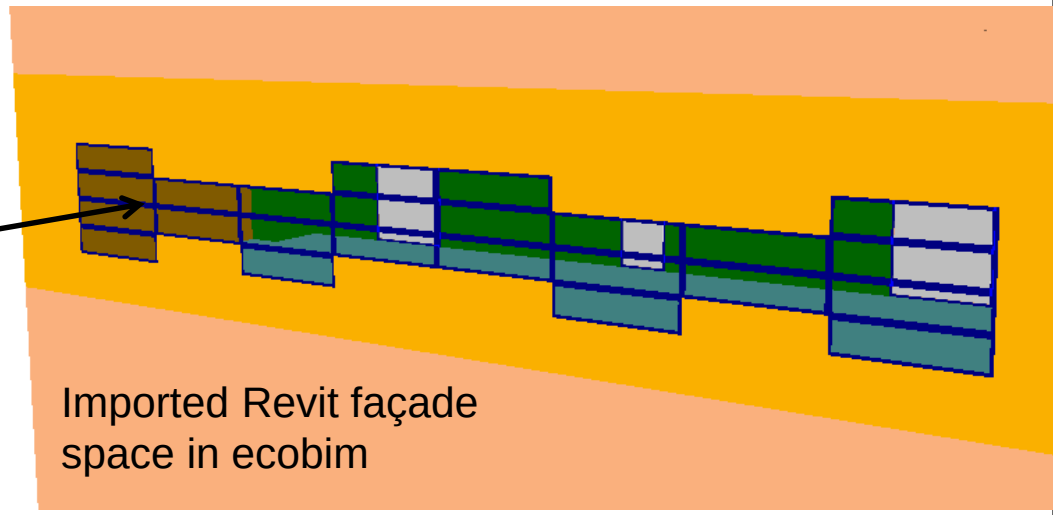
Parametric studies using more specific façade models built in Revit

Following the initial parametric studies architects may create their own façade models in Revit, which may be imported into ecobim for more specific parametric analysis and massing studies. These self built, single space, façade models may be added to the façade database.

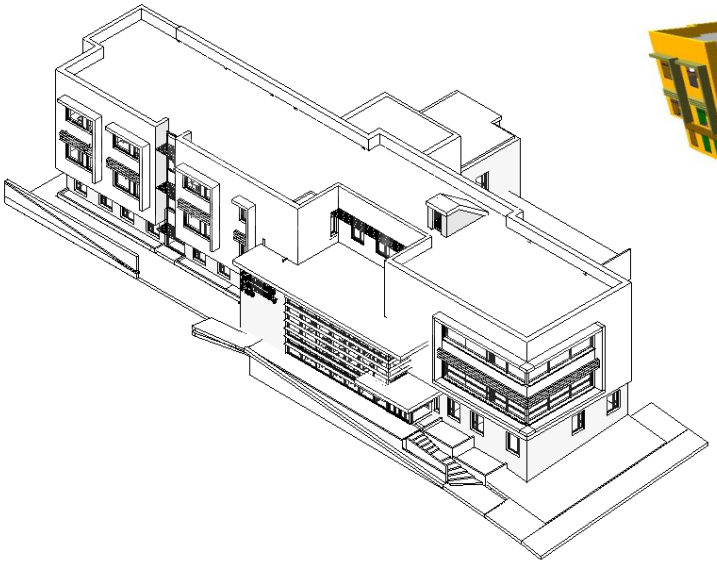


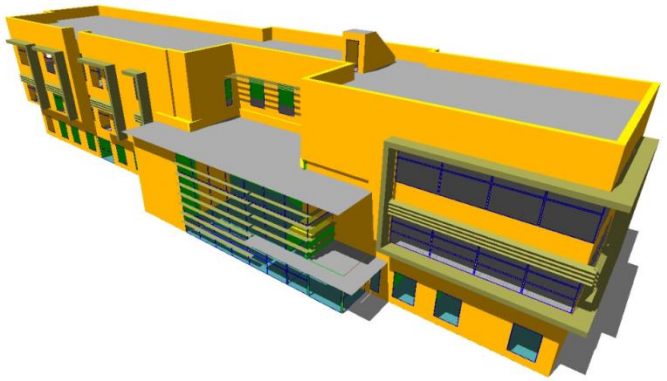


Imported Revit façade space in ecobim

Compliance checking more advanced Revit models

As the design develops more advanced Revit models may be imported into ecobim for compliance checking. The whole model or selected parts of the model may be imported.





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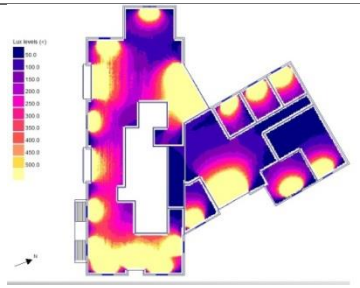
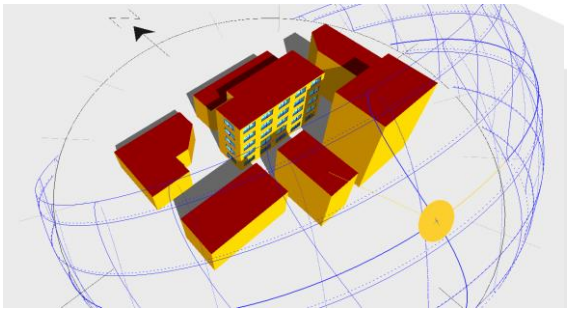


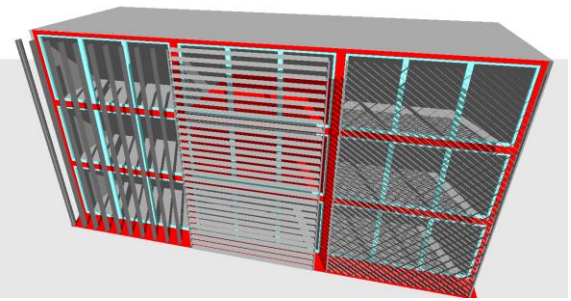
Additional studies

Detailed internal daylight studies showing daylight levels and distribution, including borrowed light.

Detailed external daylight studies, including right to light.

Advanced shading systems design for solar and daylight evaluation.





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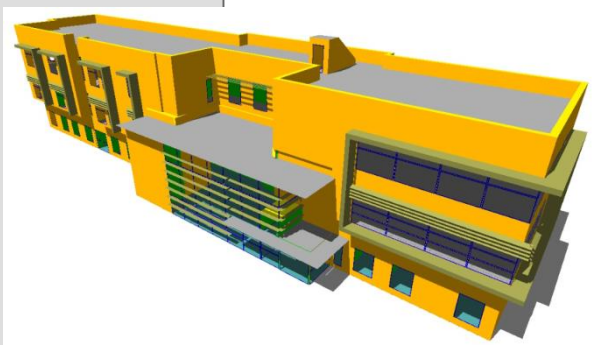
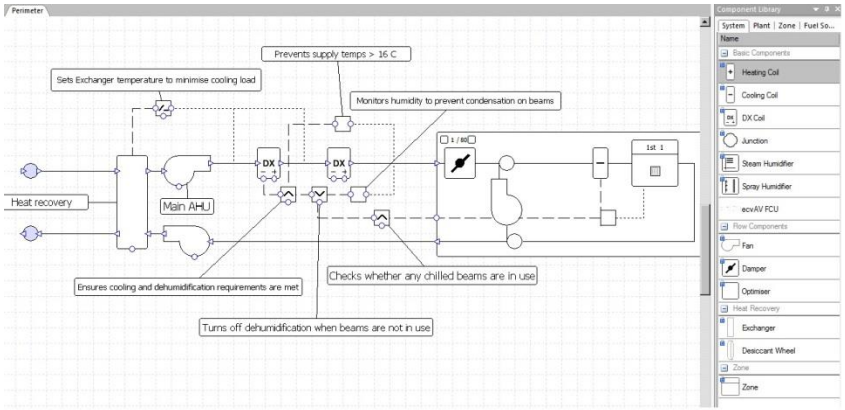
Working with engineers

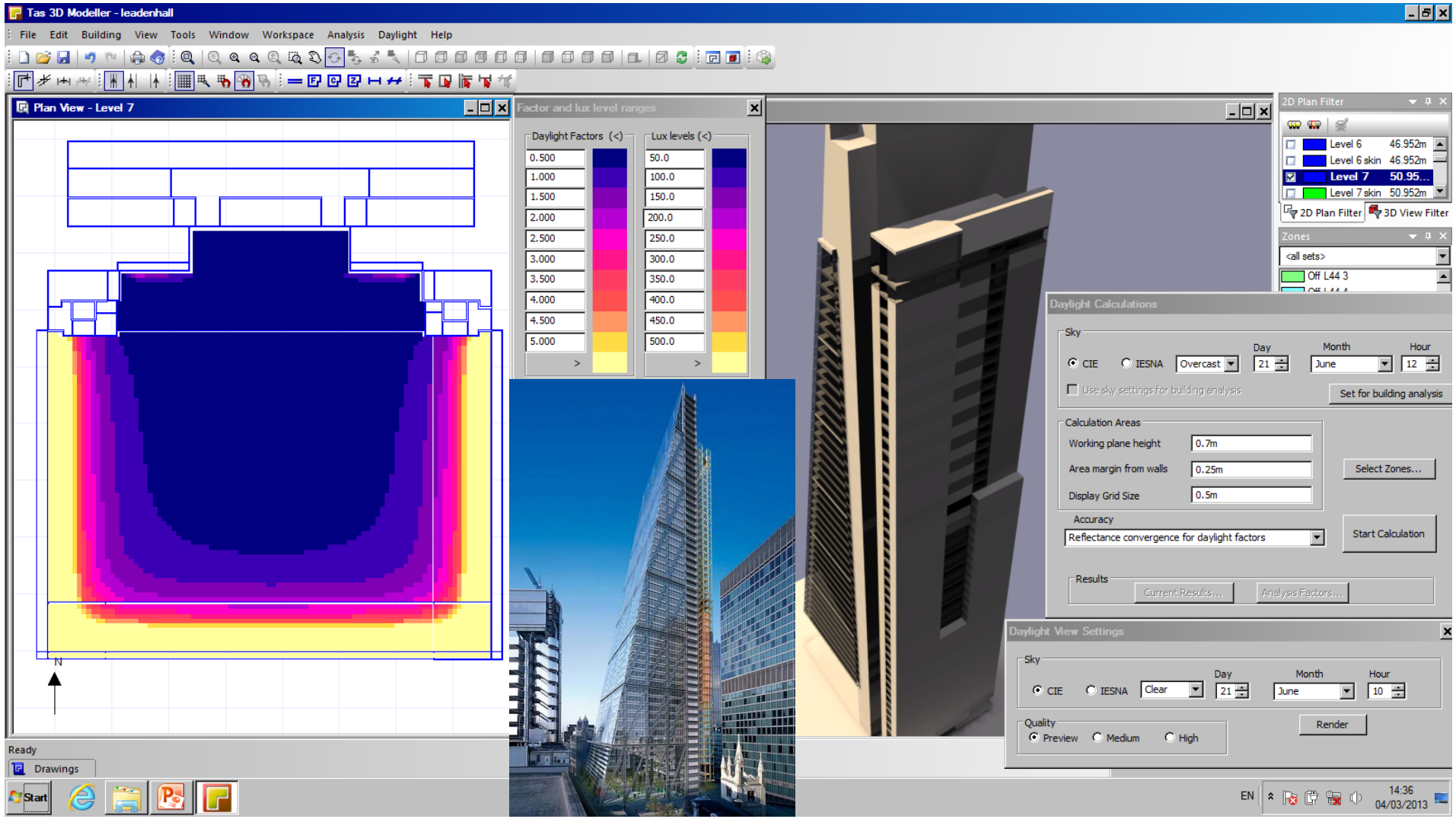
ecobim is interoperable with EDSL Tas Engineering software. Models created in ecobim may be opened in the engineering software and vice versa.

This is an important part of the Green BIM process.

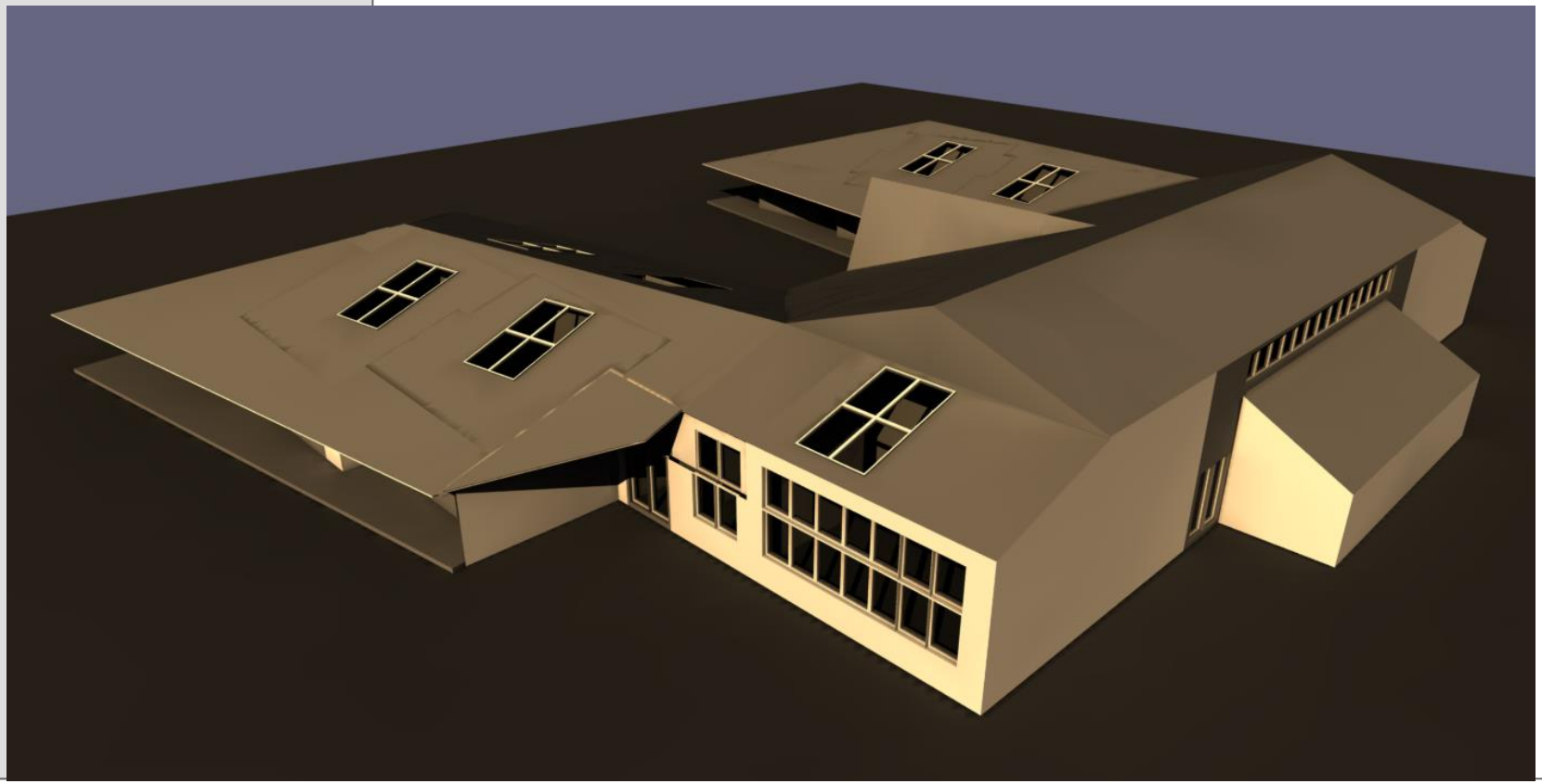




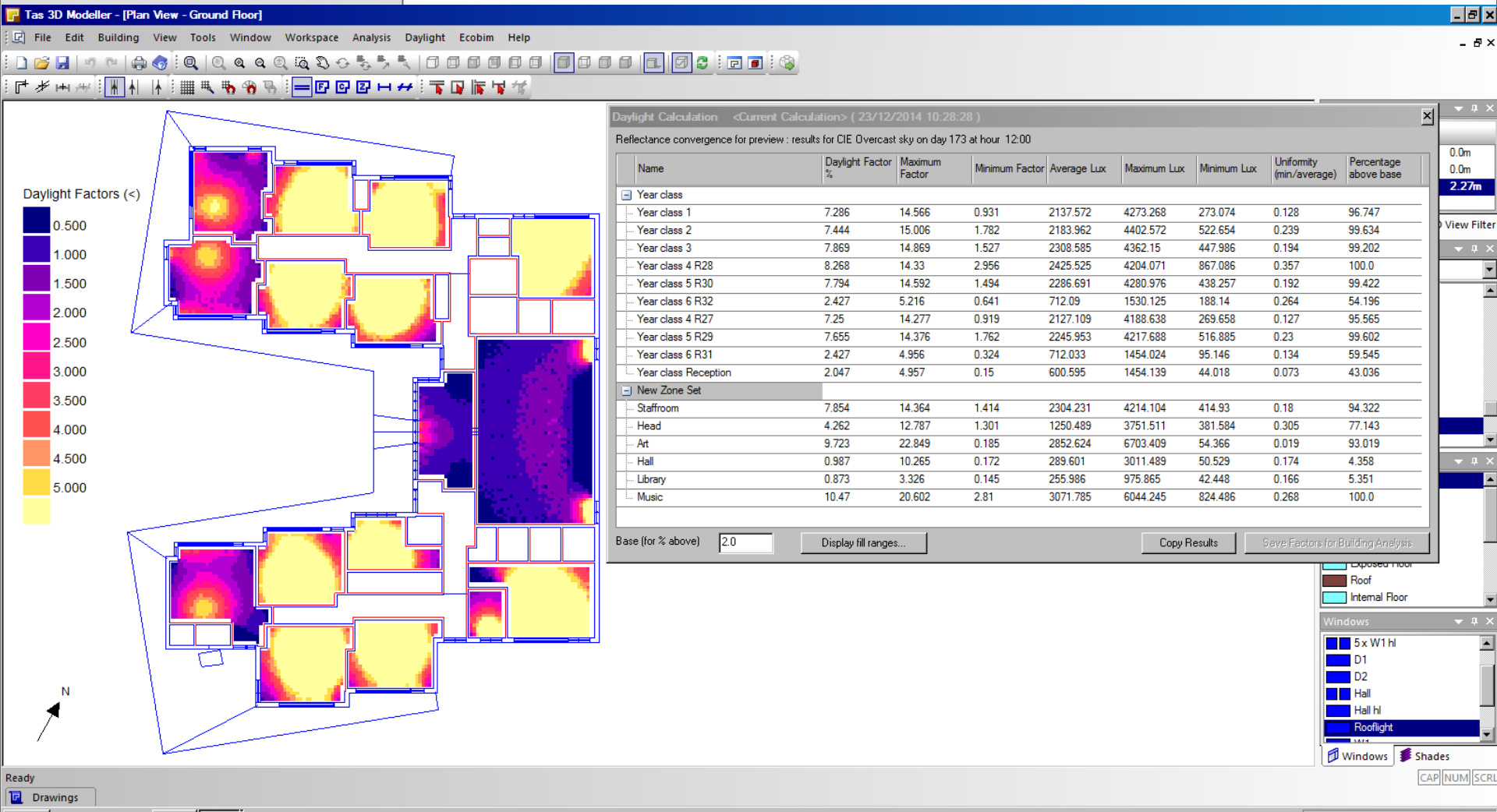
The Leadenhall Building



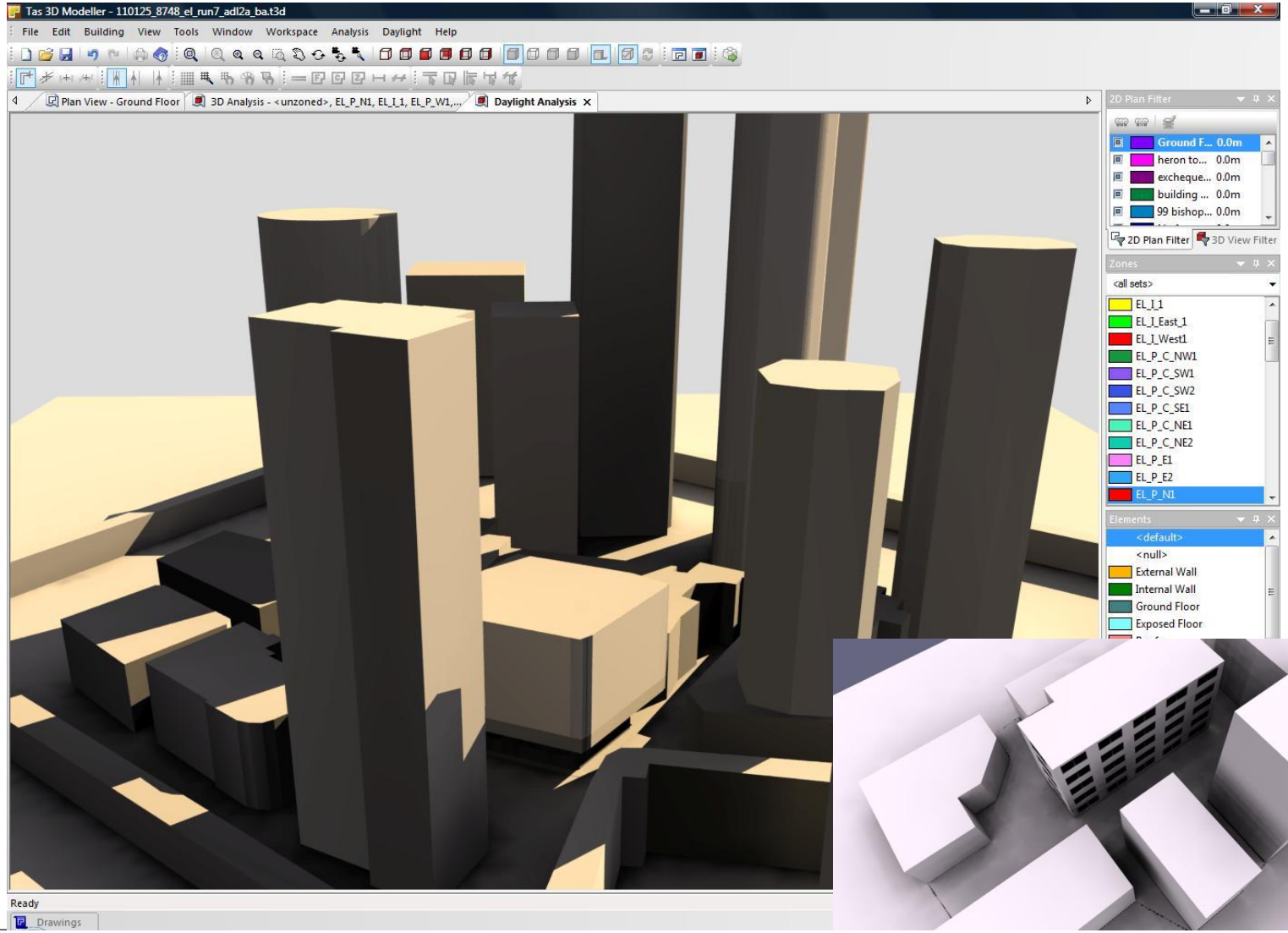
Advanced models may imported from Revit into ecobim.



Daylight study



City scape daylight and solar gain simulation



Tas beam & diffuse solar shading