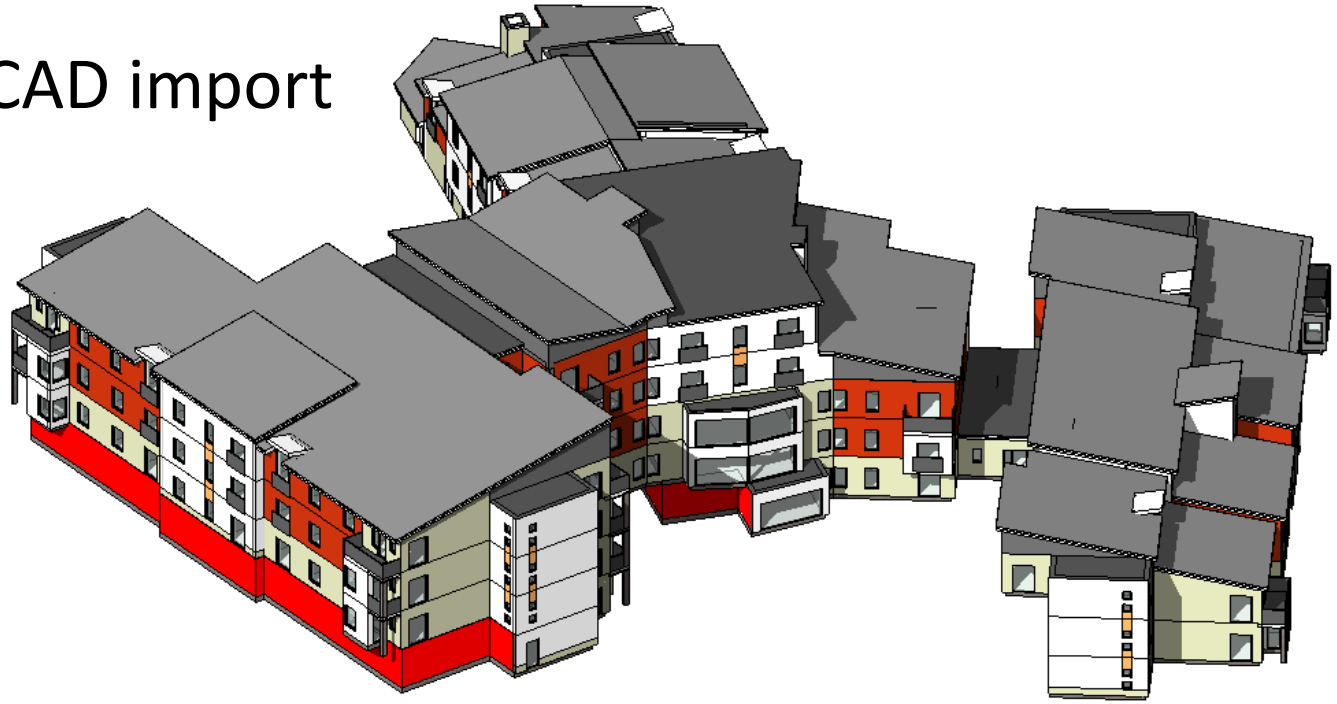
EDSL Tas working in partnership with Cadline & Autodesk

Bringing Green BIM and Sustainable Design to the construction industry

Architectural 3D CAD import



Revit
Architecture
3D Model

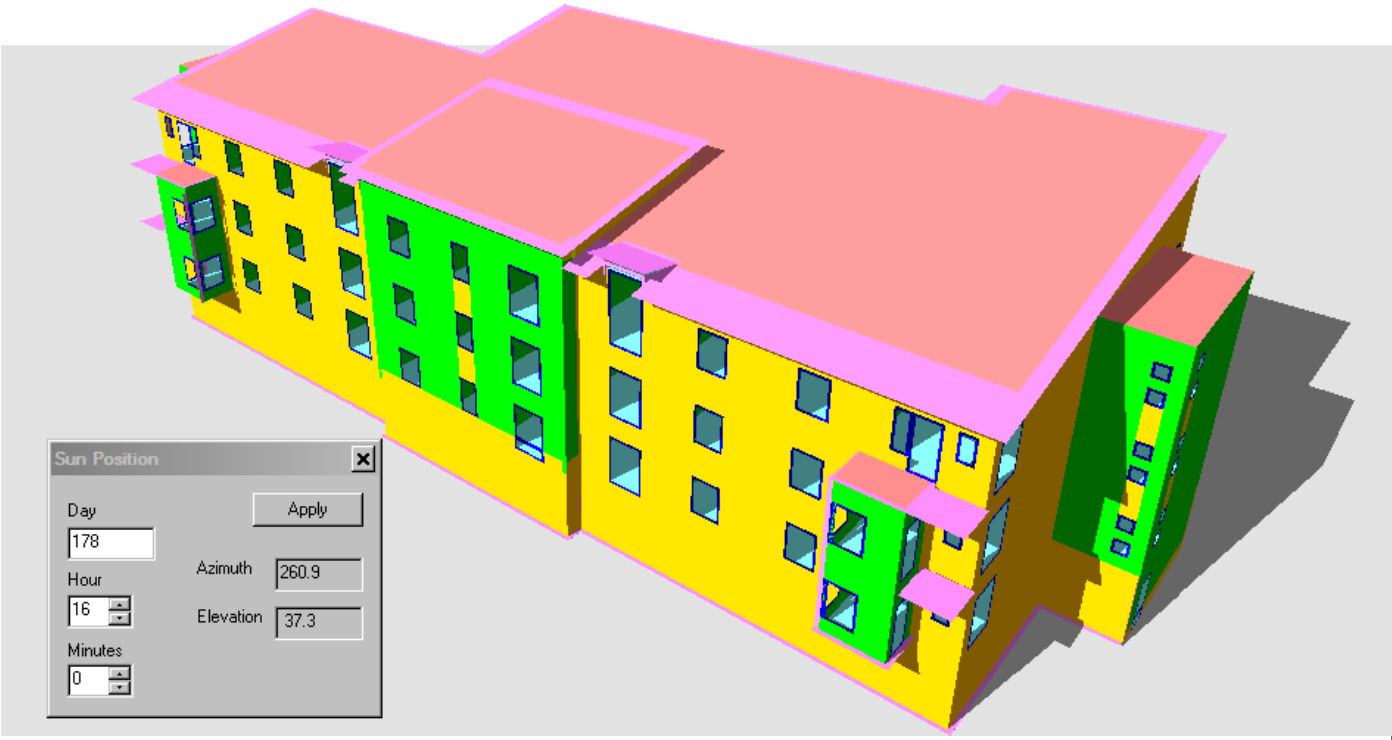
Use REVIT 3D geometry data

using *smart gbXML import*

Architectural 3D CAD import

Geometry model with full solar analysis

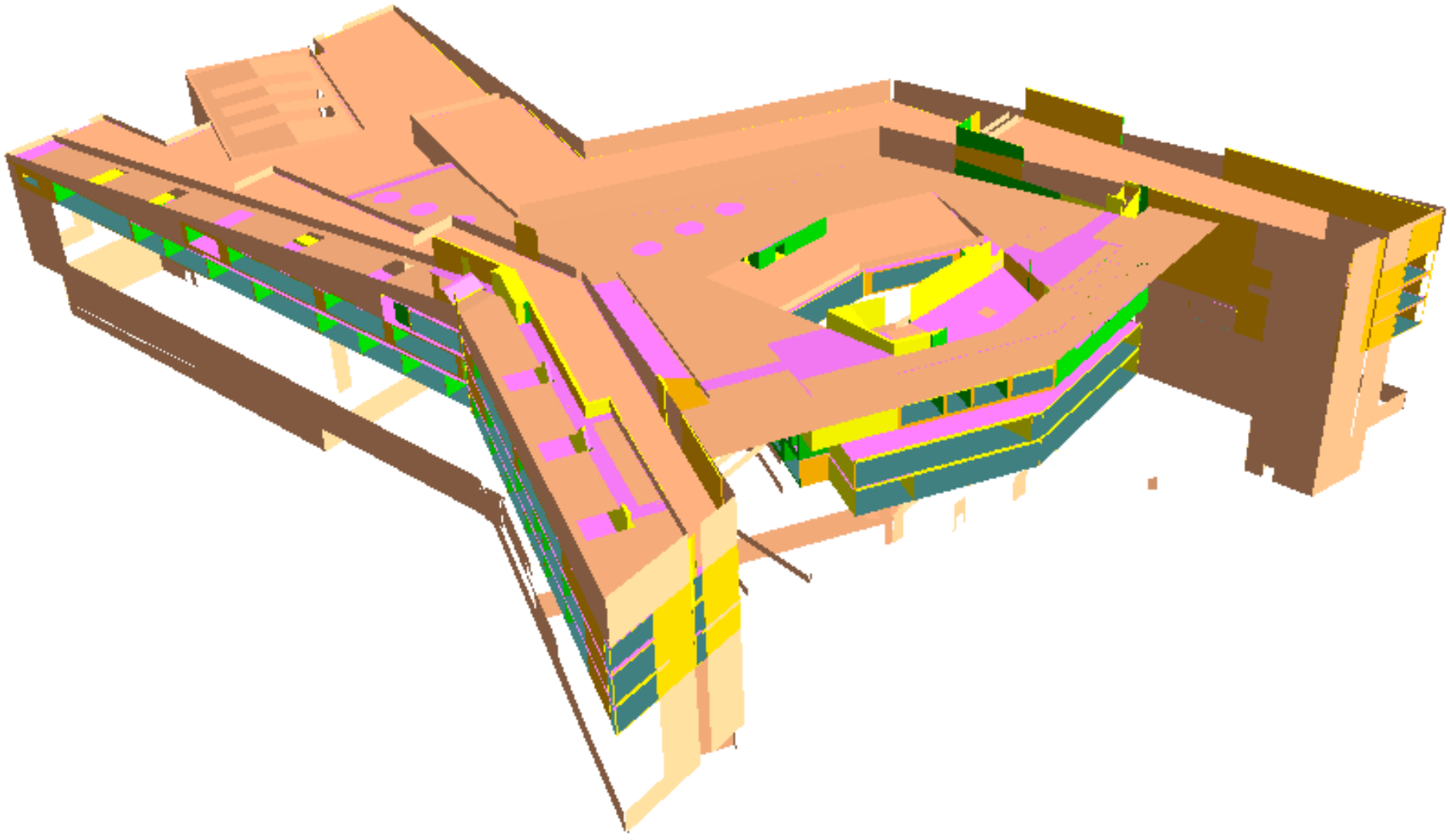
Tas 3D Model
Imported from Revit



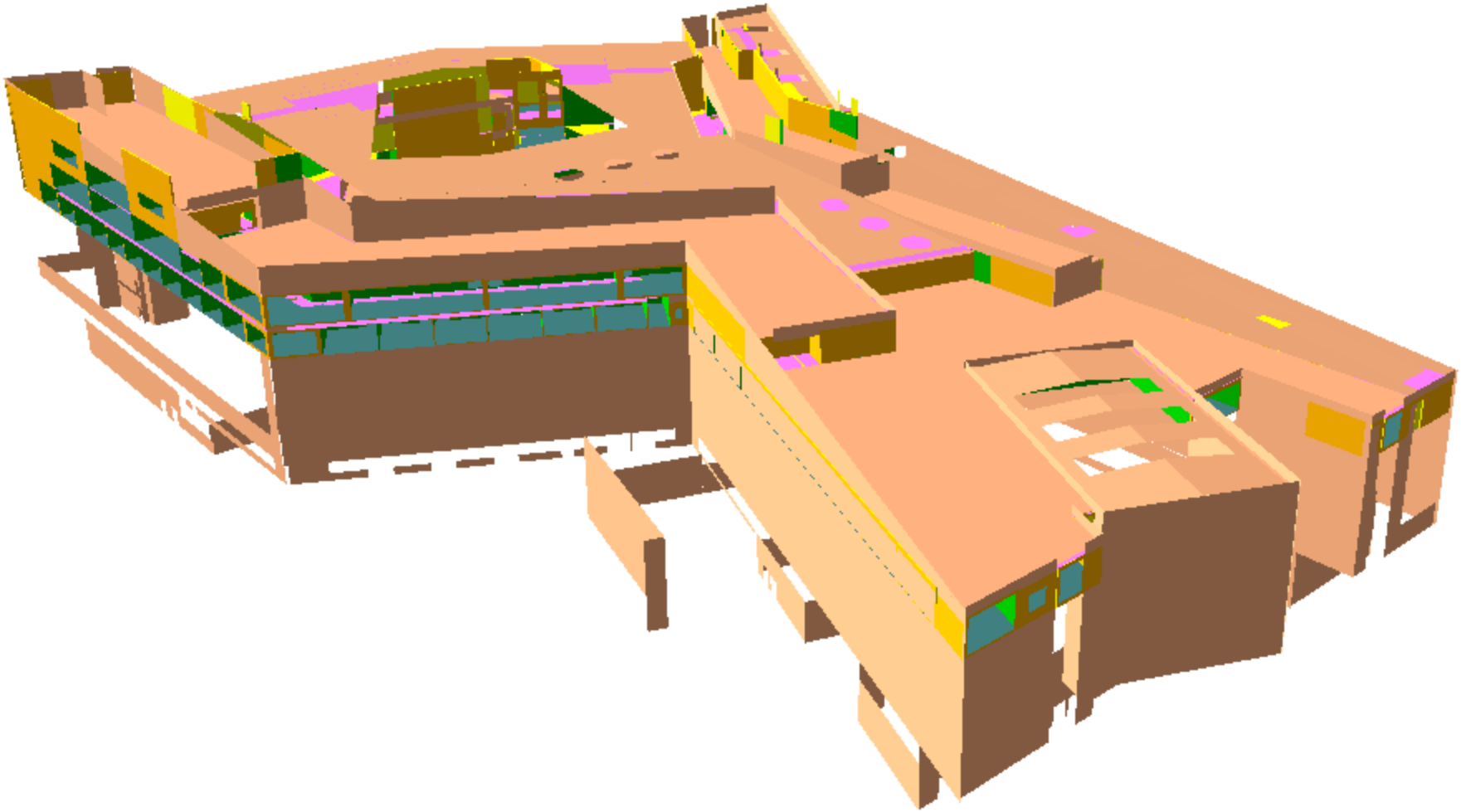
Use REVIT 3D geometry data

using *smart gbXML import*

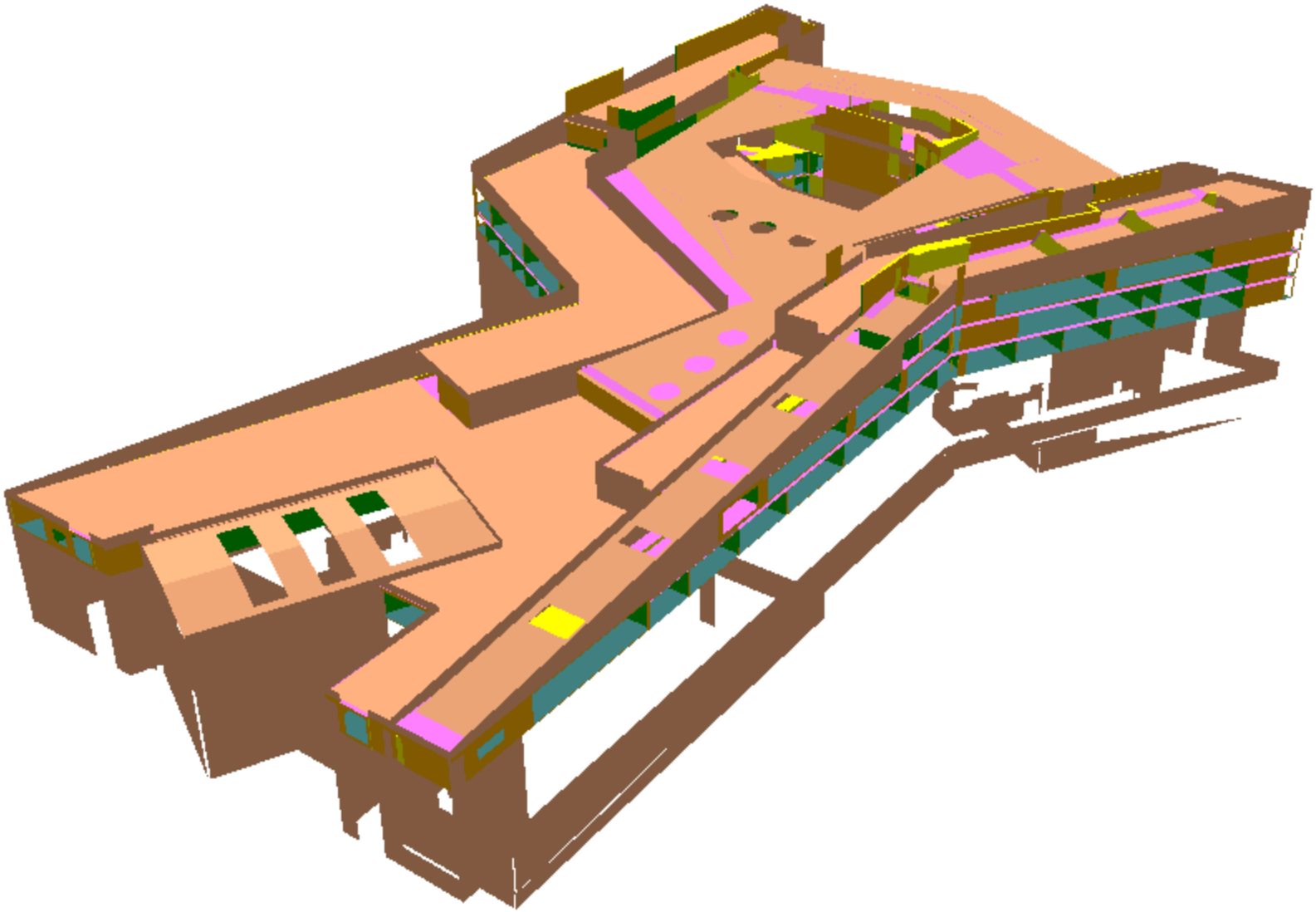
State of the art building simulation software...



State of the art building simulation software...

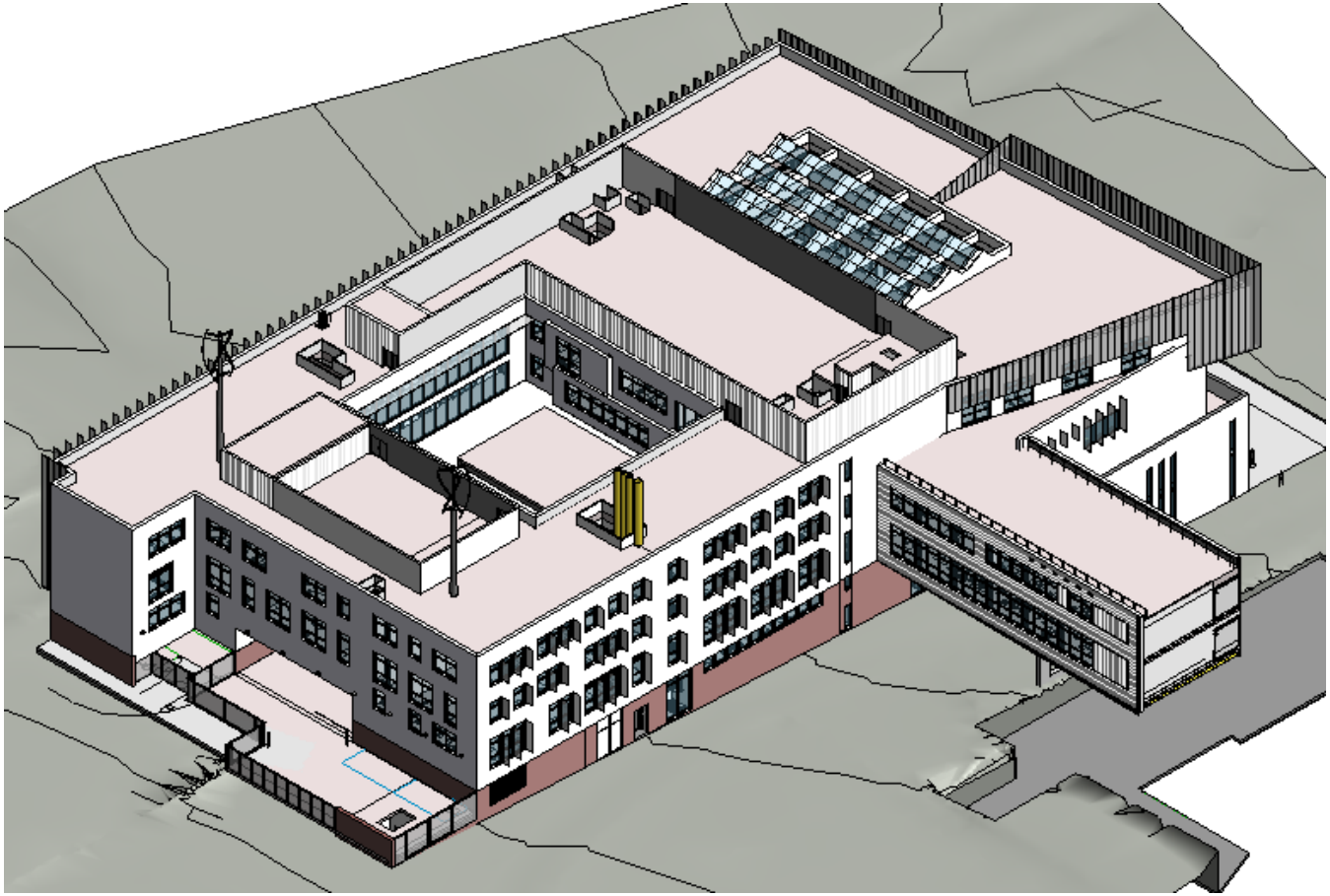


State of the art building simulation software...



Architectural 3D CAD import

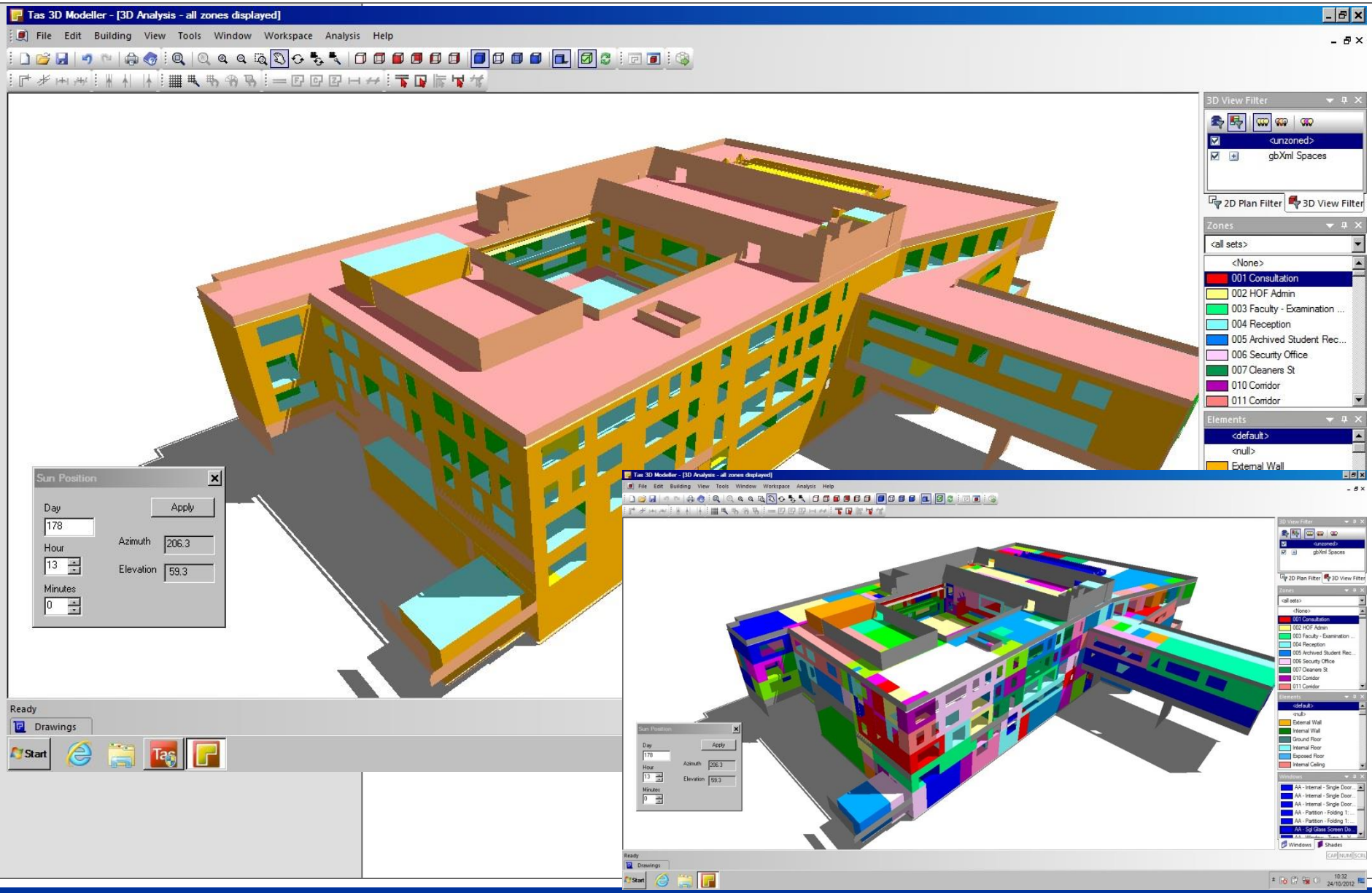
Revit
Architecture
3D Model



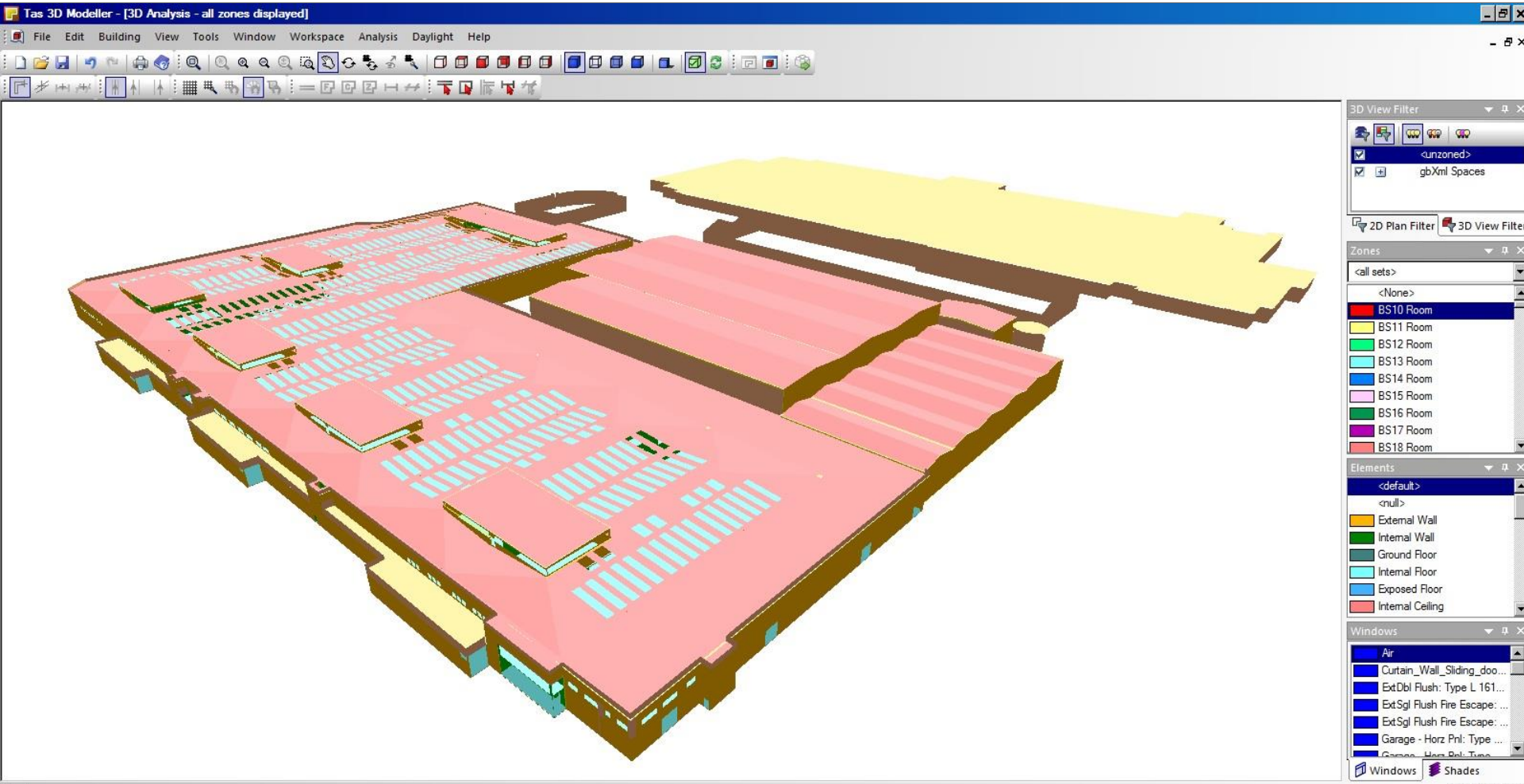
Use REVIT 3D geometry data

using *smart gbXML import*

State of the art building simulation software...



State of the art building simulation software...



Key development features

The New Generation Tas has been developed with an Automation Interface

This means that 'Apps' can be developed to drive the software to perform specific tasks and procedures

These 'Apps' are called Studios. Here are a few examples…

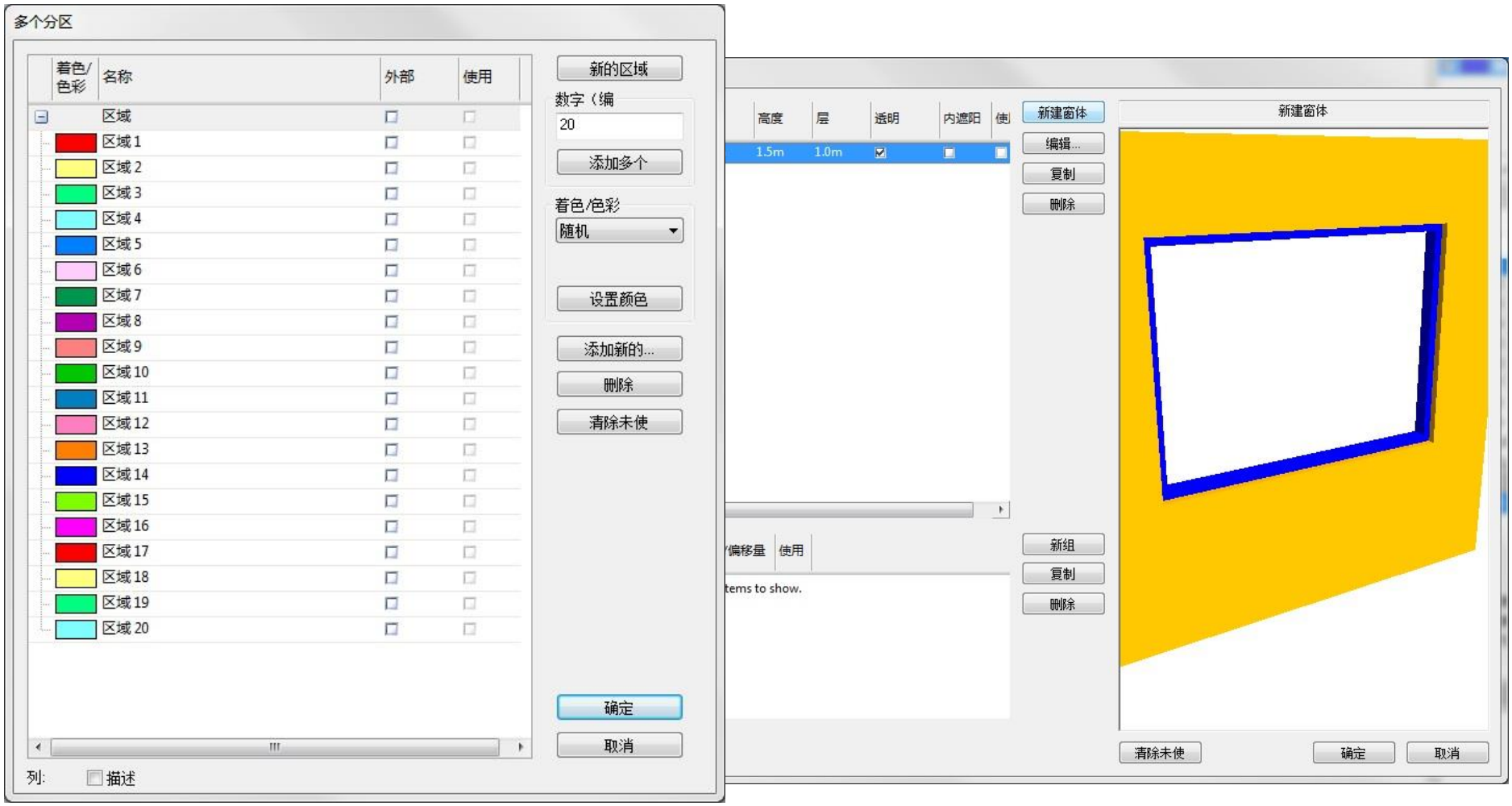
Tas Engineering Part L2 2010 & EPC Studio

This Studio automatically takes the designer through the stages of performing compliant energy simulations for Part L2 2010 & EPCs

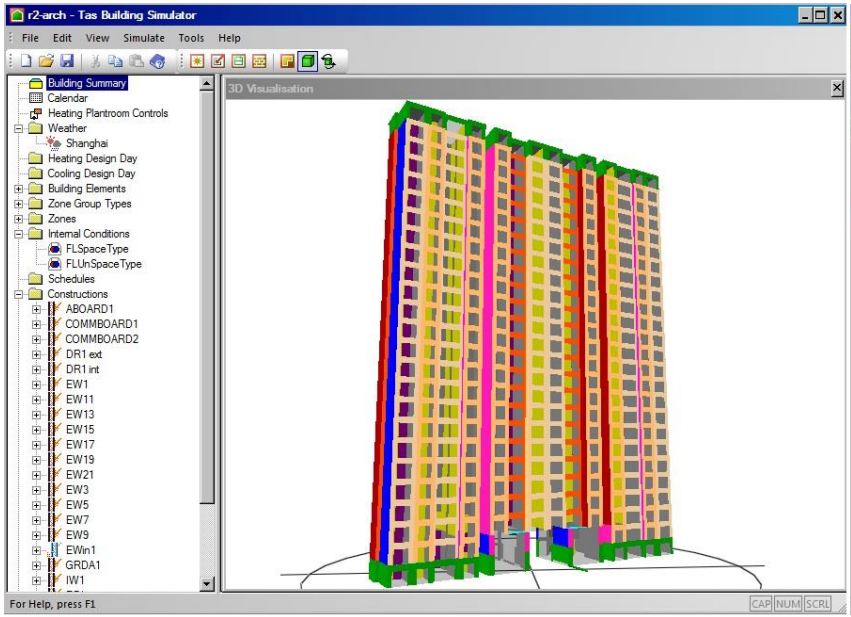
Tas ASHRAE 90.1 Studio for LEED

This Studio automatically takes the designer through the stages of performing a compliant ASHRAE 90.1 energy simulation for LEED credits

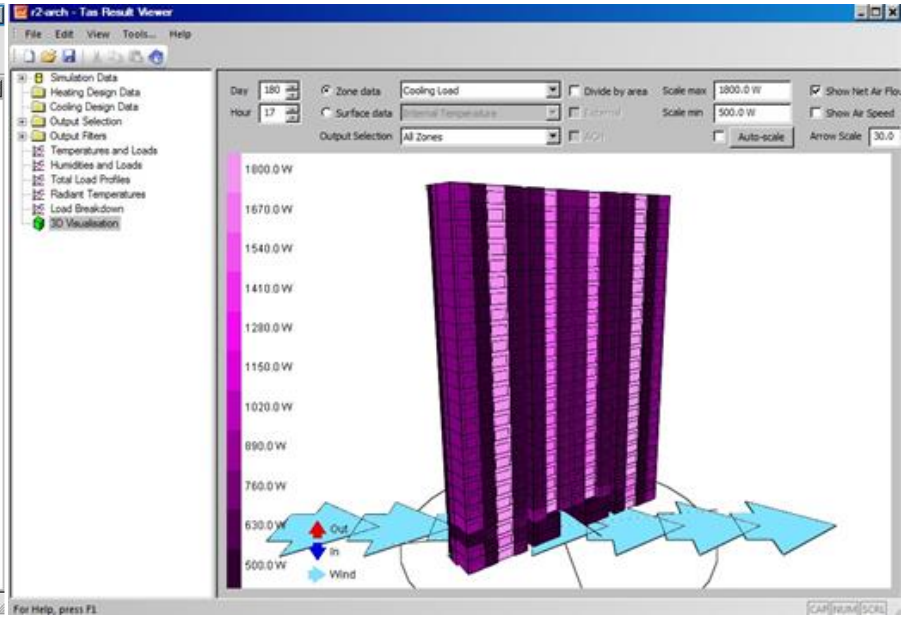
CABR Tas China Academy of Building Research Tas translation



PKPM PBECA Model data import

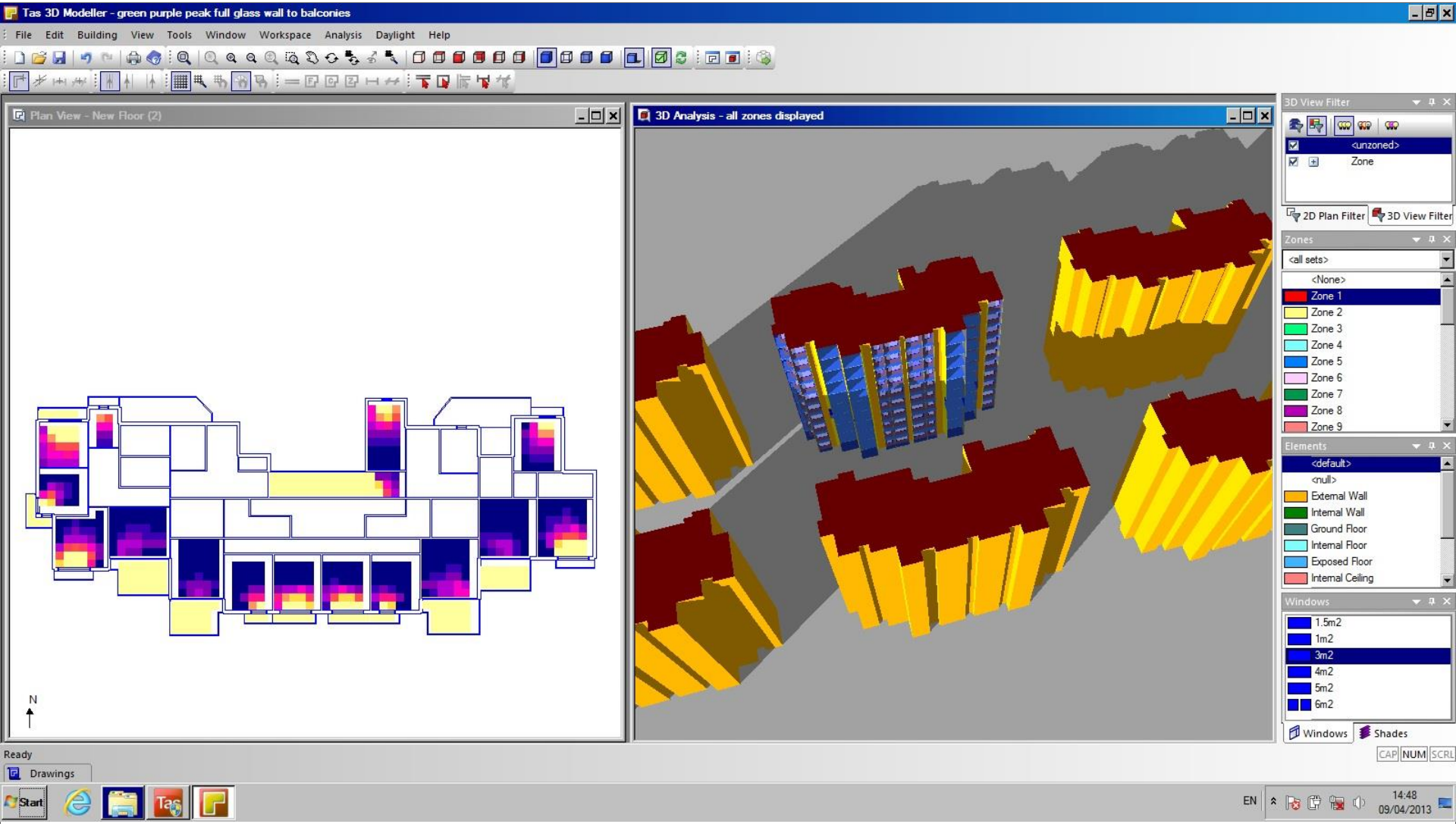


Display of imported PKPM PBECA building data

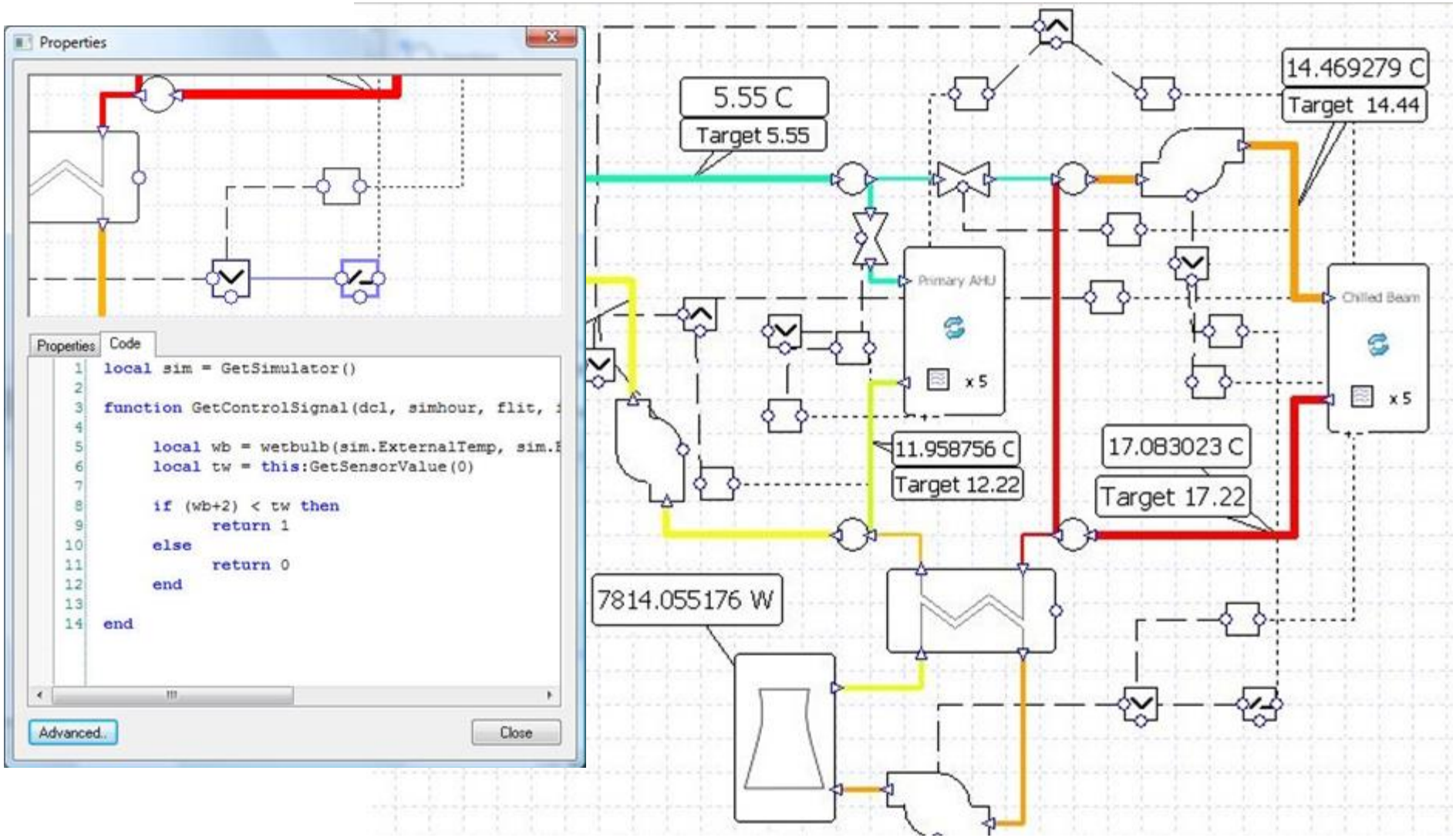


3D graphical display of cooling loads

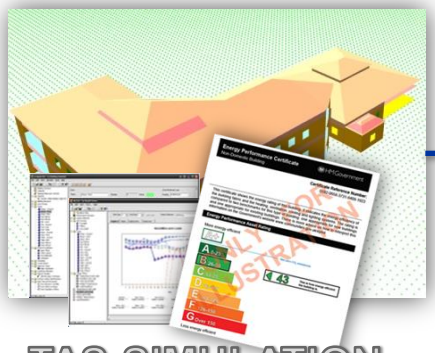
State of the art building simulation software...



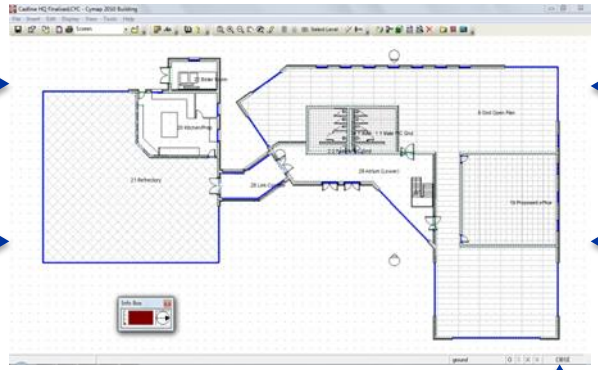
Innovative Plant and Controls Design with manufacturers performance data



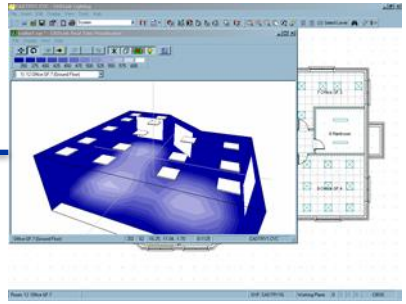
INTEGRATED SERVICES DESIGN



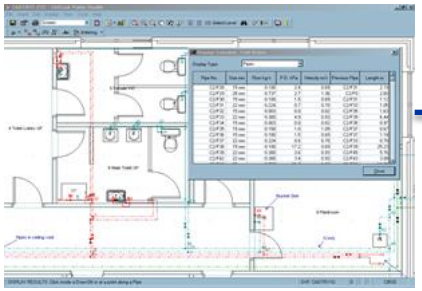
TAS SIMULATION



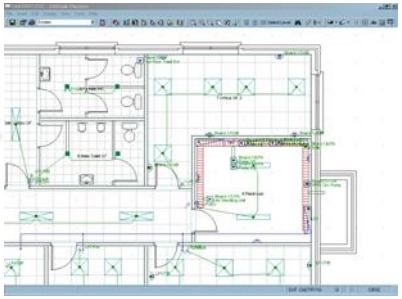
CENTRAL BUILDING MODEL



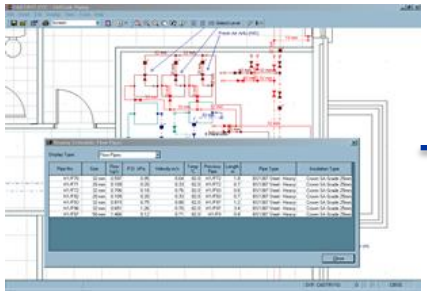
LIGHTING



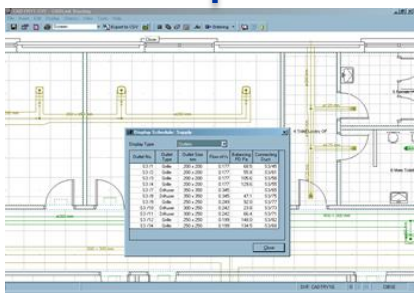
PUBLIC HEALTH



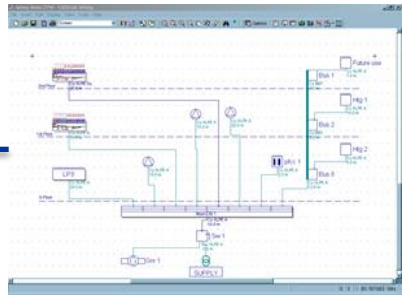
ELECTRICS



PIPEWORK

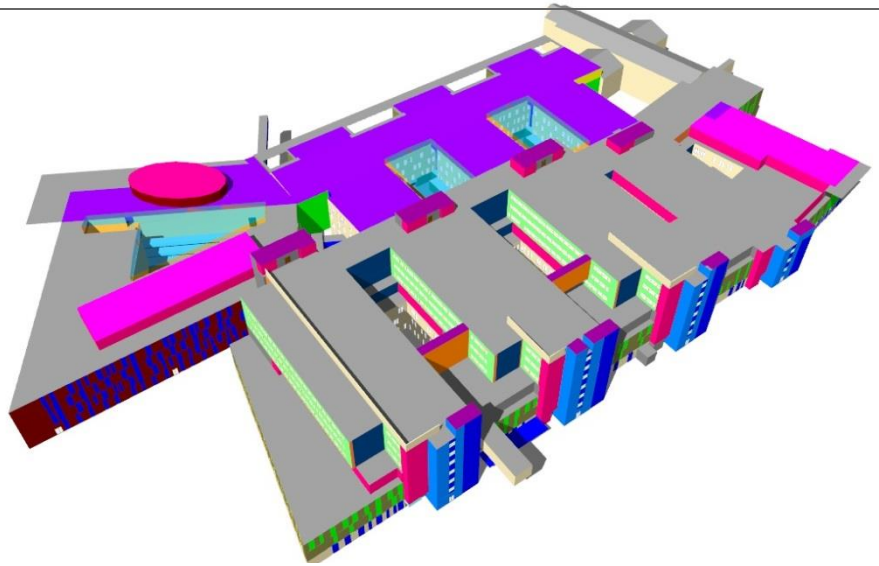


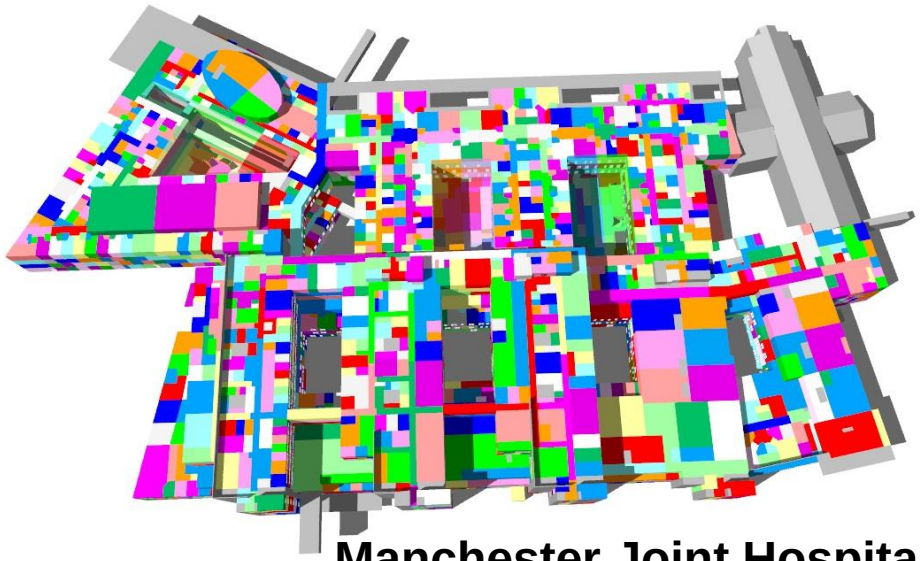
DUCTWORK



17TH EDITION WIRING

State of the art building simulation software...





Manchester Joint Hospital CEM

Manchester Joint Hospital
Simulated Energy Use

	kWh/m2/Year	kWh	GJ/yr	GJ/100m3
Heating	129.82	12,769,429.05	45969.94	9.228
DHW	49.69	4,887,957.47	17596.65	3.532
Cooling	32.75	3,221,054.39	11595.80	2.328
Fans	78.00	7,672,788.00	27,622.04	5.545
Pumps	27.83	2,737,780.78	9856.01	1.978
Lighting	59.83	5,884,837.60	21185.42	4.253
Small Power	80.76	7,943,954.10	28598.23	5.741
Catering	1.22	120,000.00	432.00	0.087
IT Equip	16.01	1,575,048.00	5670.17	1.138
Humidification	10.55	1,037,554.44	3735.20	0.750
Theatre Canopies	8.32	818,384.00	2946.18	0.591
Med Plant	1.83	180,000.00	648.00	0.130
Lift & Entrance Doors	7.22	710,155.31	2,556.56	0.513
Refrigeration	0.34	33,408.00	120.27	0.024
Total (excluding CSSD)	**504.17**	**49,592,351.14**	**178,532.46**	**35.837**
CSSD (electrical)	6.60	649,284.00	2,337.42	0.469
CSSD (gas)	20.24	1,990,476.00	7,165.71	1.438
Total (including CSSD)	531.00	52,232,111.14	188,035.60	**37.745**

Monitored energy use ~**39**GJ/100m3

Tas Daylight

Lightworks in Tas

Radiosity and Ray Tracing

Radiosity is computed in object-space, diffuse light

View independent-whole space analysis allows camera to move

Ray tracing is an image-space algorithm, specular light

If the camera is moved, we have to start again

Tested against CIE 171:2006 test cases to assess the accuracy of lighting computer programs

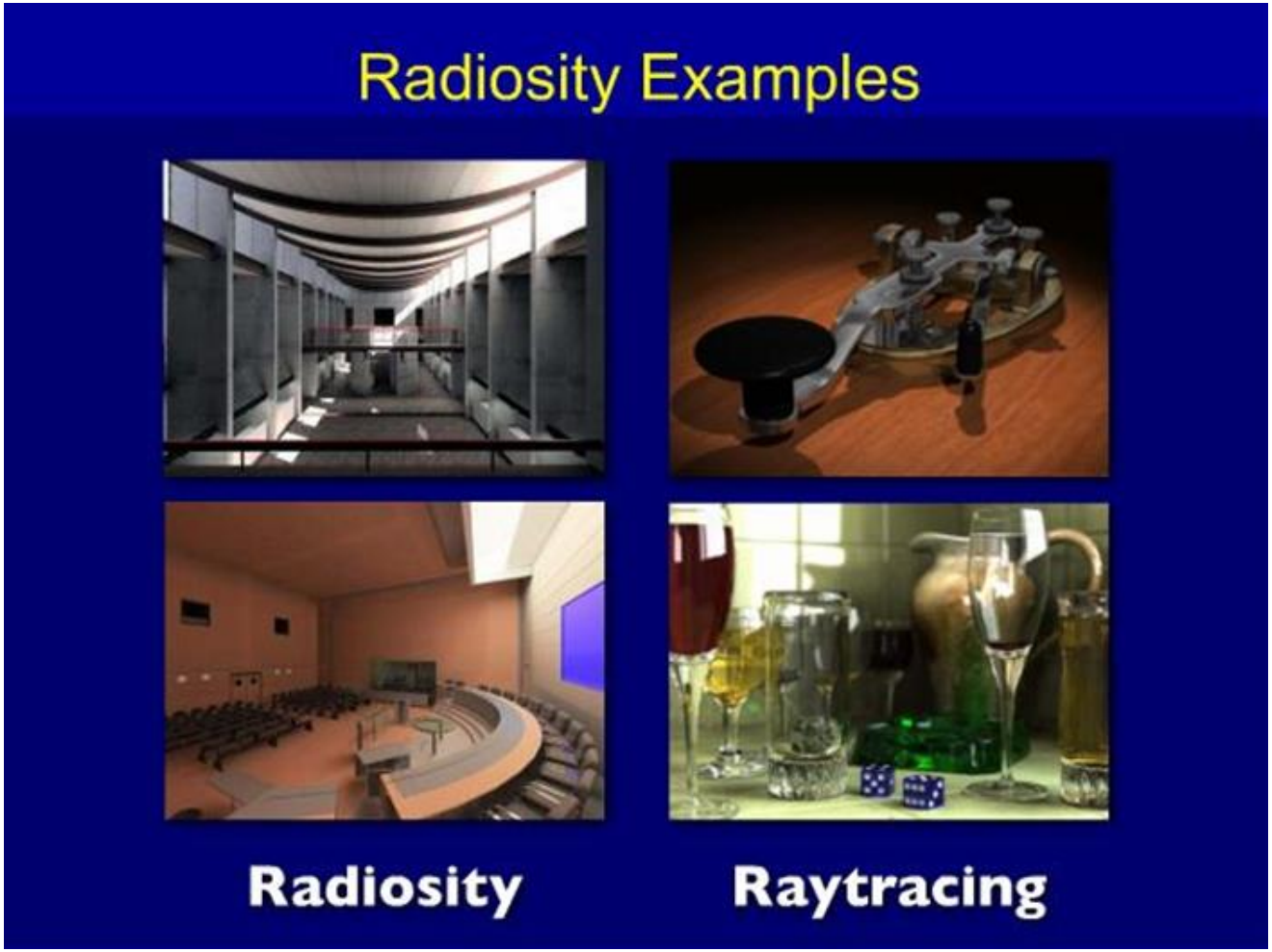
Tas daylight (radioioty and Ray trace) Daylight only imbedded with building simulation

Radiance (Ray trace only) Daylight with some artificial lighting coupled to building simulation

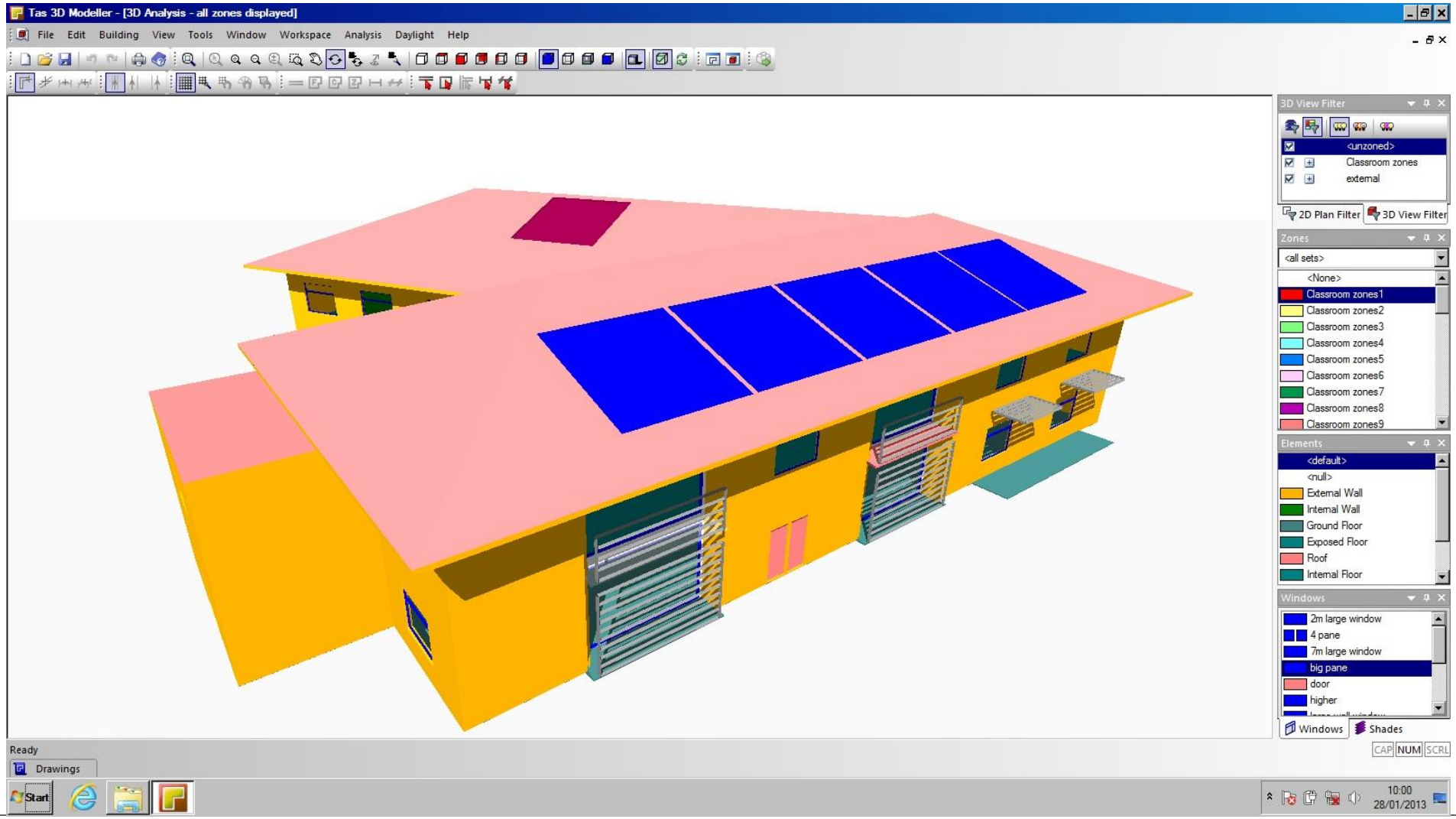
Agi32 (Radiosity and Ray trace) Mainly artificial lighting but can do daylight

Dialux (Radiosity and Ray trace) Mainly artificial lighting but can do daylight

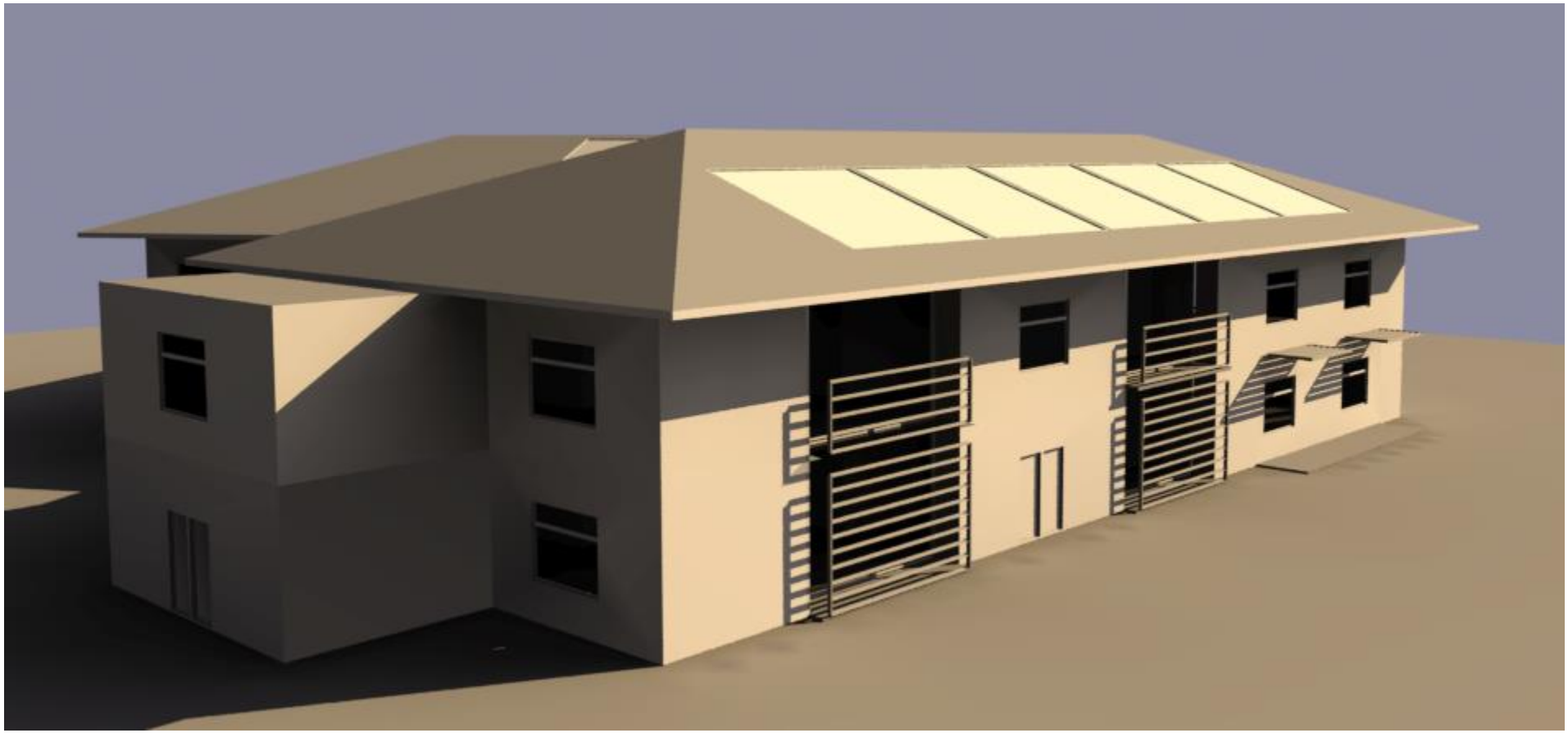
Tas Daylight



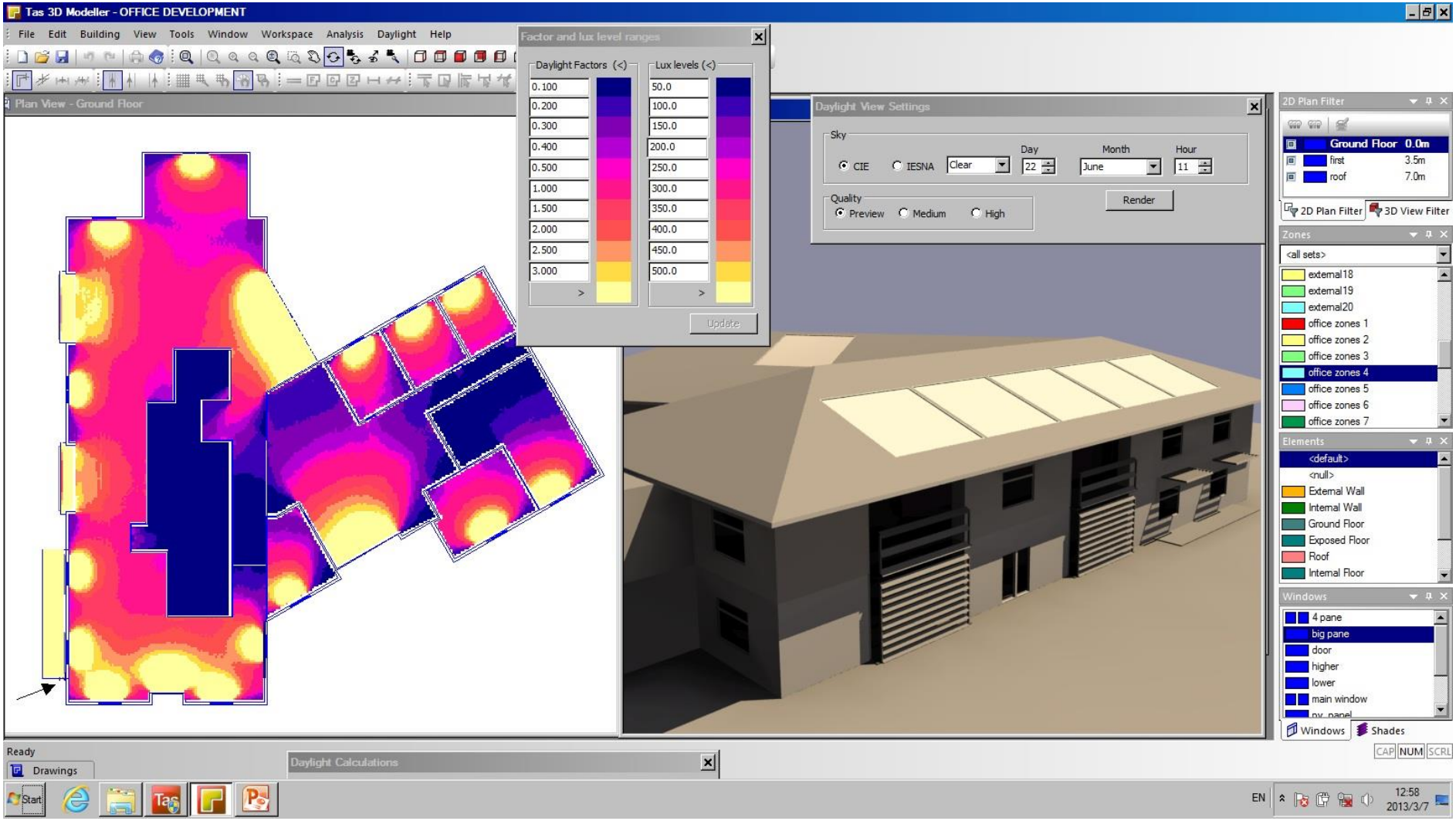
Tas Daylight



Tas Daylight

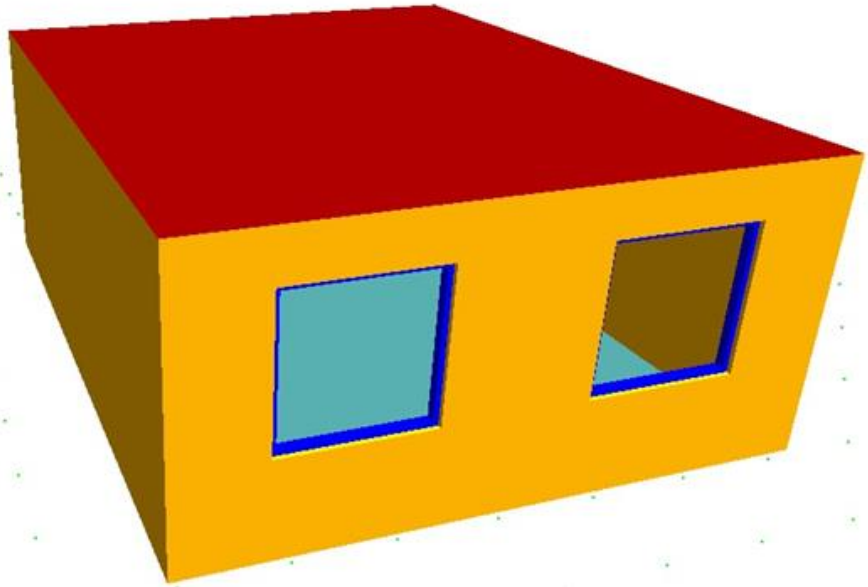


Tas Daylight

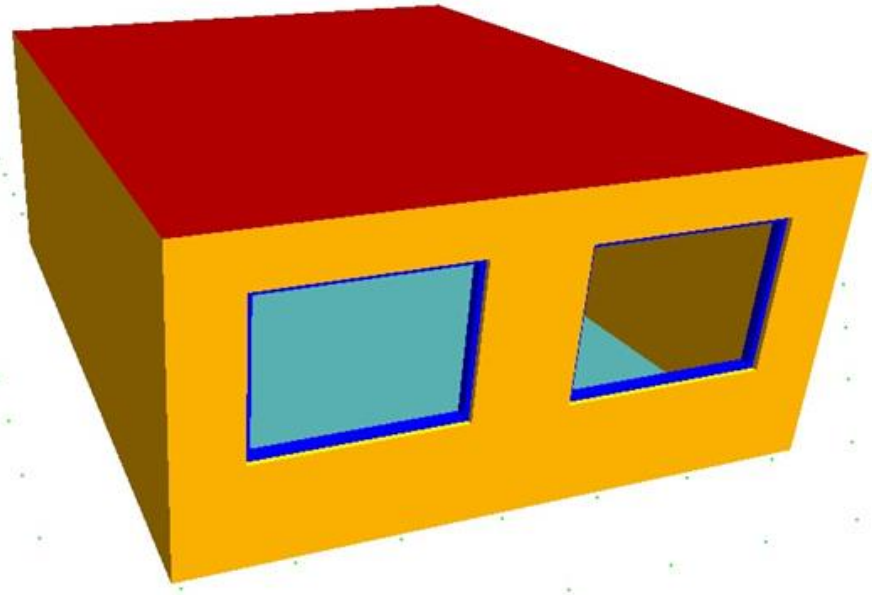


Tas Daylight

Tas Daylight



Tas Radiosity window size for 2% DF

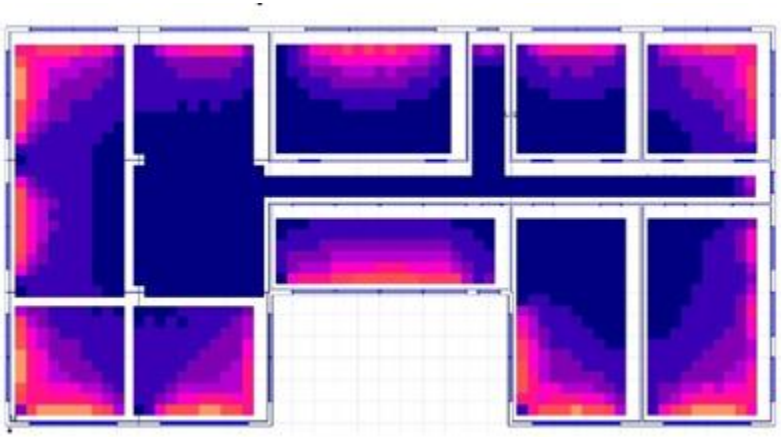


Split Flux window size for 2% DF

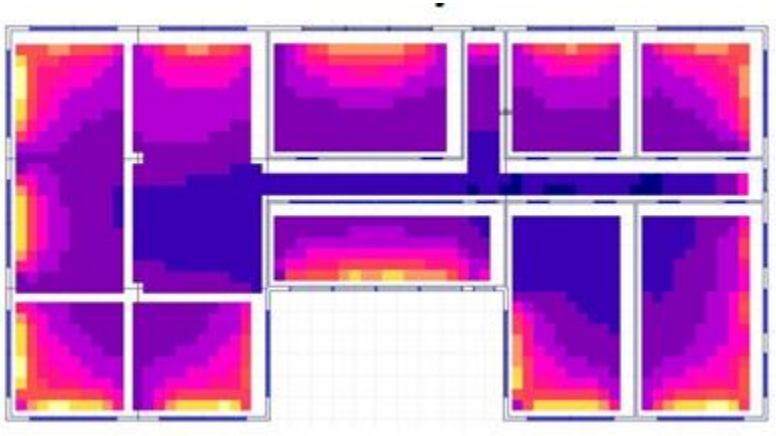
30% more window area is required with the Split Flux method to achieve the same daylight factor, which means 30% more solar gain!

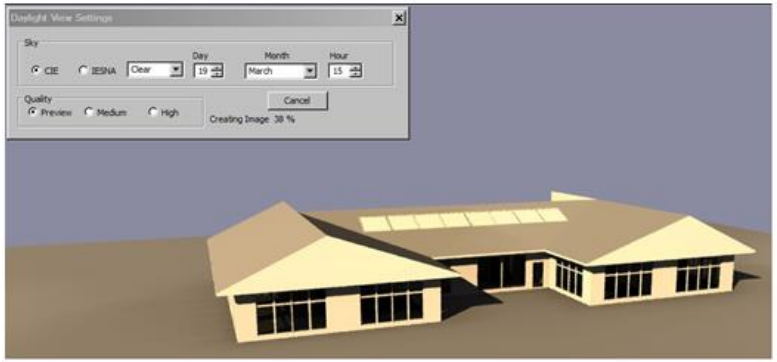
Tas Daylight

Split Flux



Radiosity

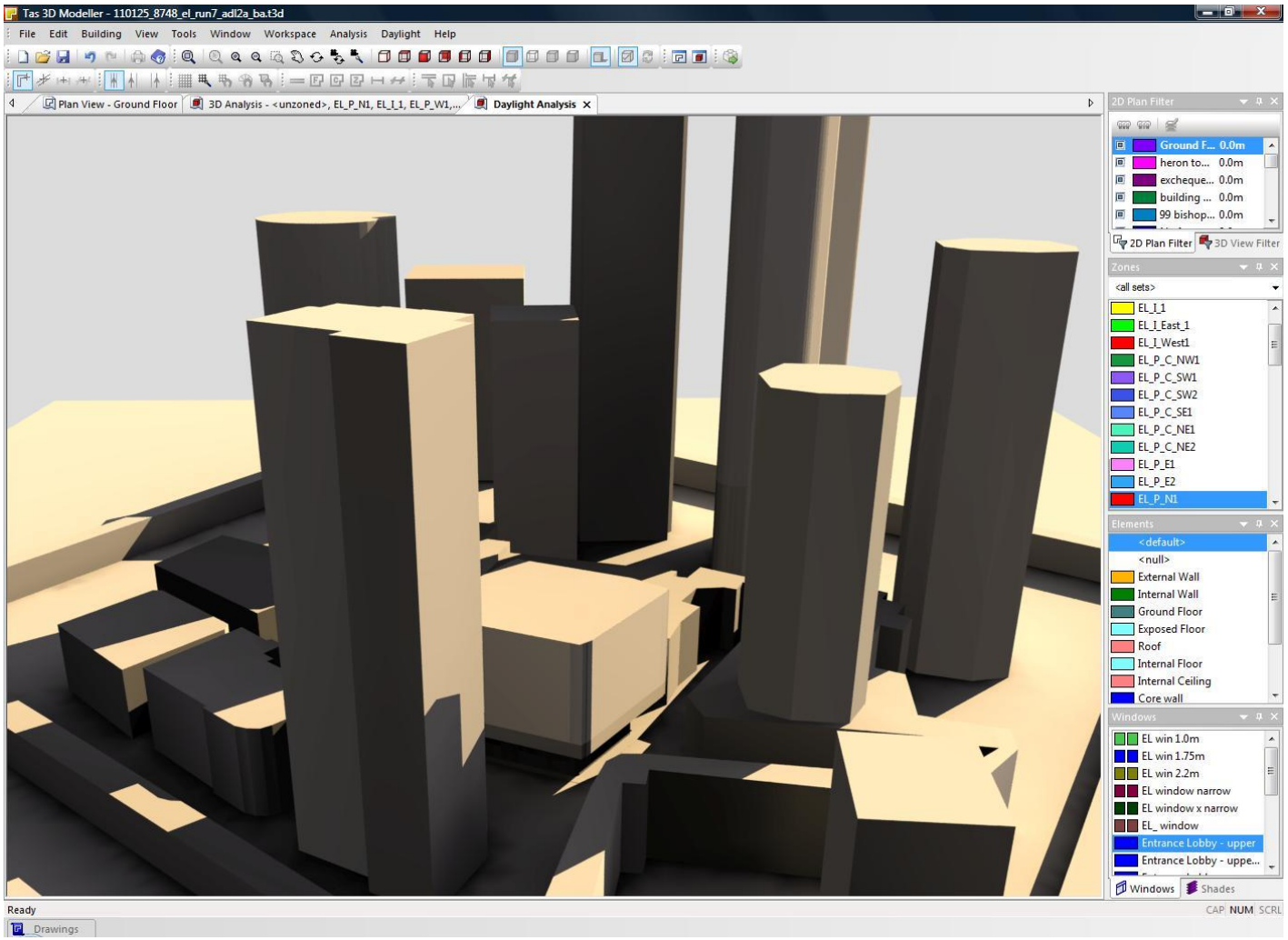




Radiosity average DF ~4 %
85% of area >2%

Split Flux average DF ~2 %
45% of area >2%

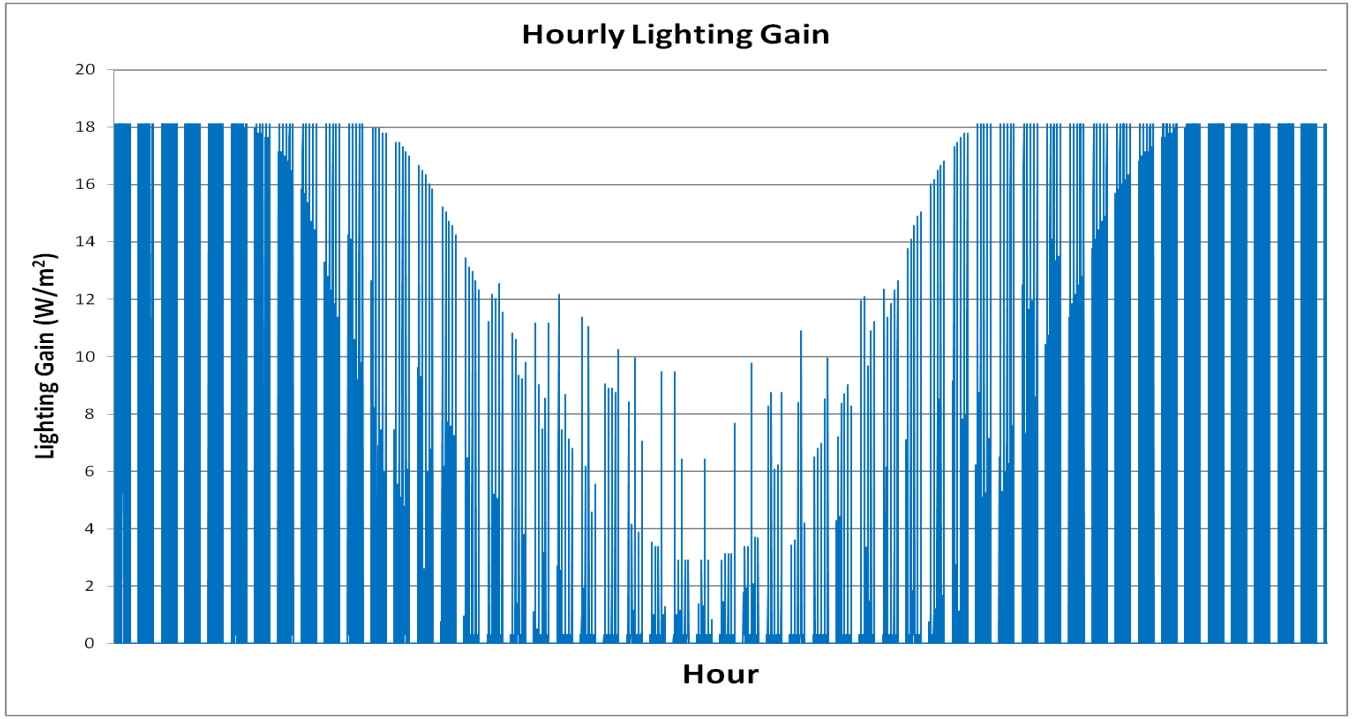
Cityscape Daylight Simulation



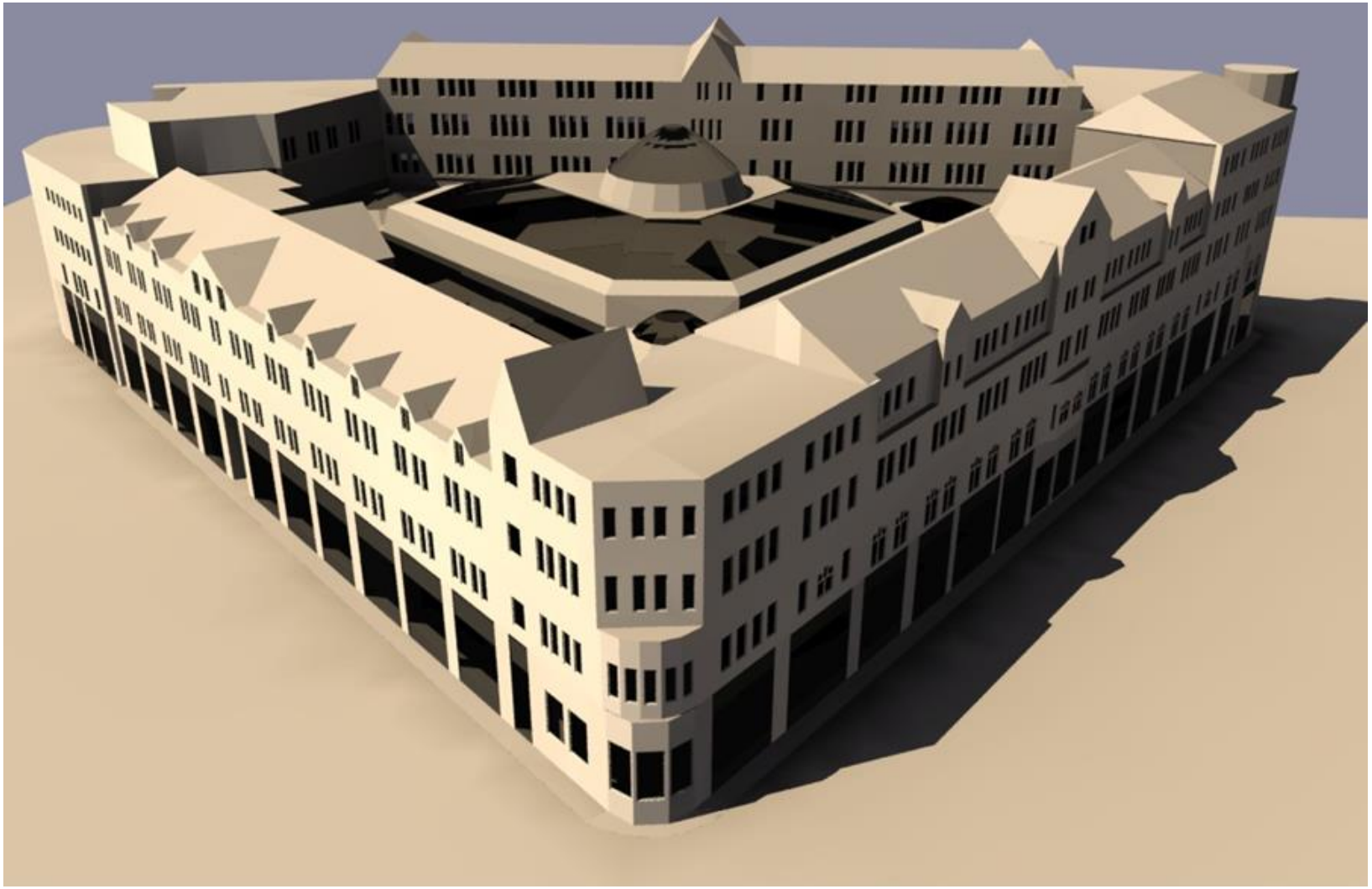
Tas Daylight

Climate based modelling of hourly daylight based saving on artificial lighting energy use.

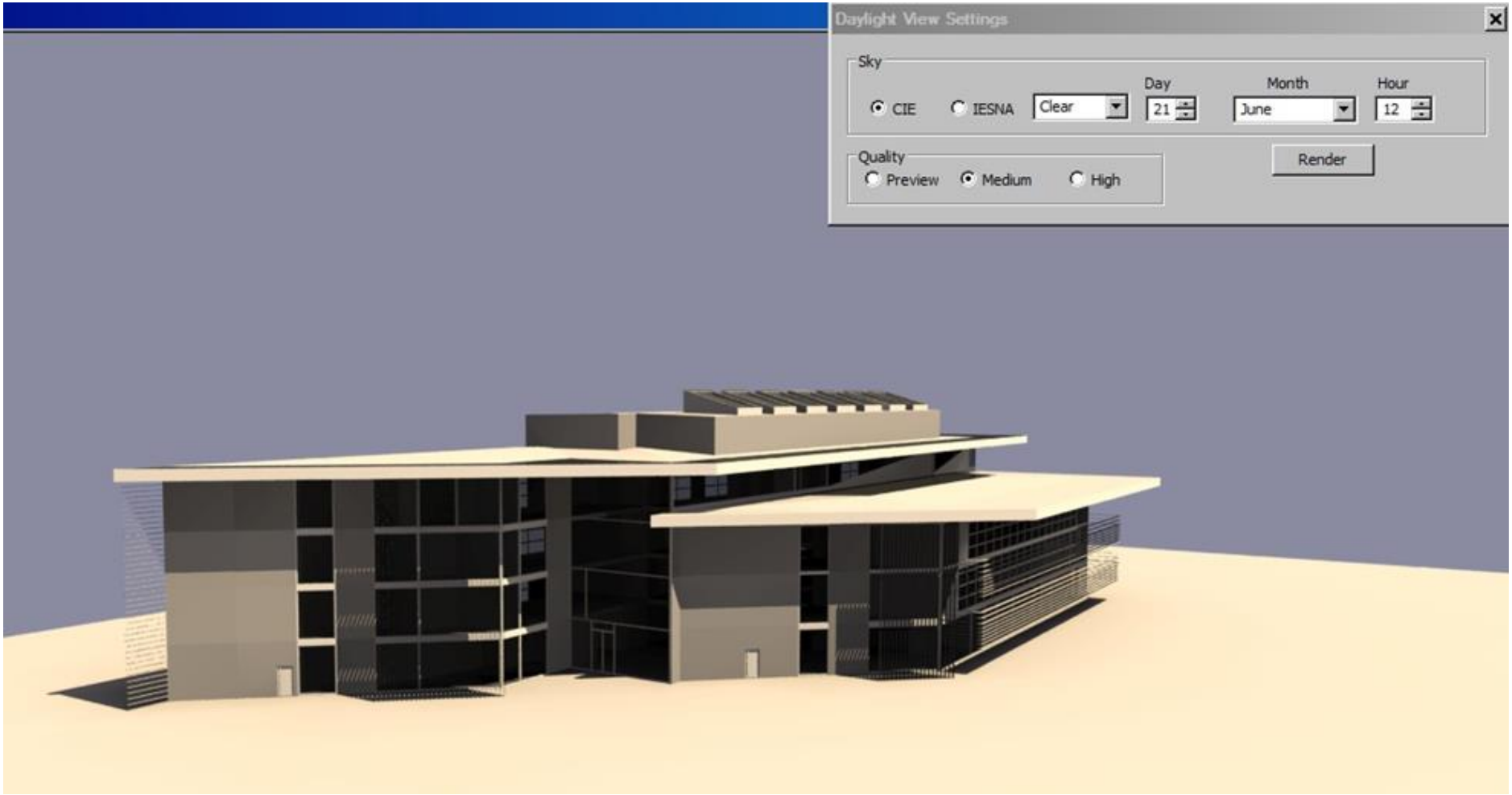
Uses Luminous Efficacy to convert sky solar data to sky lux through the year.



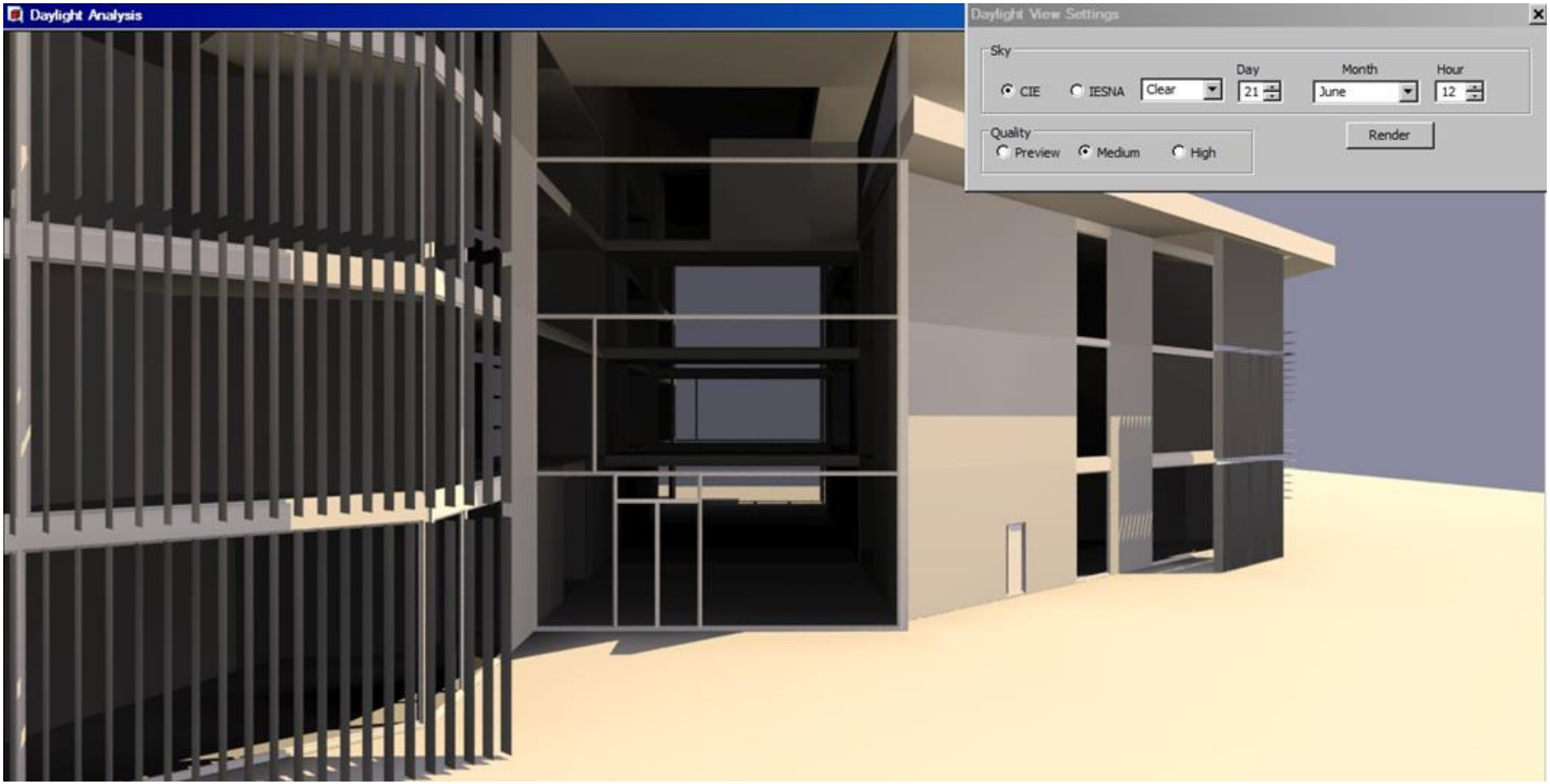
Tas Daylight solar irradiance render (coming soon)



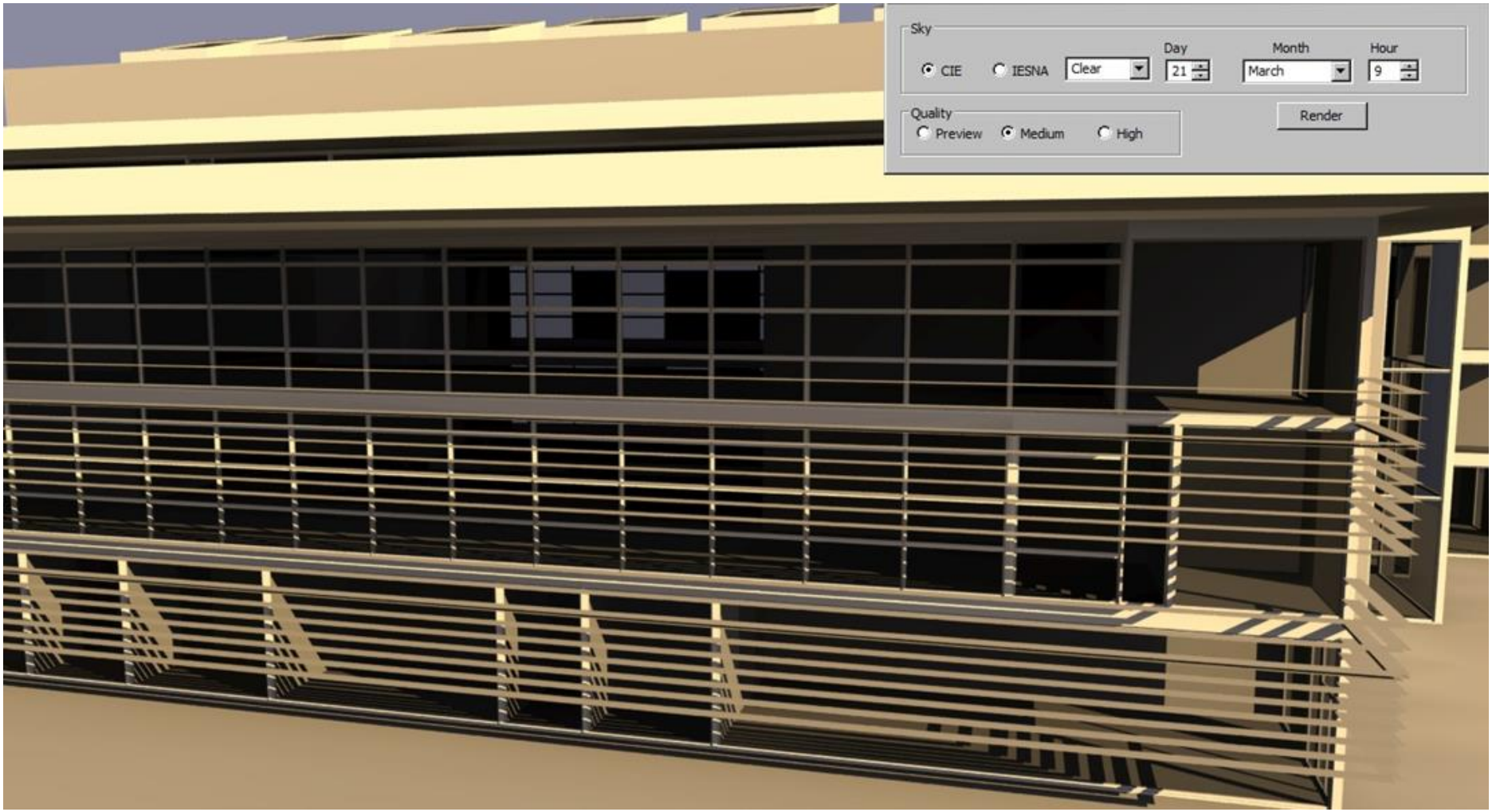
Tas Daylight



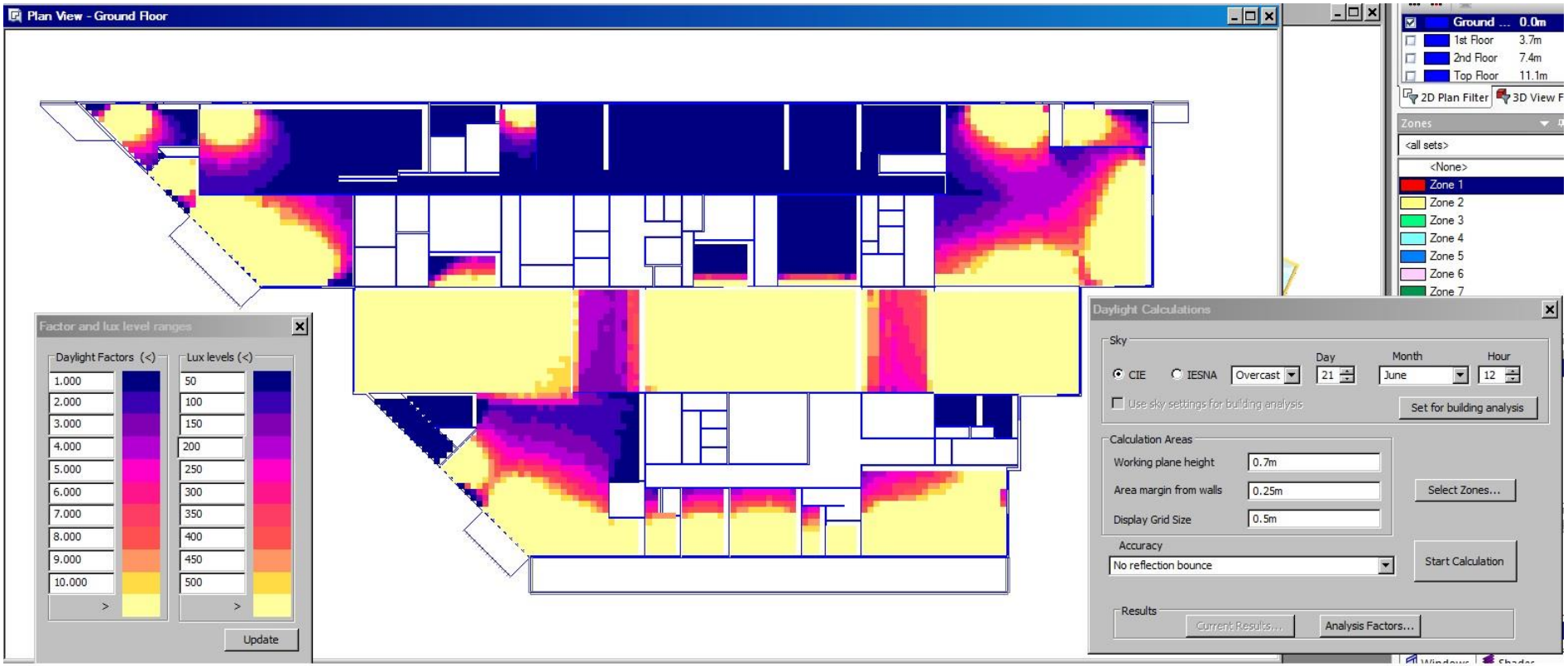
Tas Daylight



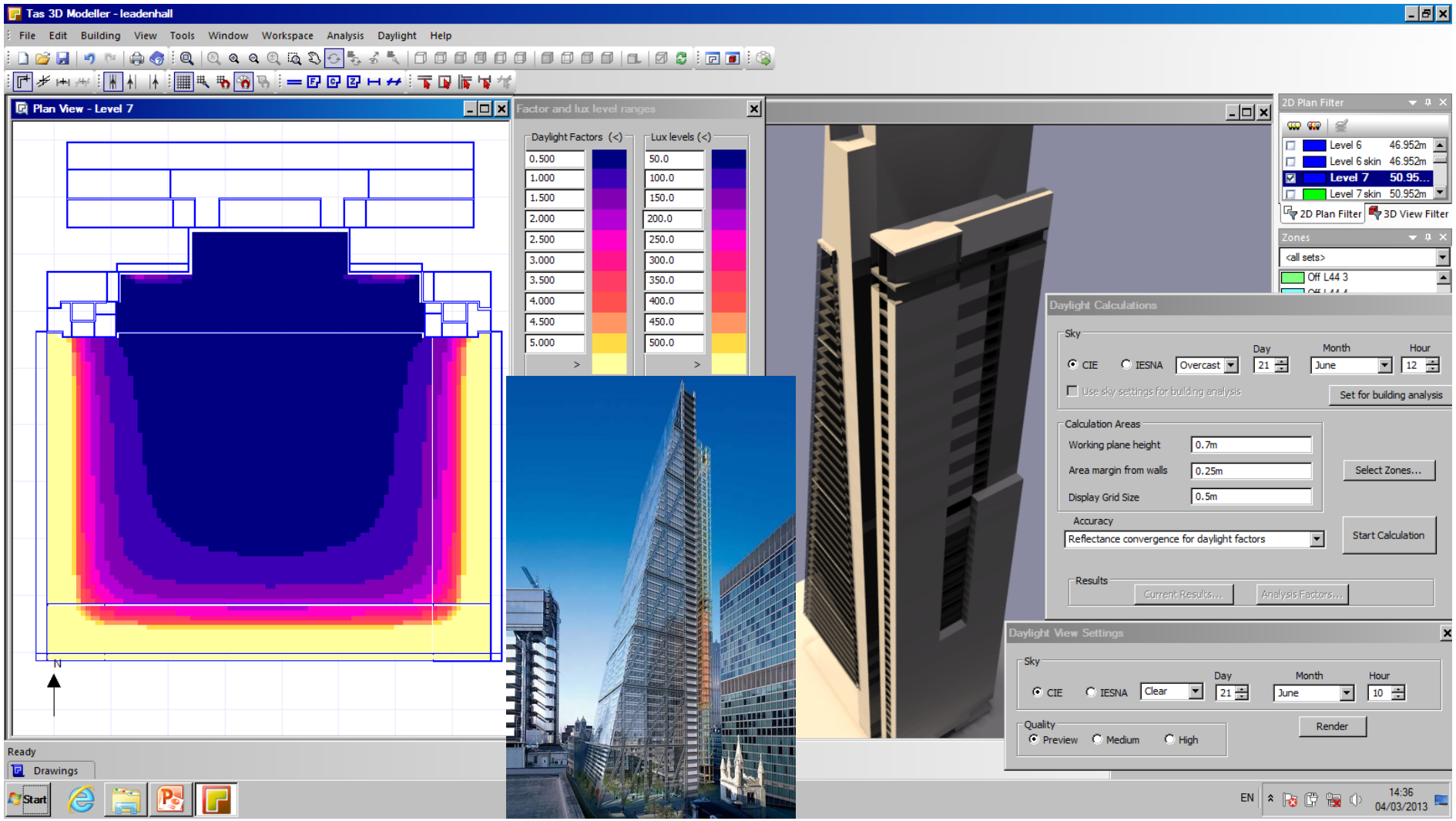
Tas Daylight



Tas Daylight



Tas Daylight



Tas Daylight material render (coming soon)