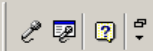
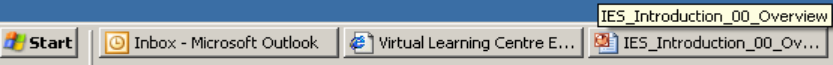


Introduction to IES

Overview of the software



ICON for IES





IES Virtual
Environm...



ModelBuilder

ModelIT - Untitled.mit - Plan : Model

File Edit View Settings Draw Utilities Help

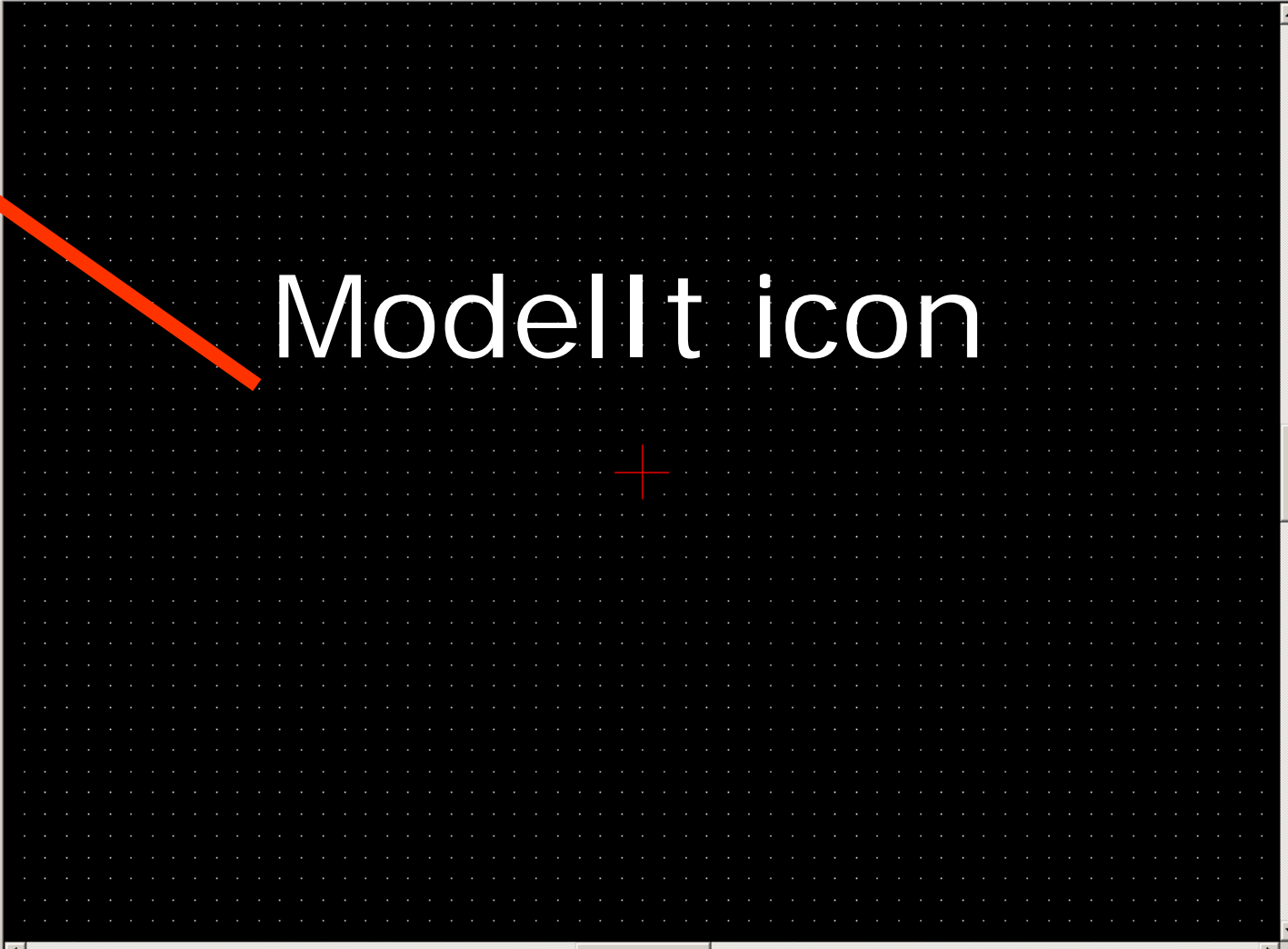
Colour 01 Layer 01 [Grid icons] [View icons]

[Navigation icons] [Tool icons]

ModelIT: Building modeller

CompLib: Component modeller

Model Tree: Model, Rooms



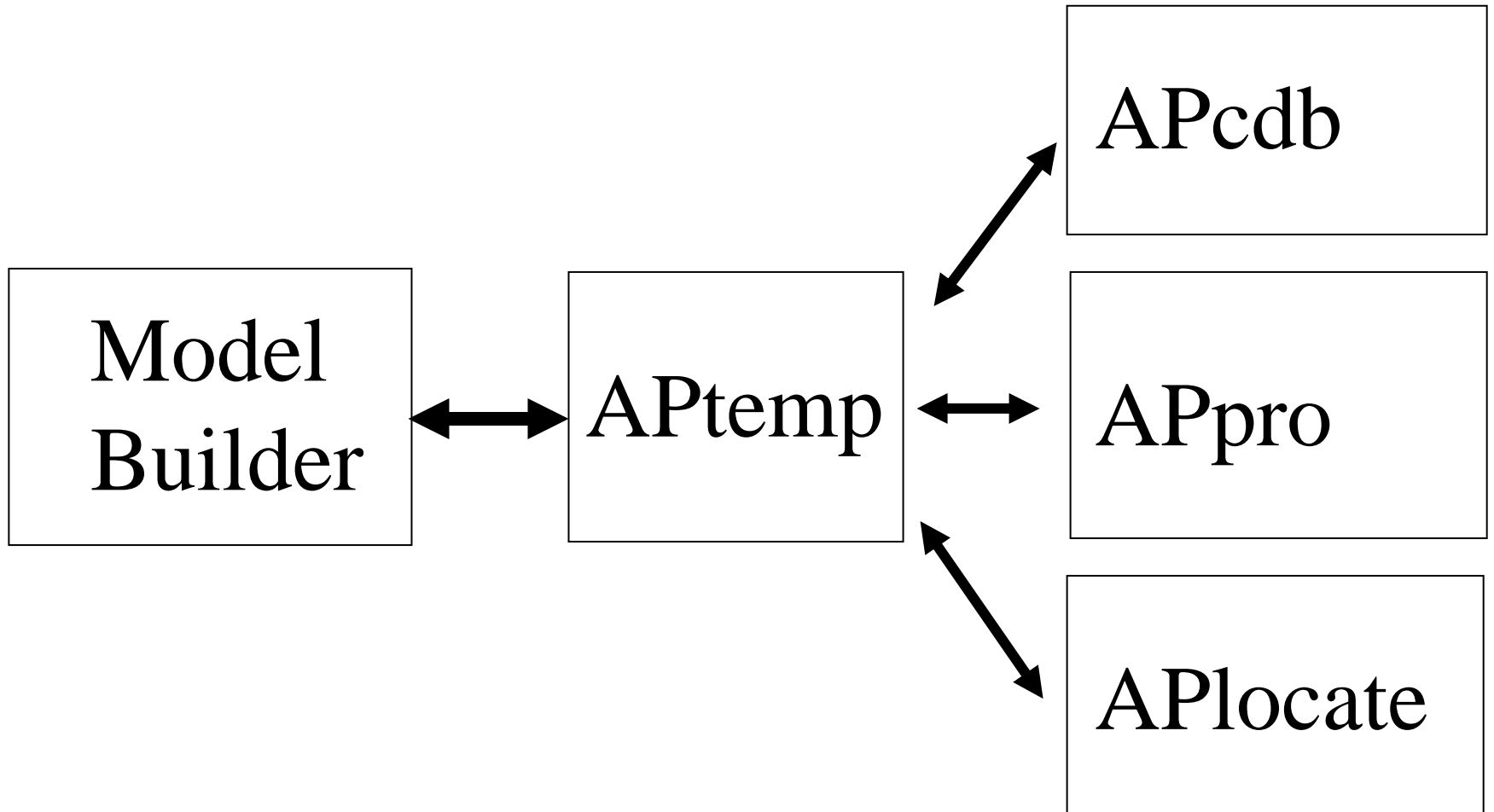
ModelIt icon

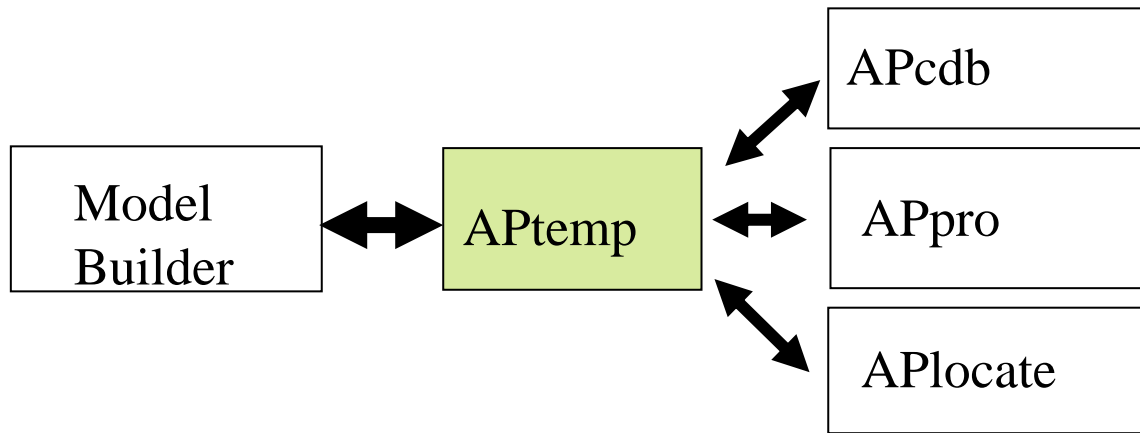
- Thermal
- Lighting
- Solar
- Value
- Cost
- Evacuation
- Mechanical
- Electrical
- CFD

Plan [View icons] [Model] [t.] [Navigation icons] [-3.00, -7.00, 0.00]

	Room Name	Room ID	Volume (m³)	Floor Area (m²)	Colour	Layer
♥						

ModellIt





Templates hold the characteristics of spaces and the model.

Any number of templates can be created and these then can be easily assigned to various spaces.

This means that the characteristics of each individual space does not have to be separately defined.

ModelBuilder

ModellT: Building modeller

CompLib: Component modeller

Model - Untitled.mit - Plan: Model

File Edit View Settings Draw Utilities Help

Colour 01 Layer 01

Building Template Manager

Project Template File: c:\Documents and Settings\absmaw\Local Settings\Temp\Untitled.mtd

Template Types

- Room Attributes
- Constructions
- Macroflo Clipping Types
- Thermal Conditions
- Electric Light
- Radiance Surface Properties

Thermal Conditions

Template: default

Import Templates

Add Template

Remove Template

Apache Profiles Database

Heating Cooling Casual Gains Air Exchanges

Heating Device Radiant Fraction: 0.3

Heating Zone: Heating zone

Save OK Cancel

Template manager

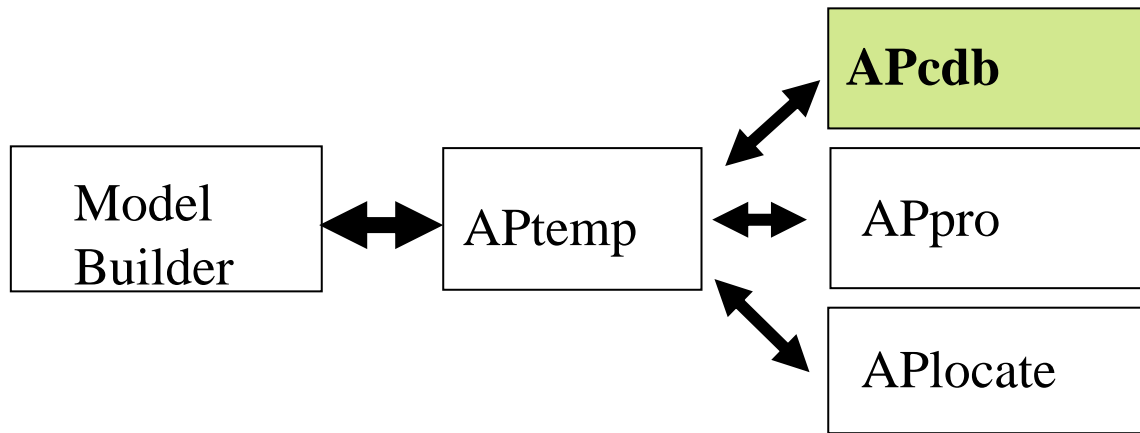
APProfiles

APconstructiondb

- Thermal
- Lighting
- Solar
- Value
- Cost
- Evacuation
- Mechanical
- Electrical
- CFD

Plan Model -15.00, 3.00, 0.00

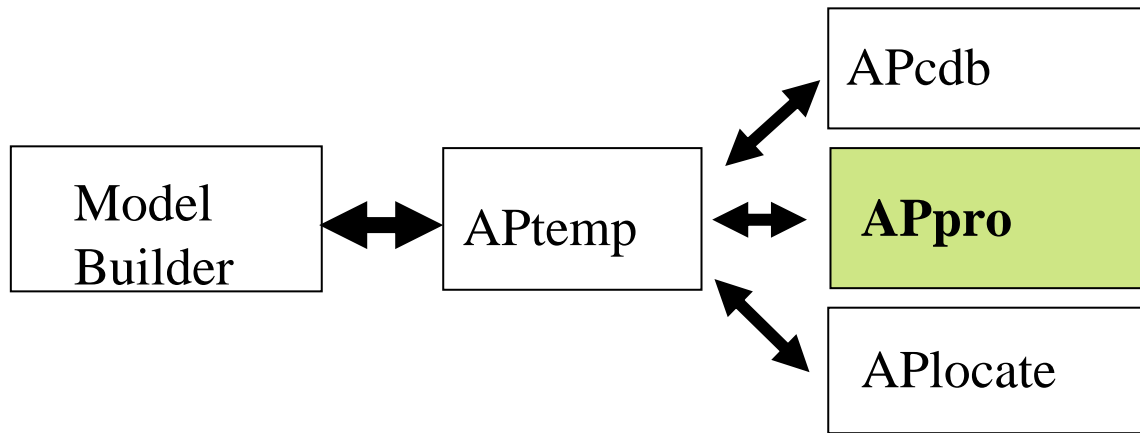
Room Name	Room ID	Volume (m³)	Floor Area (m²)	Colour	Layer



Construction data base

There is a library of materials that can be assembled into various constructions.

Thus a number of different types of walls, floors and ceilings can be designed and then assigned to a template that defines a space.

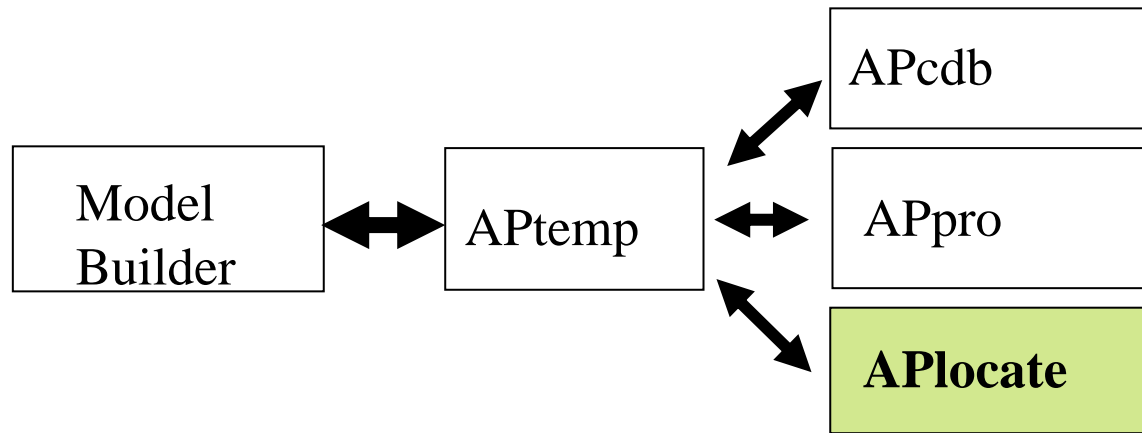


Profiles

Spaces are occupied at different periods and by changing numbers of people.

Heating and cooling systems, electric lighting and many other loads are switched on and off at different times and have variable loads.

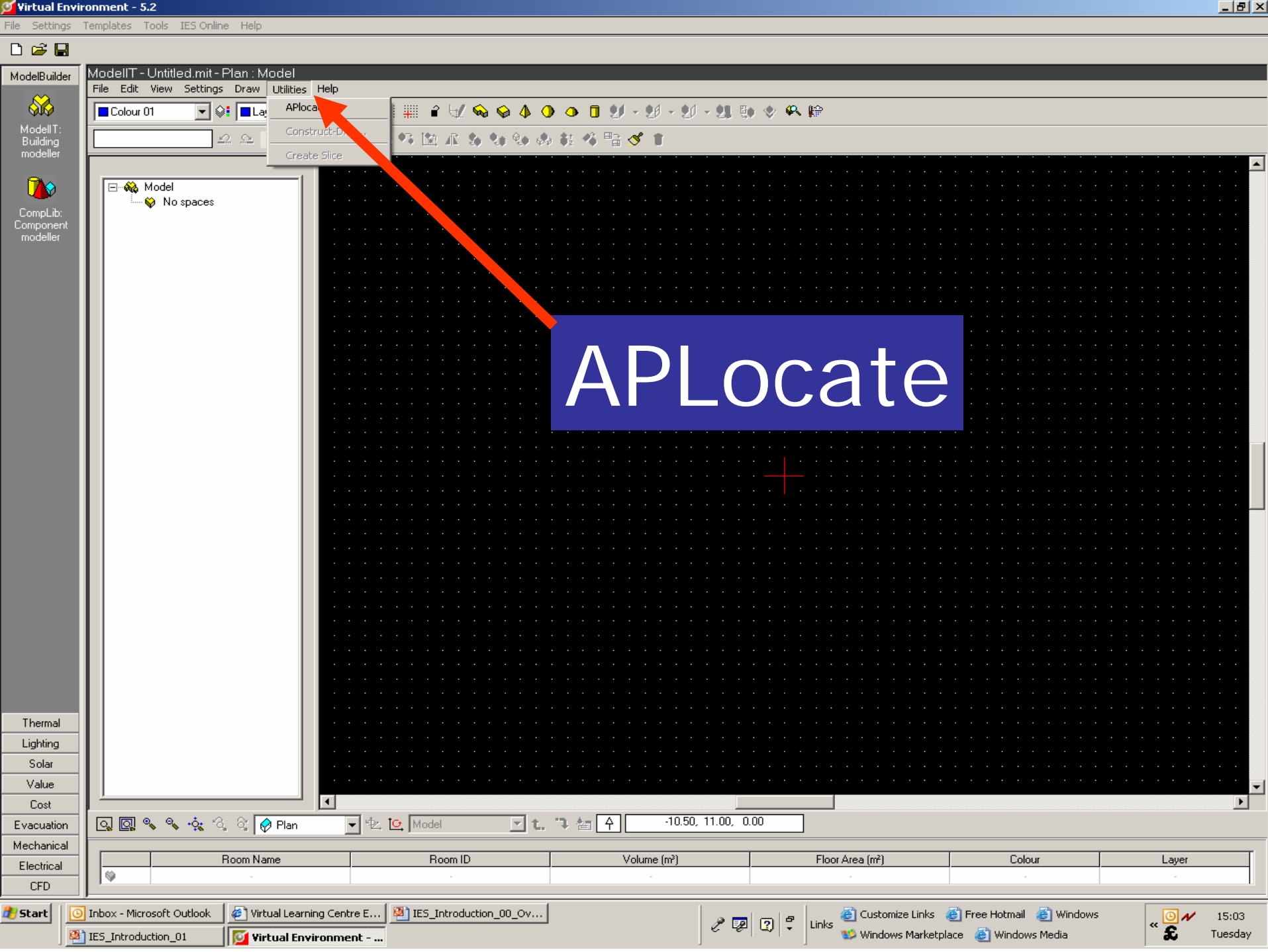
These time dependent factors are specified using profiles, which can vary over the day, the week and year.



Location

The location of the building will be critical to the heating loads, the sunlight and cooling loads.

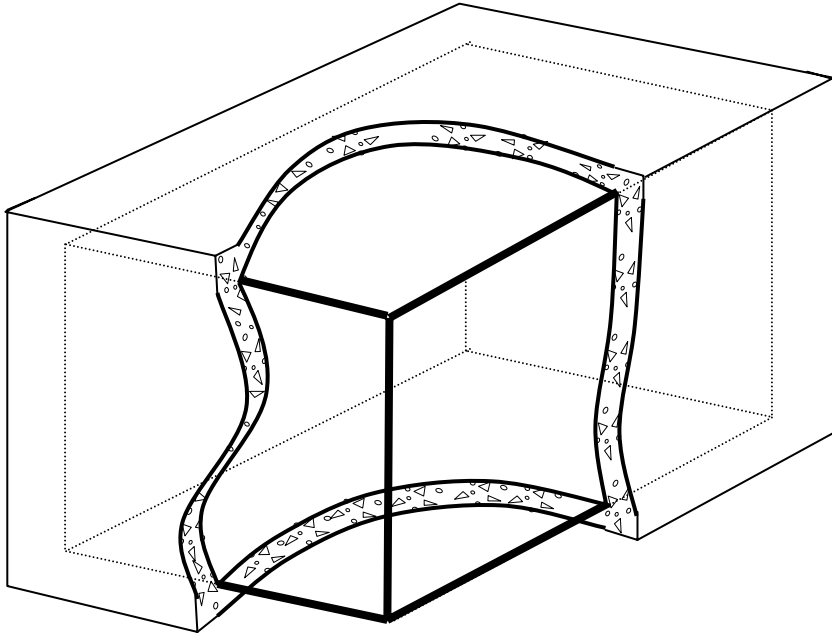
The data associated with a particular climate may be accessed using this part of the program. For full simulation over a whole year, then a weather data file is needed, but climate averages may be used for estimates of maximum heating and cooling loads.



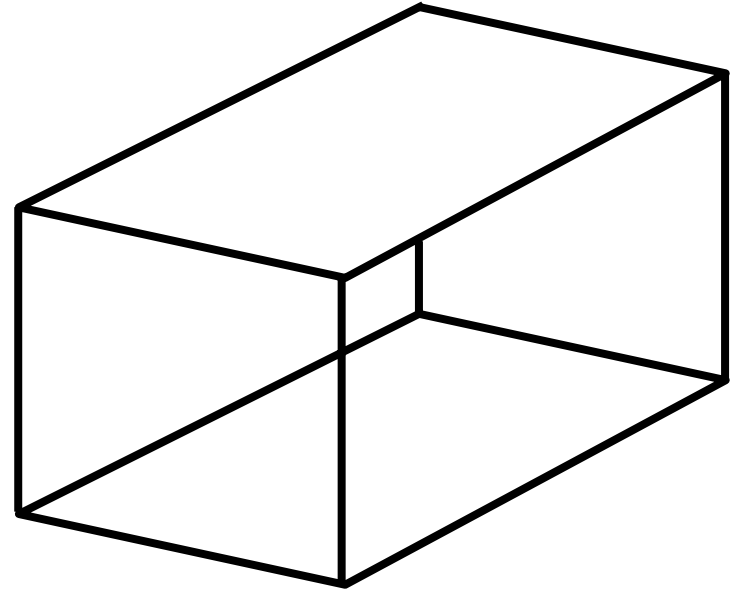
APLocate

Room Name	Room ID	Volume (m³)	Floor Area (m²)	Colour	Layer

Volumes modelled

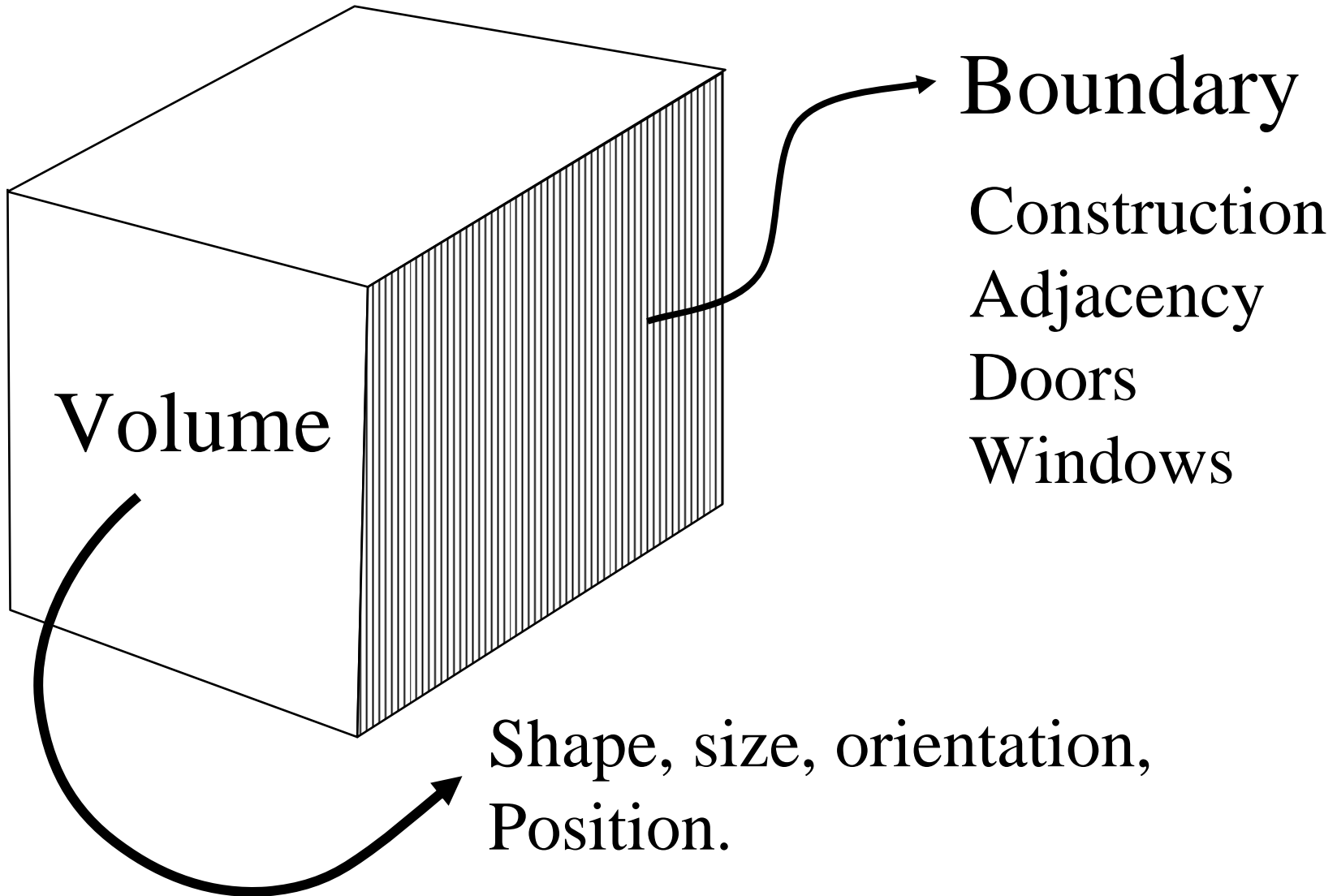


Building volume

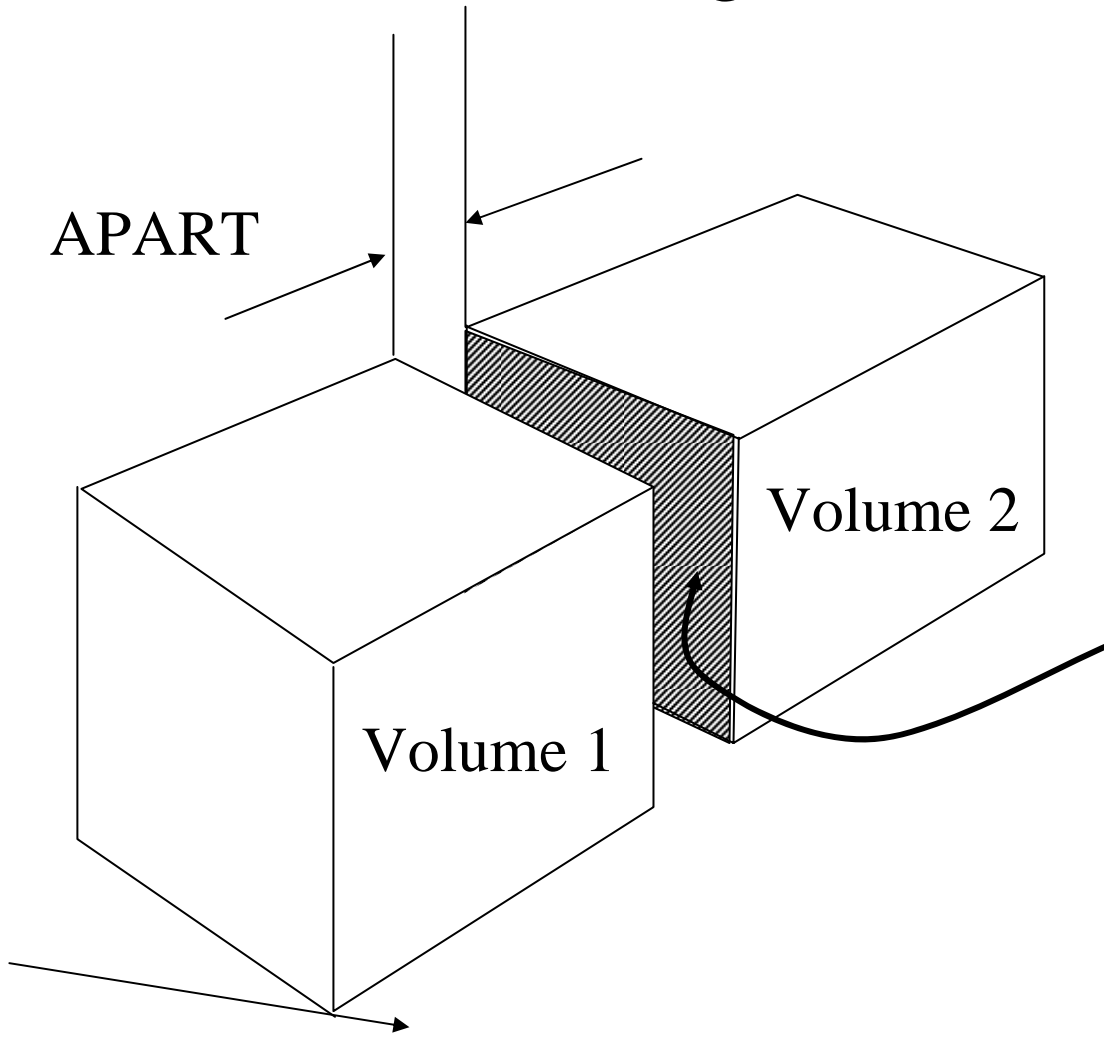


Model volume

Basis of Model

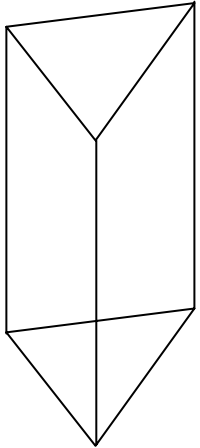


Adjacency

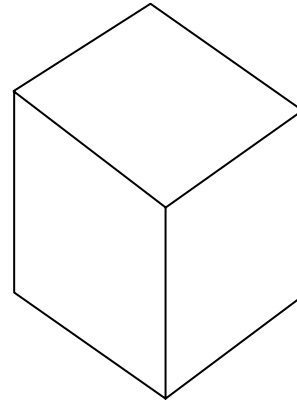
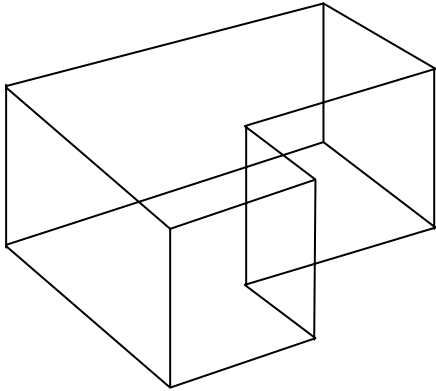


Surface is external
if
 $\text{Apart} > \text{Default}$

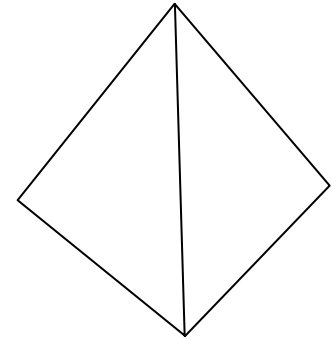
Shapes of Volumes



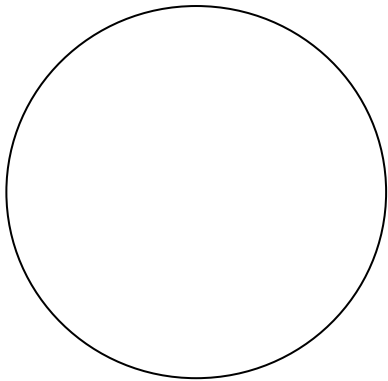
Extruded shapes



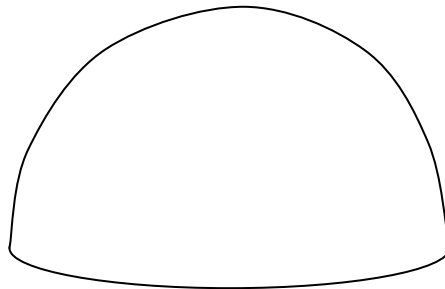
Prism



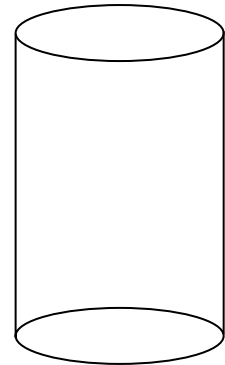
Pyramid



Sphere

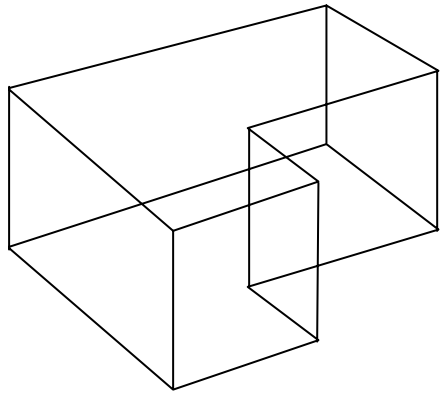


Hemisphere

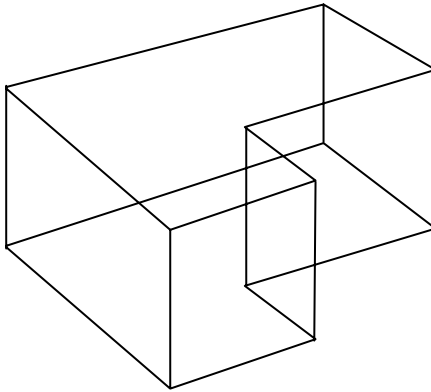


Cylinder

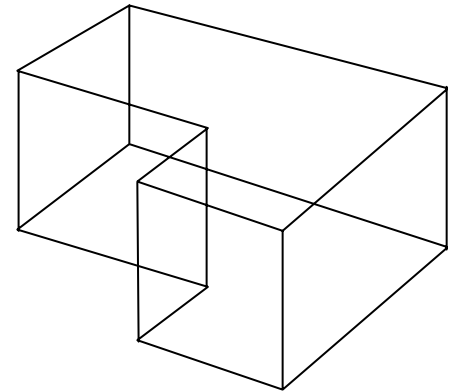
Manipulating Volumes



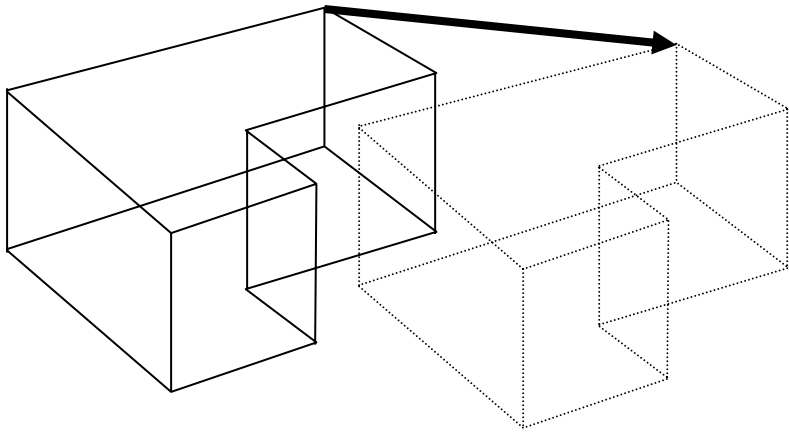
Volume



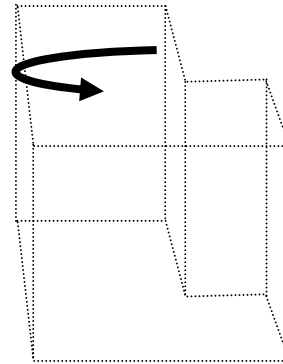
Copied



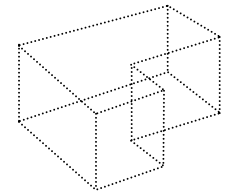
Mirrored



Moved

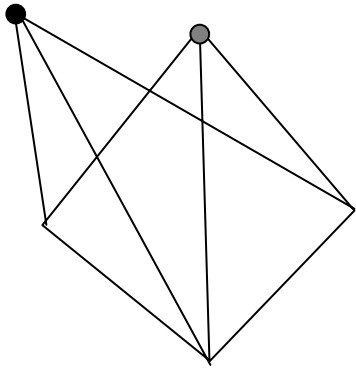


Rotated

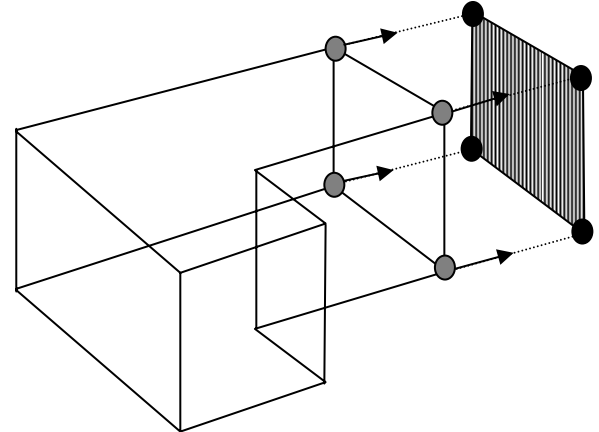


Scaled

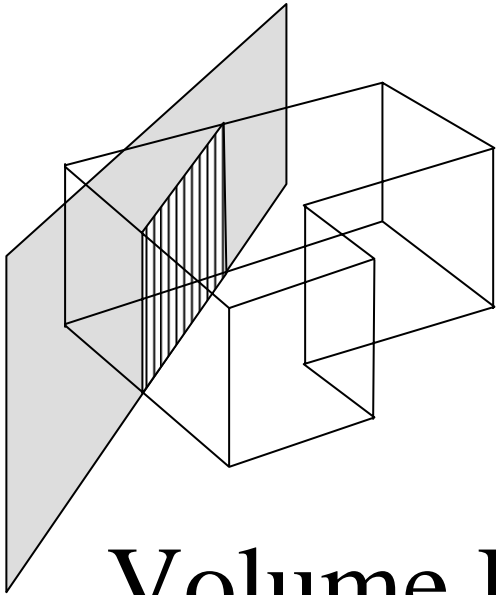
Editing Volumes



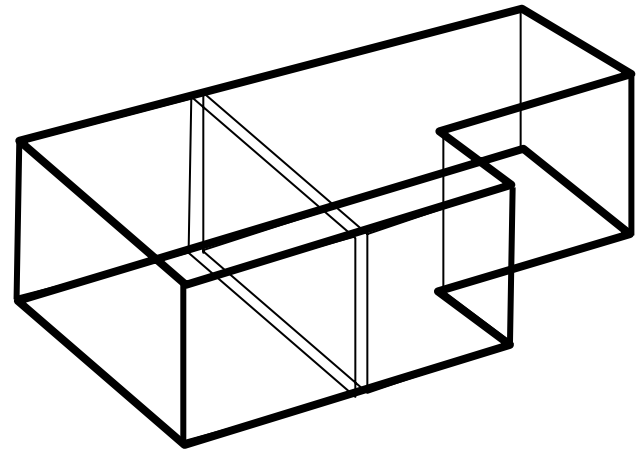
Vertex moved



Vertices moved



Volume Divided



Volumes combined



ModelBuilder

ModelIT - Untitled.mit - Plan : Model

File Edit View Settings Draw Utilities Help

Thermal

Apache: Thermal calculation and simulation

ApacheHVAC: HVAC system simulation interface

MacroFlo: Multi-Zone Air Movement

VISTA: Results analysis

APreview: APACHE-calc results viewer

Lighting
Solar
Value
Cost

Evacuation

Mechanical

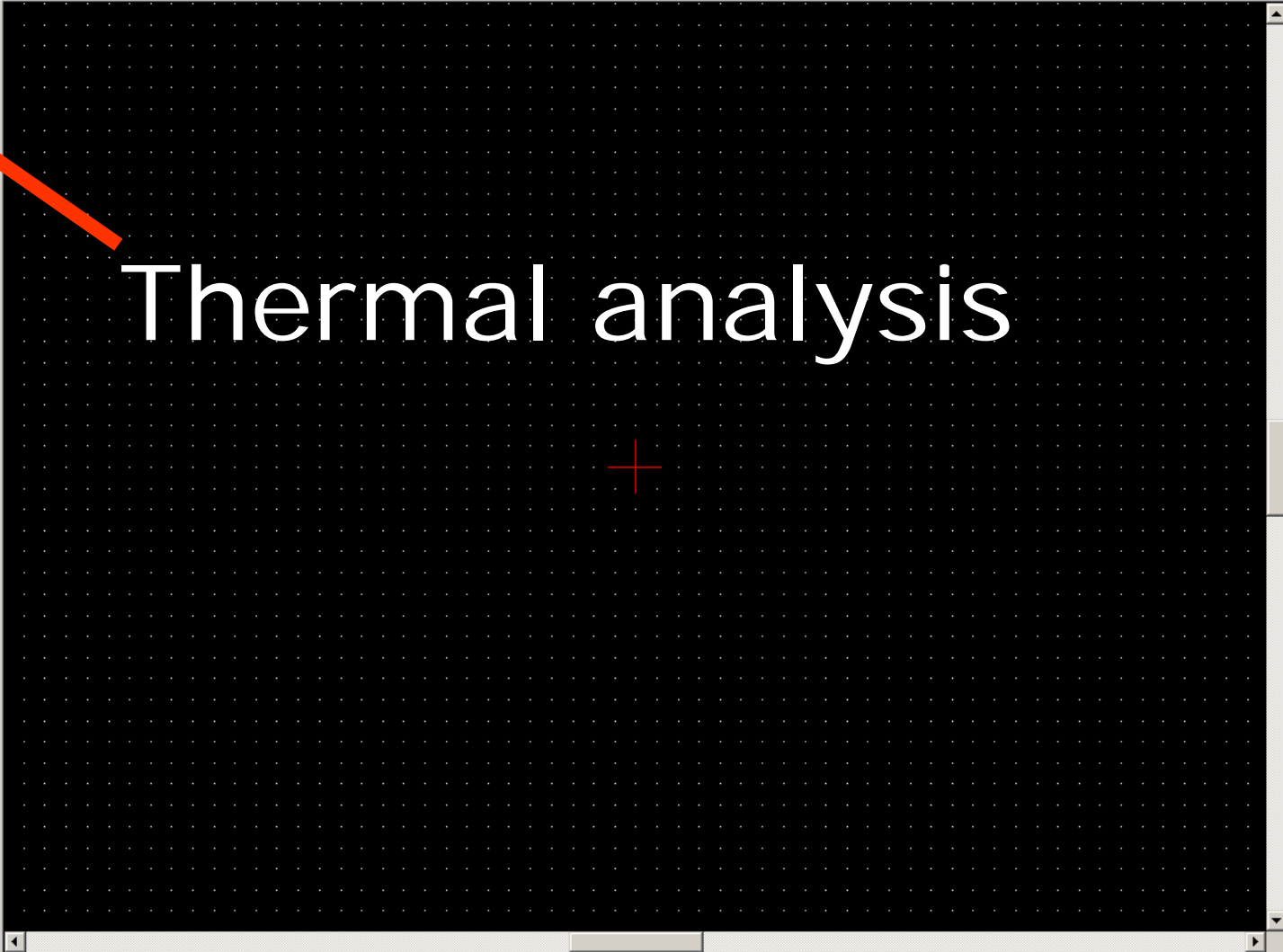
Electrical

CFD

Colour 01 Layer 01

Model

- No spaces



Thermal analysis

Plan Model -15.00, -7.00, 0.00

Room Name	Room ID	Volume (m³)	Floor Area (m²)	Colour	Layer



ModelBuilder

Thermal

Lighting

Radiance:
Lighting
simulationFlucs:
Artificial/natural
lighting design
and analysisRadPicView:
Radiance image
viewer

Solar

Value

Cost

Evacuation

Mechanical

Electrical

CFD

ModelIT - Untitled.mit - Plan : Model

File Edit View Settings Draw Utilities Help

Colour 01 Layer 01



Plan Model -10.50, -10.50, 0.00

	Room Name	Room ID	Volume (m³)	Floor Area (m²)	Colour	Layer
♥						



ModelBuilder

Thermal

Lighting

Solar



Suncast: Solar Shading Analysis

ModelIT - Untitled.mit - Plan : Model

File Edit View Settings Draw Utilities Help

Colour 01 Layer 01 [Grid icons] [Navigation icons]

Model
Spaces

Sunlight analysis

- Value
- Cost
- Evacuation
- Mechanical
- Electrical
- CFD

Plan [Navigation icons] [Model] [Coordinates: -6.00, -11.00, 0.00]

	Room Name	Room ID	Volume (m³)	Floor Area (m²)	Colour	Layer
♥						



ModelBuilder

Thermal

Lighting

Solar

Value

Cost

Evacuation

Mechanical

Indus: Duct sizing

Pisces: Heating/chilled water pipe sizing

Taps: Domestic water pipe sizing

Electrical

CFD

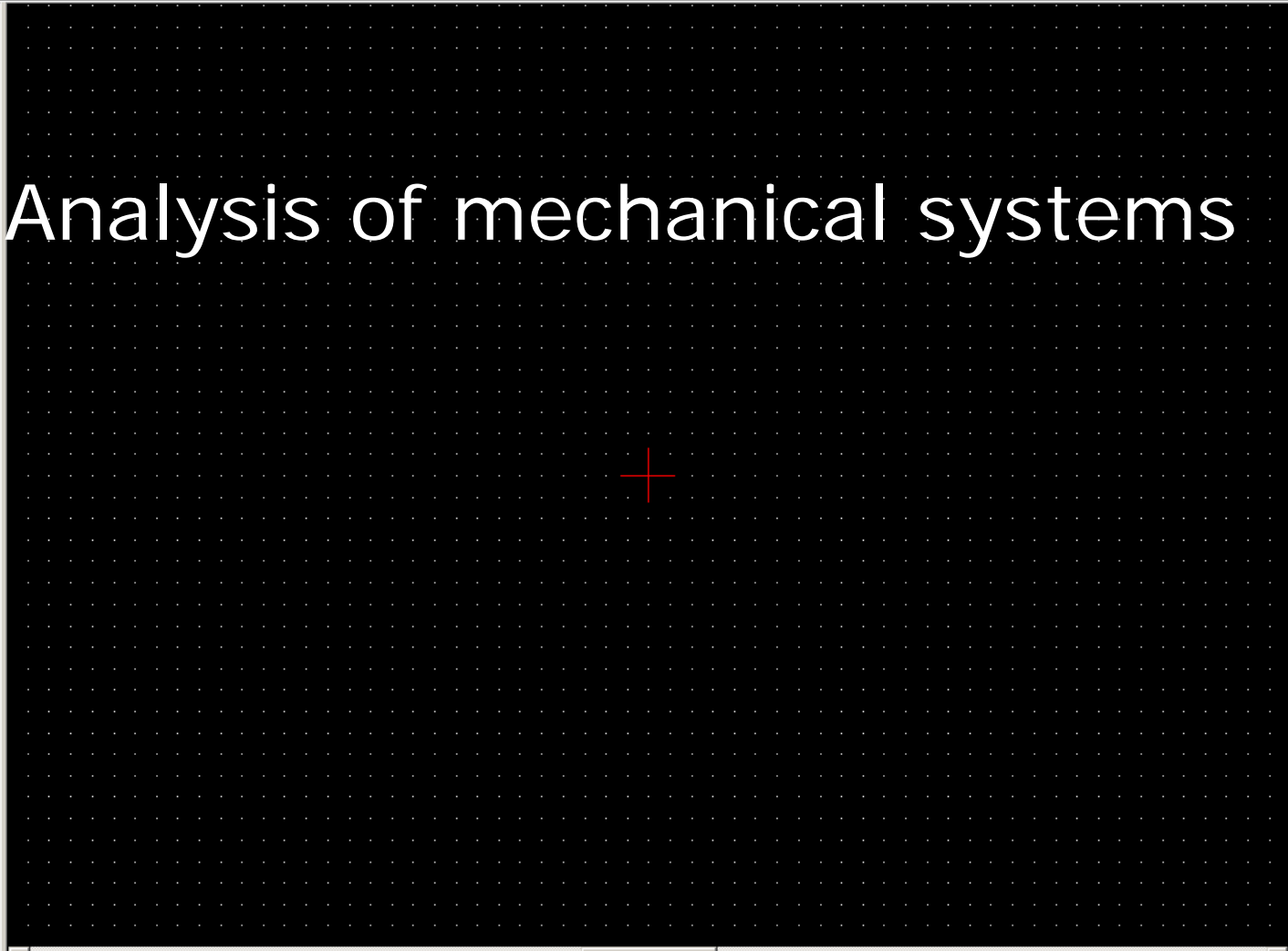
ModelIT - Untitled.mit - Plan : Model

File Edit View Settings Draw Utilities Help

Colour 01 Layer 01 [Grid icons]

[Navigation icons]

Model
No spaces



Analysis of mechanical systems

Plan [Navigation icons] Model [Coordinates: -12.00, -3.50, 0.00]

Room Name	Room ID	Volume (m³)	Floor Area (m²)	Colour	Layer
♥					