Modeling aspect	Simulation tip
General organization	Organize scene elements with different surface properties on separate layers and assign meaningful material properties to all layers (see chapter 12).
	Make sure to only use elements that your daylight simulation program can handle. For example, some simulation programs do not recognize meshes. You should always visually inspect your model within the simulation environment before running any prolonged simulations.
	Make sure that your geometry is oriented properly. A common convention is for North and East to be along the positive Y and X axes, respectively. For quality insurance, run a clear sky simulation on December 21st at noon and check the location of the shadows.
External obstructions	Model all significant neighboring obstructions, such as adjacent buildings and trees, to the extend that they provide shading for the target space or building. Heights and floorplans of neighboring buildings may be extracted from Google maps as well as local GIS files and LiDAR data (if available)
	Remember to include a ground plane in your model to adequately account for ground reflectances (Fig I-5.28).
Opaque building elements	For interior spaces, model all wall thicknesses, interior partitions, hanging ceilings and larger pieces of furniture. Try to model all space dimensions at least within a 5cm tolerance. Façade details should be modeled within a 2cm tolerance. Make sure that there are no "holes" in your model. To test for the existence of holes, you can model all materials as black surfaces and ensure that a simulation detects no interior daylight.
	Consider window frames and mullions by either modeling them geometrically or by reducing visual transmittances for windows and skylights by an appropriate frame factor (typically 0.8).
	Depending on the daylighting metric that you want to calculate, remember to adequately model any movable shading devices such as venetian blinds (see chapter 15).
Window and skylights	Check that all window glazings only consist of one surface. Several CAD tools model double/triple glazings as two/three closely spaced parallel surfaces whereas daylight simulation programs tend to assign the optical properties of multiple glazings to a single surface.
	Check that all windows are "inserted' into the wall planes and not "overlaid" on the wall surfaces. Several CAD tools suggest that you can create and visualize a window in many different ways, one being the placement of a window surface on top of a wall surface which creates two coplanar surfaces. In such an instance some daylight simulation programs may either ignore the window or somehow 'guess' which surface to consider.
Sensor grid	When defining sensor grids make sure that the reference surface is facing the correct way. For example, a downward facing floor surface with a negative sensor offset may lead to the sensors facing the floor.

Fig 10.9 Checklist for preparing CAD files for a daylight simulation