

# THE THIRD GUILD

## *CADbuddy for modo 401*

[www.thethirdguild.com](http://www.thethirdguild.com)

*CADbuddy is a set of tools that help you to use CAD outlines inside of modo:  
From clean-up to creation of geometry.*

### Key Features (v1.3)

CADbuddy currently comprises of seven tools.

#### **MergeCAD :**

Merges CAD layers in to a single mesh item and cleans up the data.

Options:

- remove the original CAD mesh items (layers).
- centre the outlines around the world origin.
- merge vertices
- remove one point polygons.
- remove floating vertices (i.e. vertices that have no polygon association).
- flatten all vertices to ensure they are in the same plane i.e. set all vertex Y positions to zero etc.

#### **ScaleCAD: (VectorScale)**

Select any edge within the CAD data, set the desired size and the CAD will be scaled accordingly. This has an advantage over using modo's built-in absolute scaling scripts as it does not rely on knowing the bounding box size, but rather on knowing the size of just one object in the CAD data e.g. size of one edge of a door or window frame.

Options:

- scale along XZY, XY, YZ or ZX.
- grab the size of the currently selected edge

#### **Extract Elevations:**

Once you have cleaned-up and scaled your CAD this tool allows you to quickly extract the elevations to their own mesh items (layers). A new layer is automatically created (and named) whilst you are keep on the original CAD layer to enable fast extraction of subsequent elevations.

Options:

- Eight preset names so you can simply click 'Make Front' (elevation).
- Auto-rotate the front,back,left and right elevations to the correct facing during extraction.
- Offset the front/back and left/right elevations from the origin whilst extracting them.
- Option to centre extracted elevation around the world origin.
- 'Make custom' extracts polylines to new item and pop-up the layer name dialog.

**Alignment Tools:**

A couple of simple options to help alignment of the CAD elevations.

Options:

- Move the elevation to the origin (centered around a vertex selection).
- Store a vertex position and then move an elevation to that position (centered around a vertex selection). Option to automatically activate the move tool after alignment.

**CADextrude:**

Extrudes one or more polygons, e.g. floor plan, based on the Y values taken from a vertex selection from CAD data. Vertices representing the heights of the various parts of the structure, e.g. masonry openings, can be selected in any order.

**CADslice:**

Slice geometry, in separate layer, using a polyline selection (one or more edges) from a CAD elevation. This allows the users to rapidly cut the masonry openings in to a building mesh whilst retaining quad polygons (as opposed to using boolean).

Additional features:

- Duplicate slice positions are automatically removed allowing for 'lazy' selection of the edges used for slicing. This helps to prevent making very close cuts (eg, two slices within 0.2mm, for example) by mistake due to errors in the original CAD data/polylines.
- 'Tolerance' system in combination with 'lazy' selection means the users can select both vertical and horizontal edges at the same time. Then, with a couple of clicks its possible to quickly cut the geometry in both directions.
- Once you have selected a building mesh and CAD layer you can work away without having to change the item list selection.

Options:

- Horizontal: Guarantees slices created in the geometry will be horizontal (based on Y-up) and thus prevents errors in the CAD polylines from being transferred to your mesh.
- Vertical: Guarantees slices created in the geometry will be vertical (Y-up) and thus prevent errors in the CAD polylines from being transferred to your mesh.
- Unique 'tolerance' value automatically averages out small errors in CAD polylines and highlights any edges (polylines) you have selected which are outside the given limit.
- Isolate a given polygon selection (hide the other polygons) without having to use the Item List to change your current item selection.

**CADslice: Projection Slice**

Enables you to drive the slicing direction of CADslice based on a polygon selection. The tool only cuts vertically (Y-up) and is subject to the same safety checks as per CADslice:Vertical. The tool can only be used in Perspective view.

Options:

- Max. cut depth: This determines the maximum depth from the face of the selected polygon that geometry will be cut. This enables you to only cut through the exterior wall, for example.

## **Smart Bridge**

The 'smart Bridge' tool takes control of modo's built-in bridge tool and enables you to bridge multiple window/door openings at once, which is a big time saver. The tool uses 5 criteria to find the best possible matches and leaves unmatched polygons/polygon-groups highlighted.

Options:

- Segments: Same as for modo's built-in tool. This is the number of segments the 'bridge', between selected polygons, will be divided into.
  - Max. Distance: Specify the maximum distance where two opposing polygon groups will be considered for bridging. This helps to prevent bridging polygon that are far apart.
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## **CADbuddy Limitations**

- CADextrude and CADslice currently only work in modo's default scene orientation of Y-up.
- Extract Elevations with Auto-Rotate currently only supports modo's default Y-up scene orientation.
- smartBridge currently uses modo's built-in bridge tool so some bridged polygons may be flipped.
- Scale currently centres the Mesh Item around the world origin (0,0,0).

## **Install and User Guides**

- This script plug-in comes complete with a PDF install guide together with a video that shows how to install the script and quickly set-up its user interface within modo 302/401.
- The User Guide is completely video based and consists a series of short videos (h.264 encoded) which will get you up to speed with these user friendly tools.