

Geospatial Modeling & Visualization

A Method Store for Advanced Survey and Modeling Technologies

GMV Geophysics GPS Modeling Digital Photogrammetry 3D Scanning Equipment Data and Projects by Region

Leica Cyclone 7.0: Modeling a Flat Surface

This workflow will show you how to begin modeling in Leica's Cyclone.

Hint: You can click on any image to see a larger version.

GETTING STARTED

Getting Started

1. Cyclone Navigator -> Project -> Model Space -> Open/Copy/Delete Model Spaces here
2. Draw a fence to select the area to be modeled. The fence tools are located in the 'Mode' toolbar next to the navigation tools. Once the points are "fenced", copy them into a new Working Model Space (**Select -> Right Click -> Copy Fenced to new Model Space**)



Figure 3: Fence Tools

3. Unify or Merge the clouds in the new MS (See *Temporary Model Spaces Above*)

MODELING A FLAT SURFACE: METHOD 1

Modeling – Creating a patch to represent a wall or flat surface:

Method 1 – Fit to Cloud (More conservative):

1. Draw a fence across flat surface using appropriate fence tool.
2. Once the fence has been drawn, RC, select Point Cloud SubSelection – Add Inside Fence.
 - A. Next, make sure there are no points BEHIND the flat surface that accidentally got selected. If there are, draw another fence around them, RC – Point Cloud SubSelection – Remove Inside Fence (may have to repeat multiple times) Once you have the flat surface properly selected, select **Create Object -> Fit to Cloud -> Patch**.

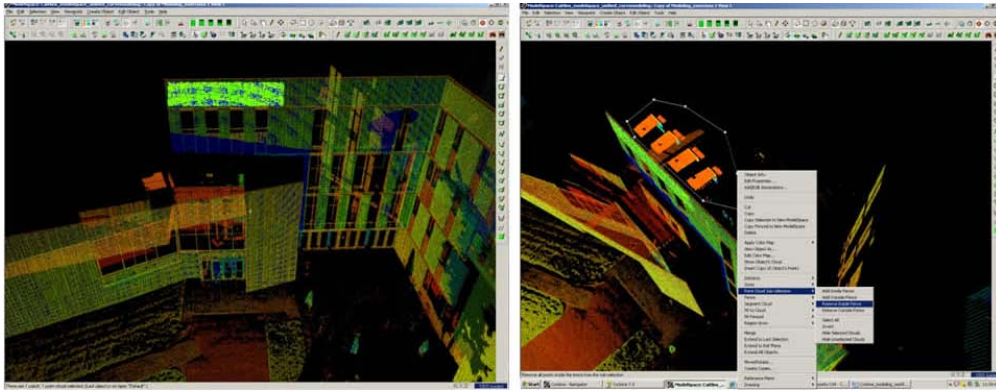


Figure 4: (Left) Selecting points in a dataset (Right) Rotating the dataset and removing the points that were erroneously selected behind or “through” the data

METHOD 2

Method 2 – Fit to Fenced:

1. Draw a fence across flat surface using appropriate fence tool (making sure to not select any points behind the flat surface). RC -> Select Fit Fenced -> Patch.

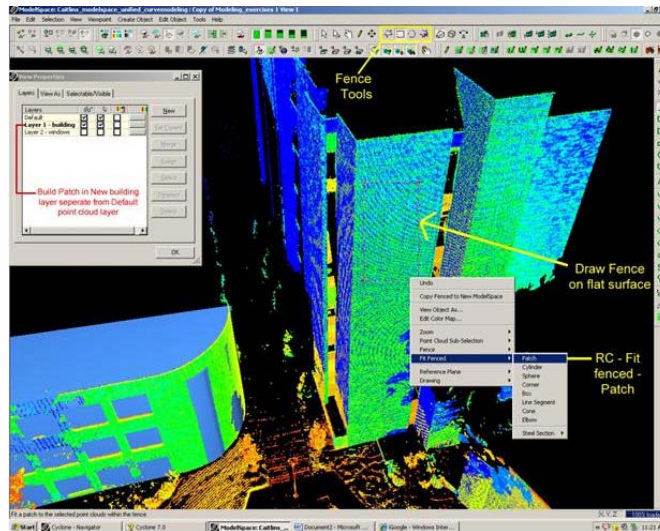


Figure 5: Process of drawing a fence on a flat surface then simply right clicking and selecting Fit Fenced – Patch

METHOD 3

Method 3 – Region Grow (Relies on Cyclone and placed parameters to decide how patch forms)

1. Select a point that is at the center of the area or surface to patch (**Selection Tool -> Left Click**); Note: the Region Grow command evaluates the points in a radius from the point selected
1. **Create Object -> Region Grow -> Patch**
 - A. The Region Grow Dialogue Box allows the user to adjust the number of points that Cyclone uses to calculate the surface of the patch

Region Thickness – thickness/depth of point cloud data used for region; lowering this number increases accuracy; be aware of changes in the depth of surface materials such as the mortar between bricks when adjusting this number.

Maximum Gap to Span – maximum hole or shadow in cloud point data to “jump” and continue calculating the region

Angle Tolerance – used for meshes only

Region Size – the diameter radiating from the central pick point to calculate the region

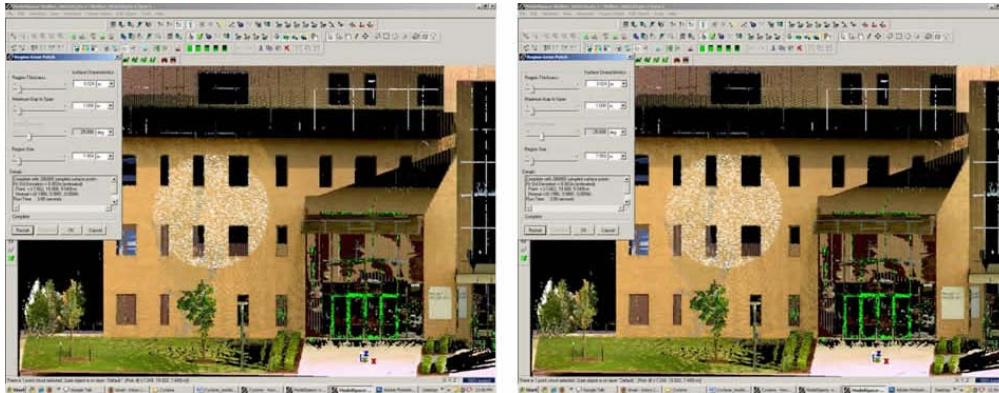
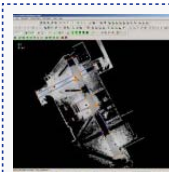


Figure 6: (Left) Region Grow with maximum region size – the white points represent the proposed patch. (Right) Reducing the region size so that fewer points are considered for the proposed patch – note the radial pattern with the first selected point at the center.

CONTINUE TO...

Continue to [Leica Cyclone 7.0: Modeling – Editing, Extending, and Extruding Patches](#)



You are reading the series: [Leica Cyclone 7.0: Introduction to Modeling](#)
[Leica Cyclone 7.0 : Introduction to Modeling Buildings, Structures, and Objects](#)
 Leica Cyclone 7.0: Modeling a Flat Surface
[Leica Cyclone 7.0: Modeling – Editing, Extending, and Extruding Rectangular Patches](#)
[Leica Cyclone 7.0: Modeling Non-Rectangular Patches](#)

Please cite this document as: Green, Vance. 2012. Leica Cyclone 7.0: Modeling a Flat Surface. CAST Technical Publications Series. Number 4851. <http://gmvcast.uark.edu/scanning/software/leica-software/leica-cyclone/leica-cyclone-7-0-building-modeling-getting-started-2/>. [Date accessed: 27 April 2013]. [Last Updated: 9 May 2012]. *Disclaimer: All logos and trademarks remain the property of their respective owners.*

Login

[Log in](#)