PHOTOGRAMMETRY – AGISOFT METASHAPE

Building a Dense Cloud Model (Professional Edition) (04.08)

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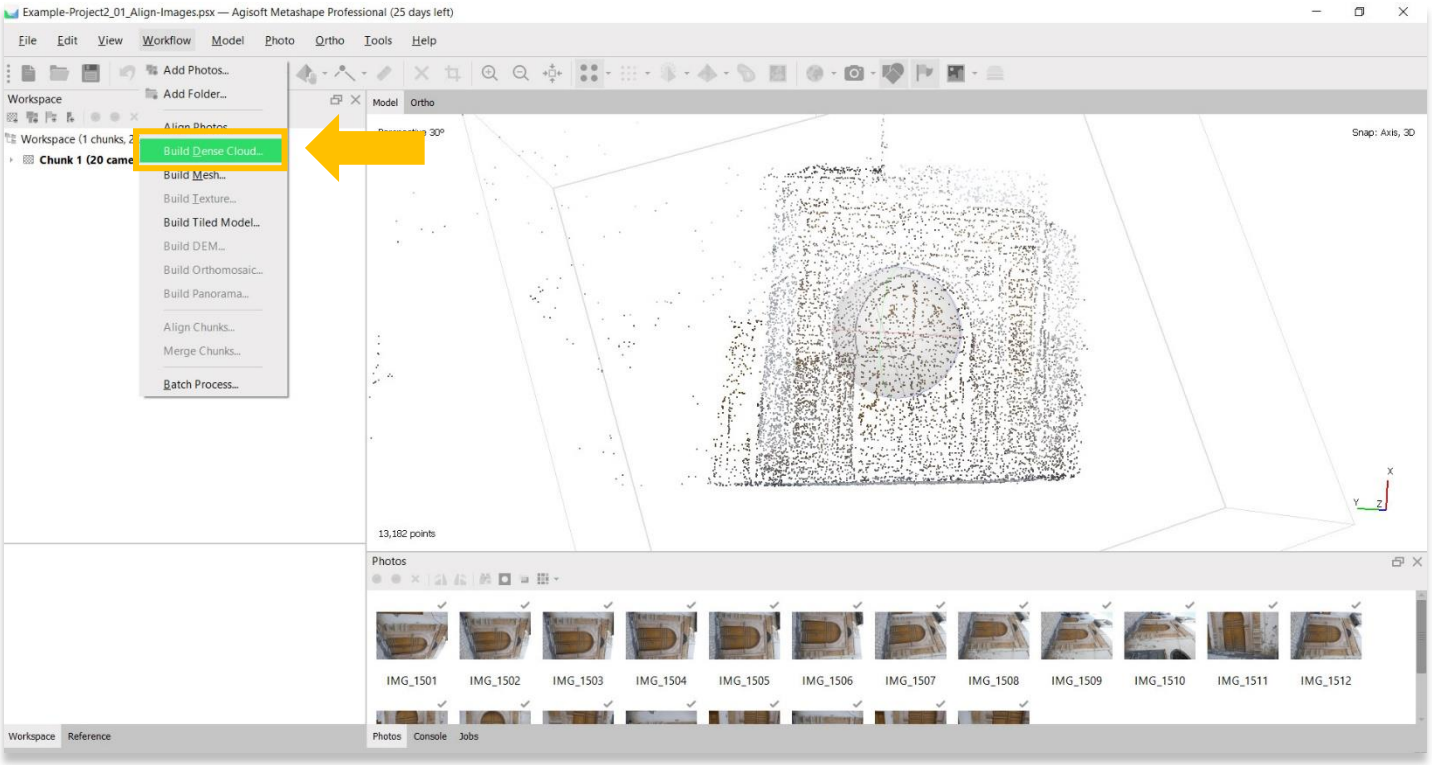
ABOUT AGISOFT METASHAPE

Agisoft Metashape is a stand-alone software product that performs photogrammetric processing of digital images and generates 3D spatial data to be used in GIS applications, cultural heritage documentation, and visual effects production as well as for indirect measurements of objects of various scales. This software provides a platform for cultural heritage specialists to create virtual reality scenes, textured 3D meshes, orthographic projections, geo-referenced maps and much more from images and/or laser scans completely automatically.

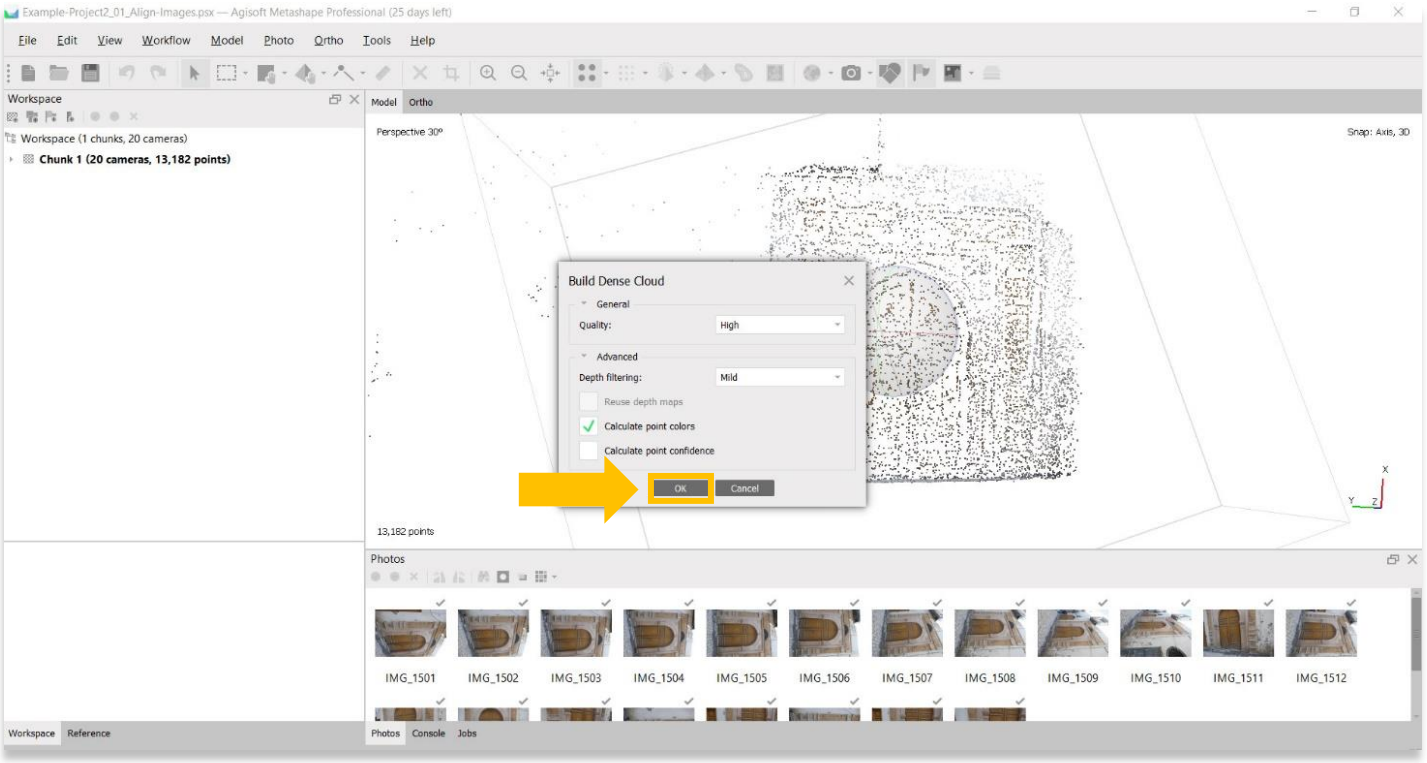
This **ASOR Tutorial (04.08)** will demonstrate how to build a dense cloud model in Agisoft Metashape Professional on a Windows desktop. ASOR's tutorials for Metashape are focused on creating 3D surfaces and orthophotos of objects, monuments, and architecture during cultural heritage surveys through the eastern Mediterranean and northern Africa. ASOR plans to expand the scope of its photogrammetry tutorials, however for any questions that aren't covered in these tutorials, please visit Agisoft's Community page, which includes video and written tutorials, the software's manual, and a community forum comprised of Metashape users.

BUILD A DENSE CLOUD

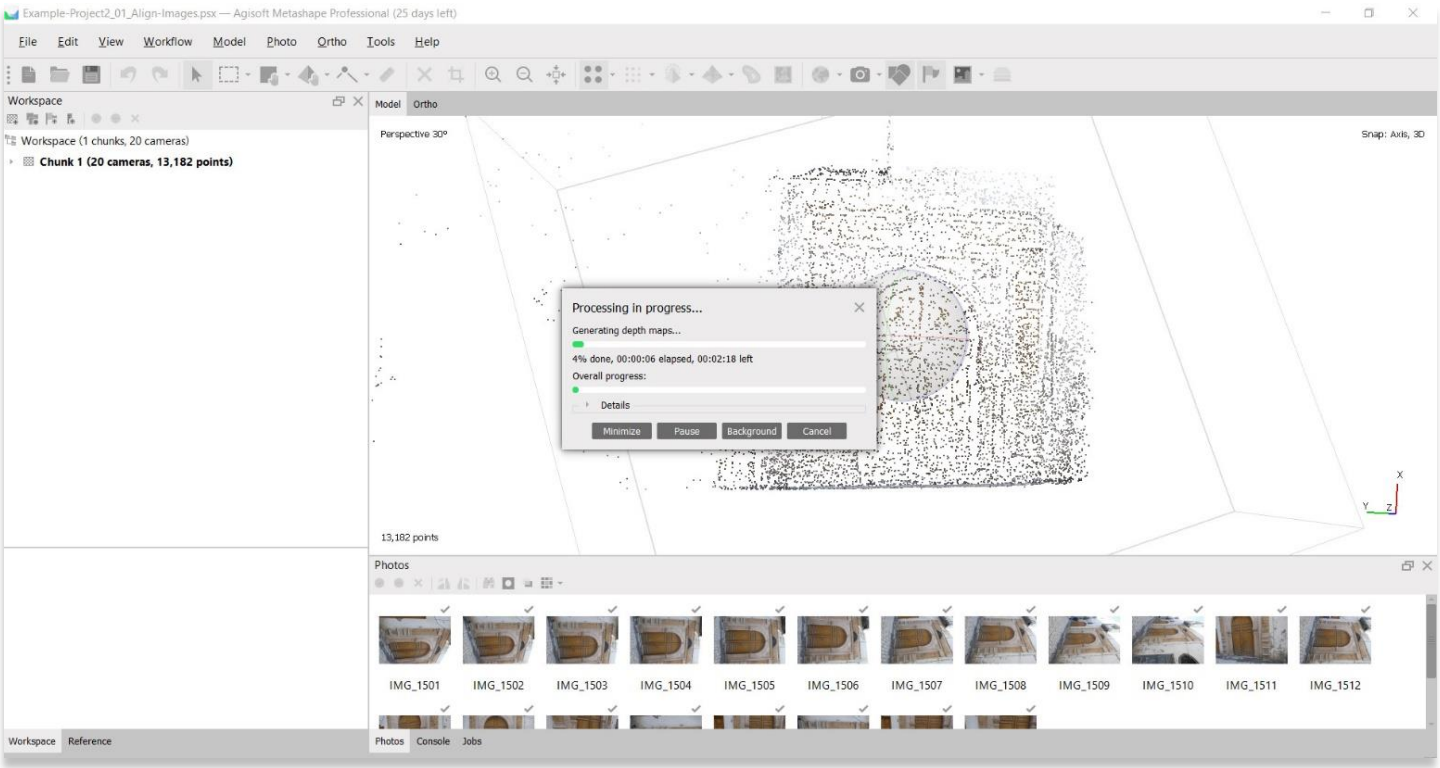
1. Begin building a dense cloud model by selecting the **Workflow Menu** > **Build Dense Cloud**.



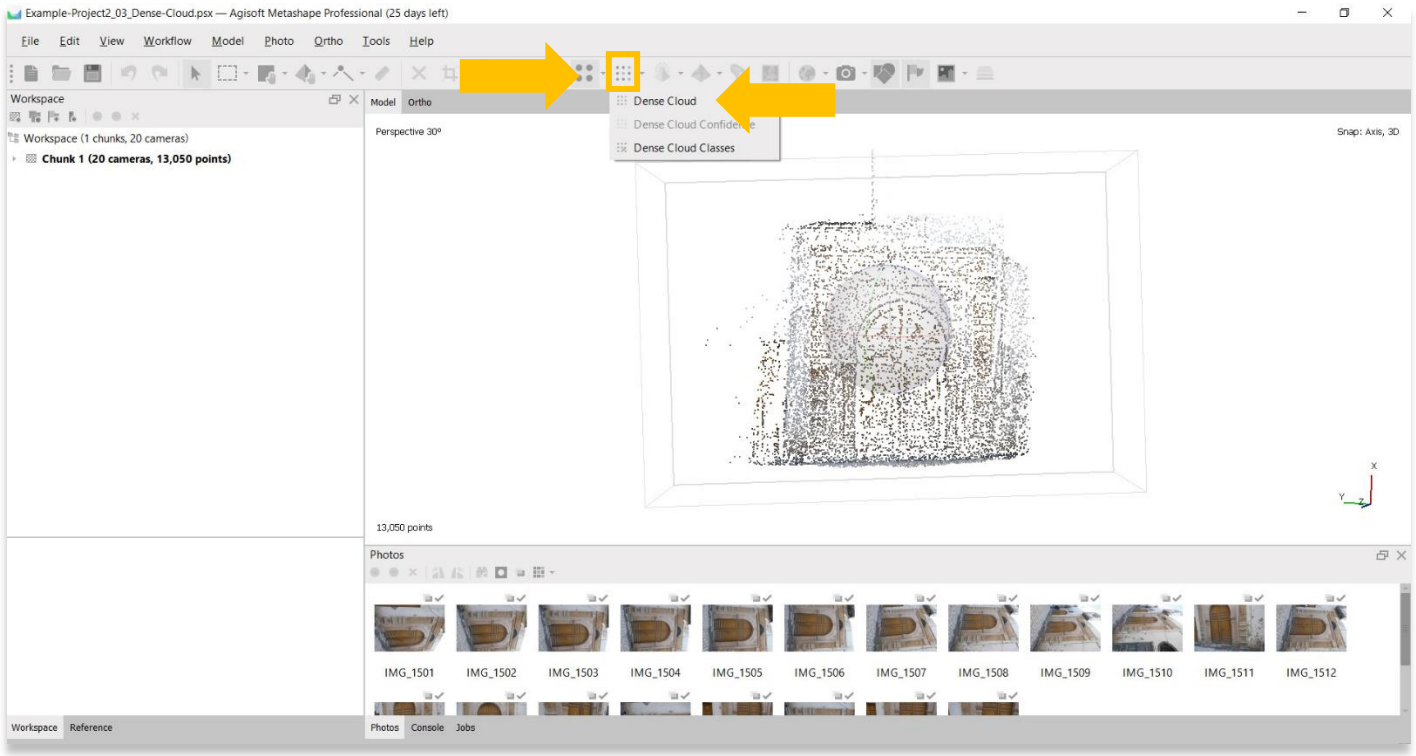
2. A pop-up will appear that provides options for setting the accuracy of the model. Set the accuracy to **High** or **Highest** if possible. Use the following settings show in the screenshot below. Press **OK** when ready.

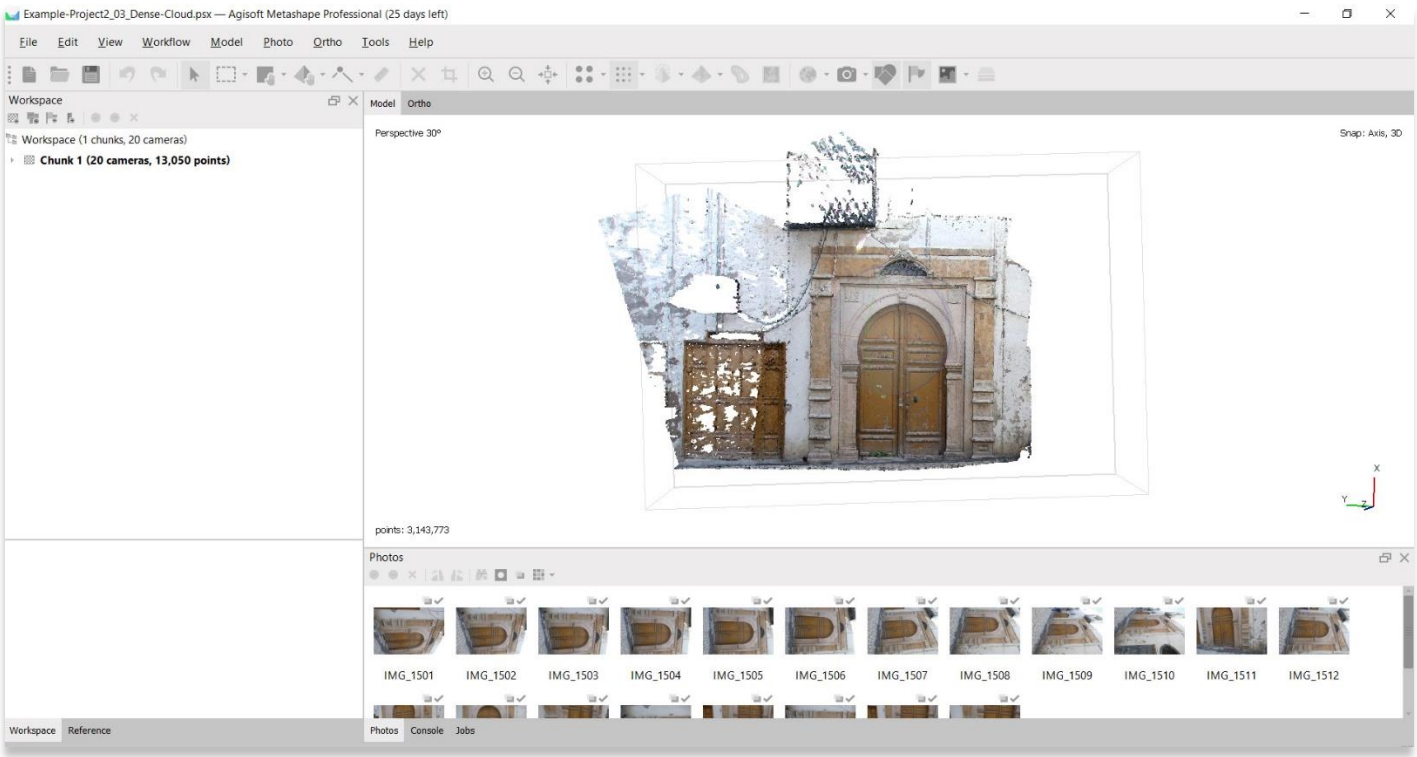


3. This step could take several hours or even days to complete. Your computer may not have enough RAM or memory to complete this step at **Highest** accuracy. Select the next best option until you are able to complete this step.



4. Once completed, the main panel will render a dense cloud representation of your object/3D surface. To view the dense cloud model, choose the **Dense Cloud** button in the top tool bar, then **Dense Cloud** from the dropdown options.

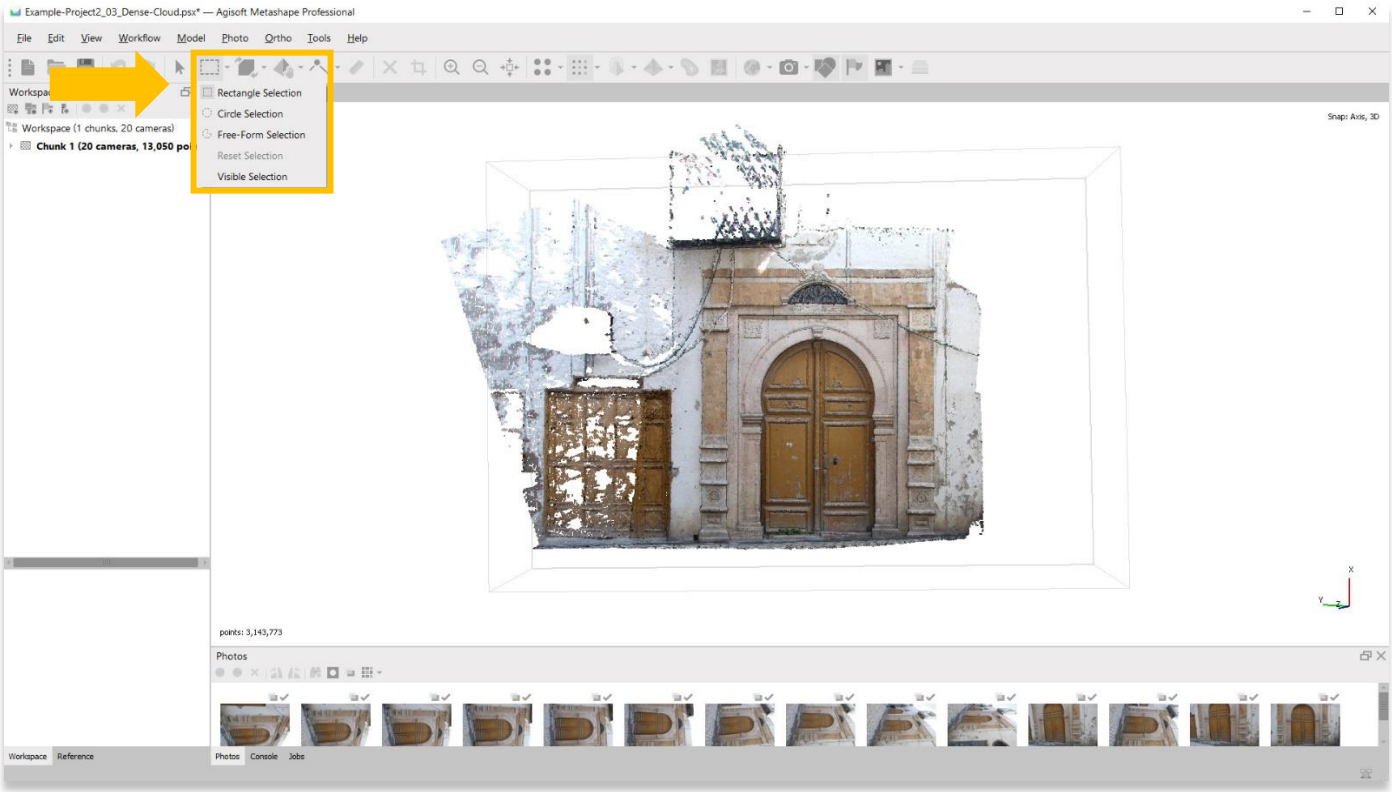




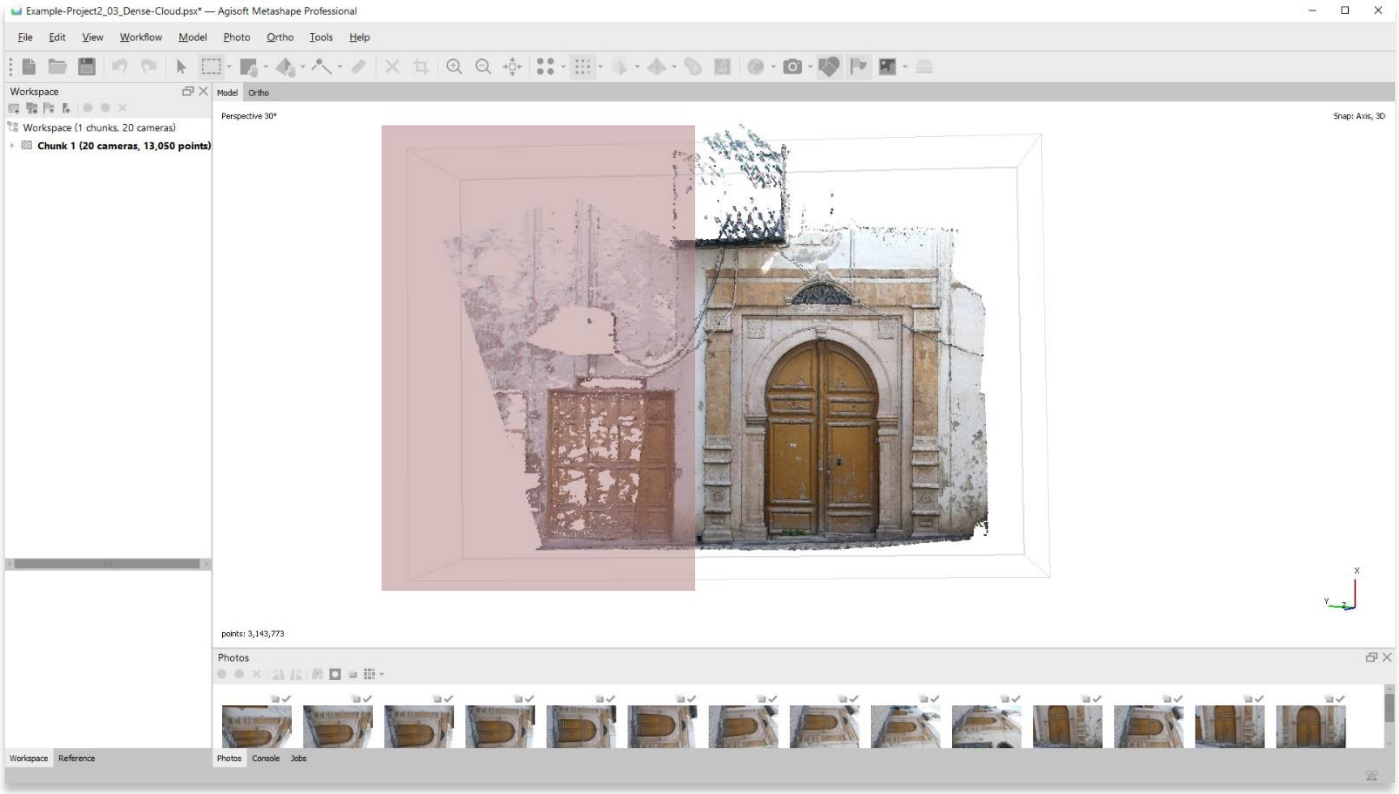
SELECTION TOOL – CLEANING THE MODEL

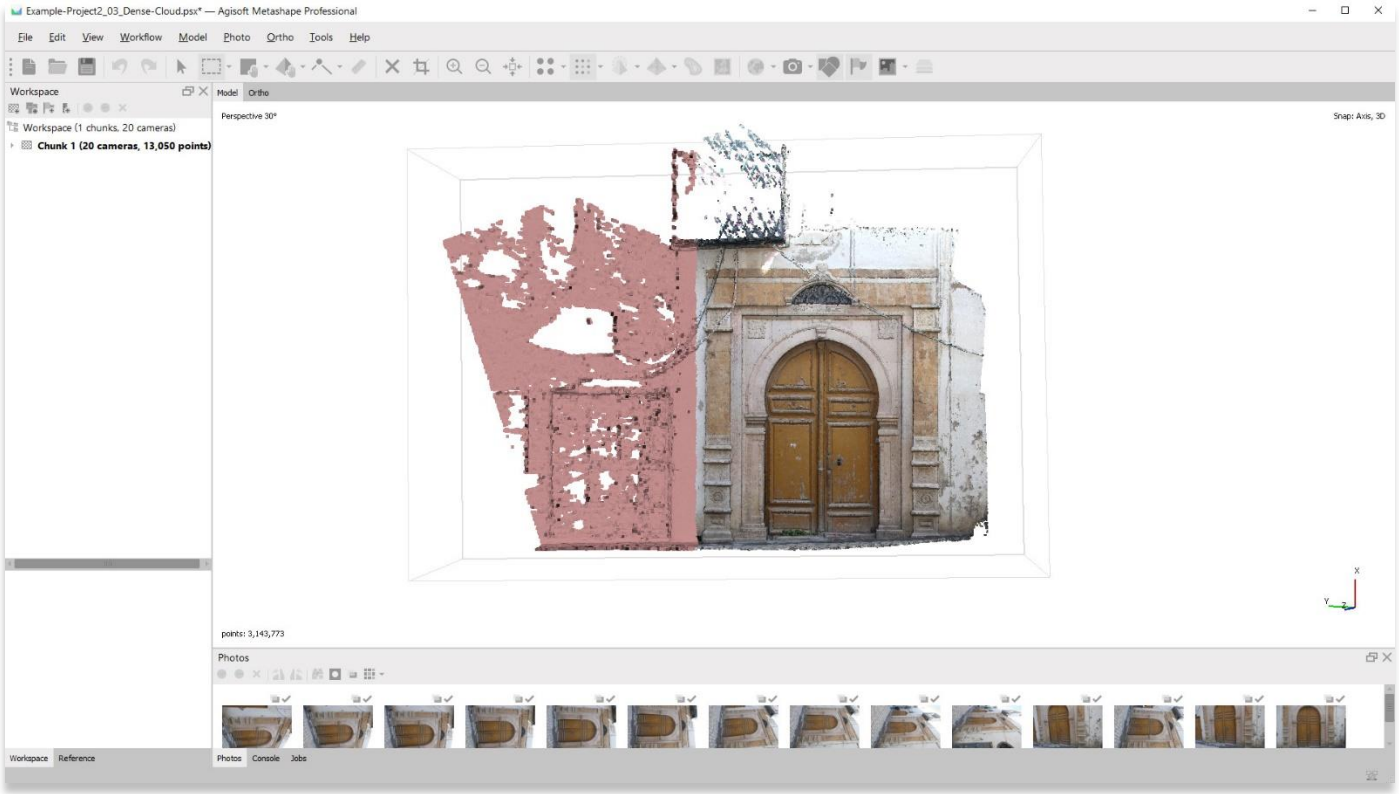
5. At this point, you may wish to clean up your model. If the primary region of this model that you wish to present is the door and surrounding frame (highlighted in yellow below), you will want to remove any surrounding data/points to speed up the processing time and to display a clean-looking model.

6. Choose the **Selection** button to prompt a dropdown menu with tools to select points on your model. This dropdown allows you to highlight points by using **Rectangle**, **Circle**, or **Free-Form** selection.

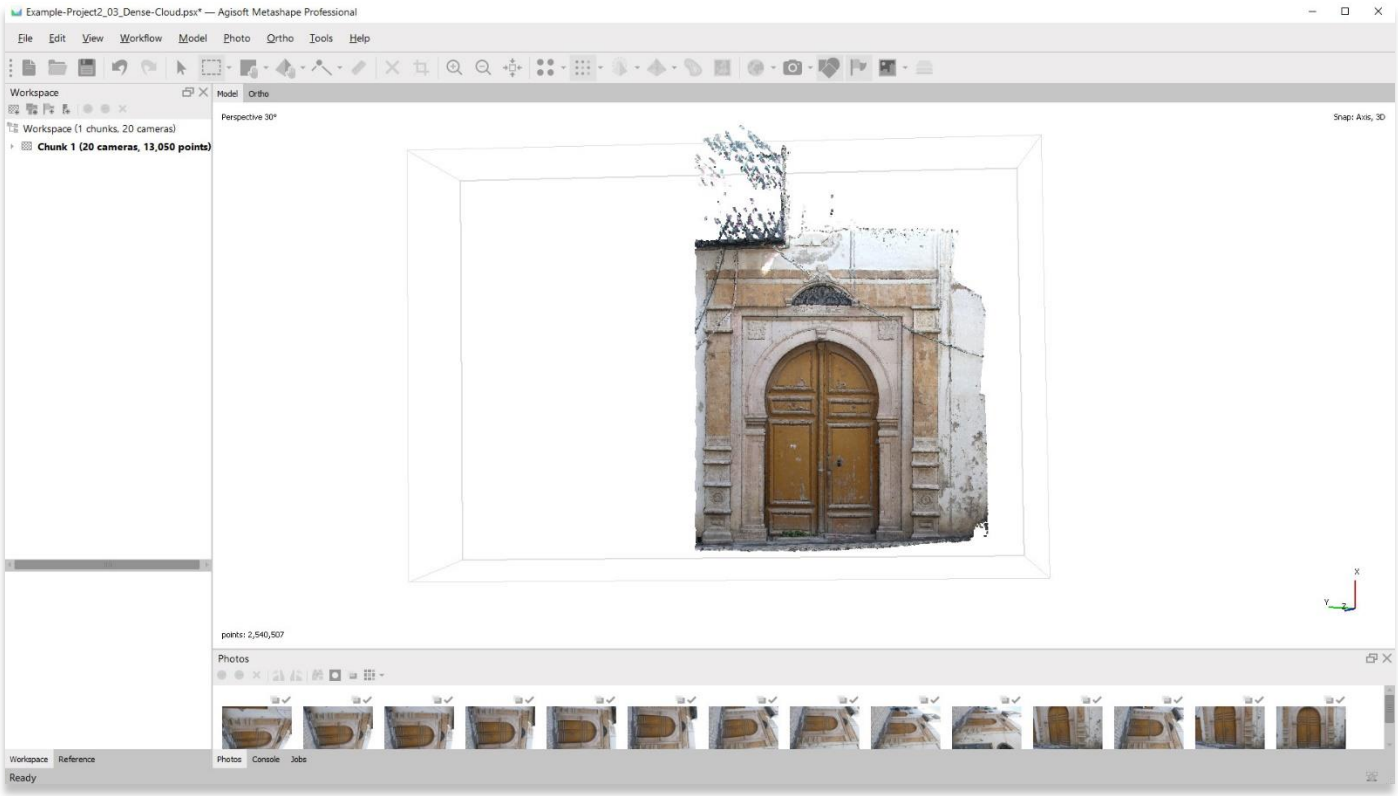


7. Rectangle **Selection** works well to create defined and straight borders around your model. Use your mouse to highlight the area you wish to remove.

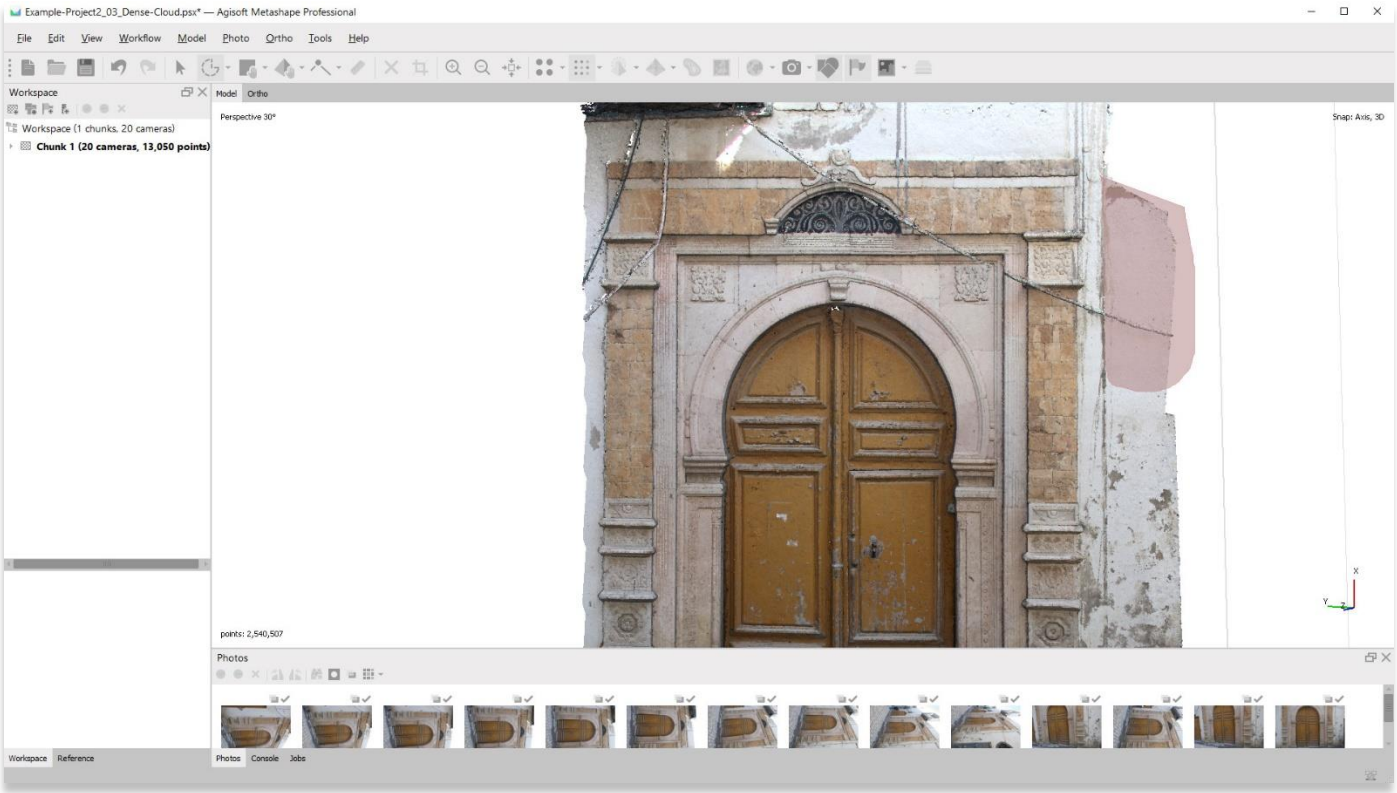


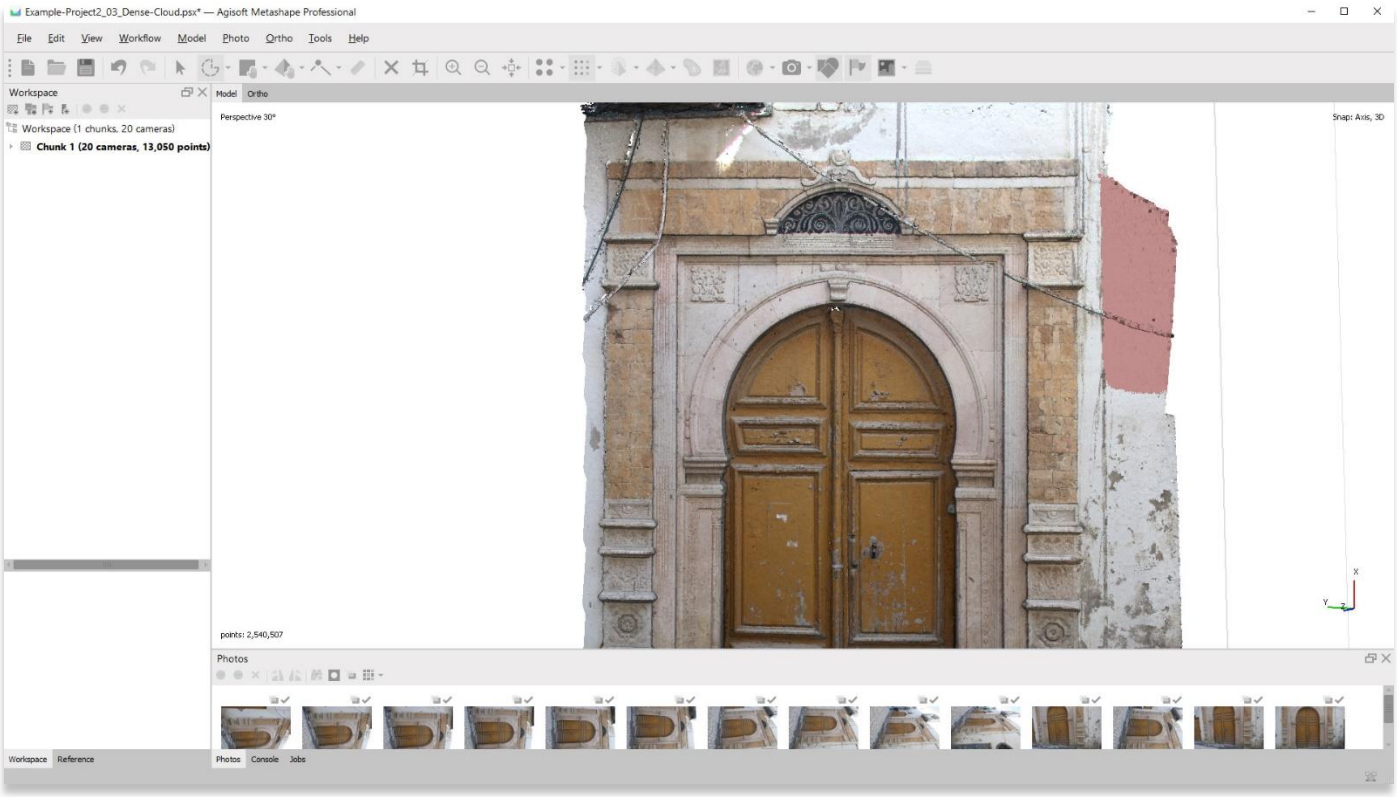


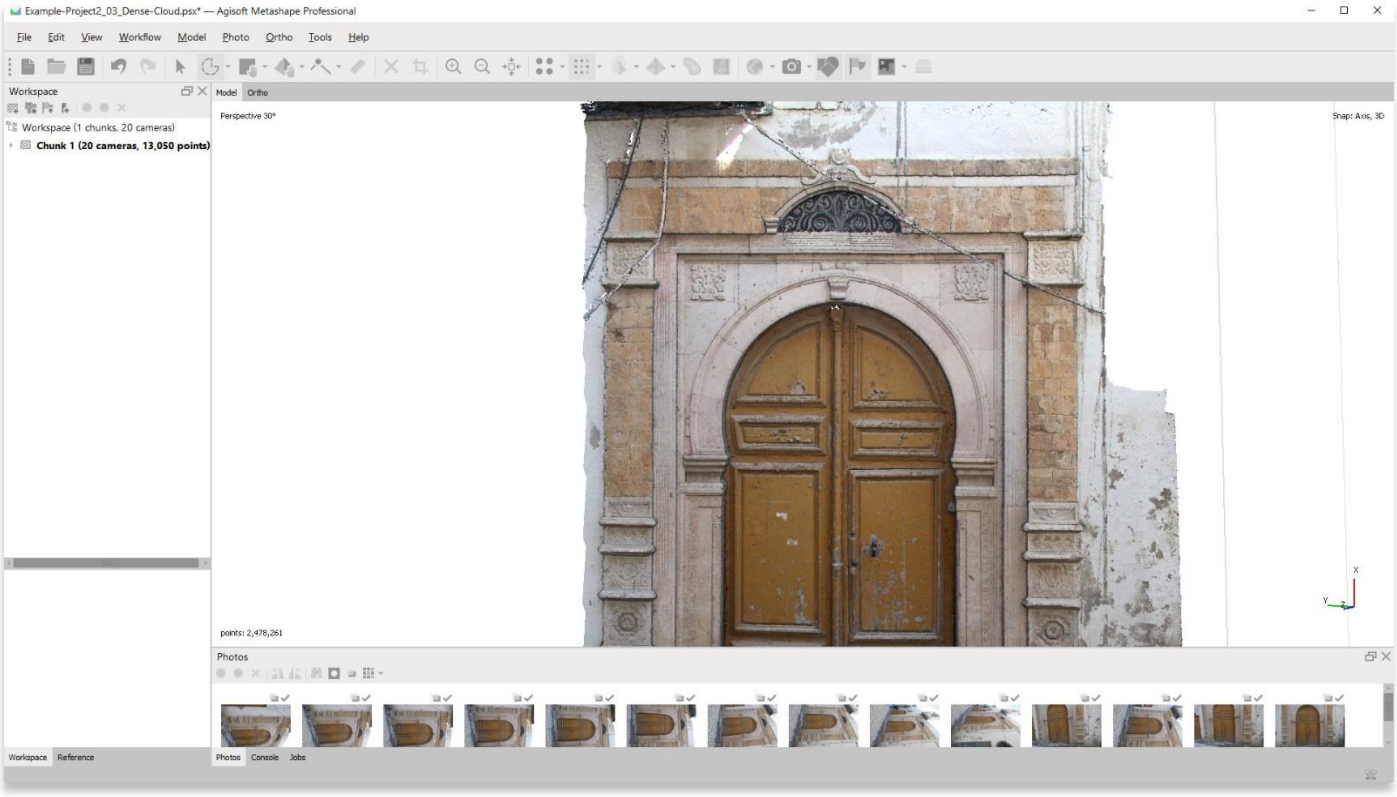
8. Once you have selected the region you wish to remove, press the **Delete** button on your keyboard.



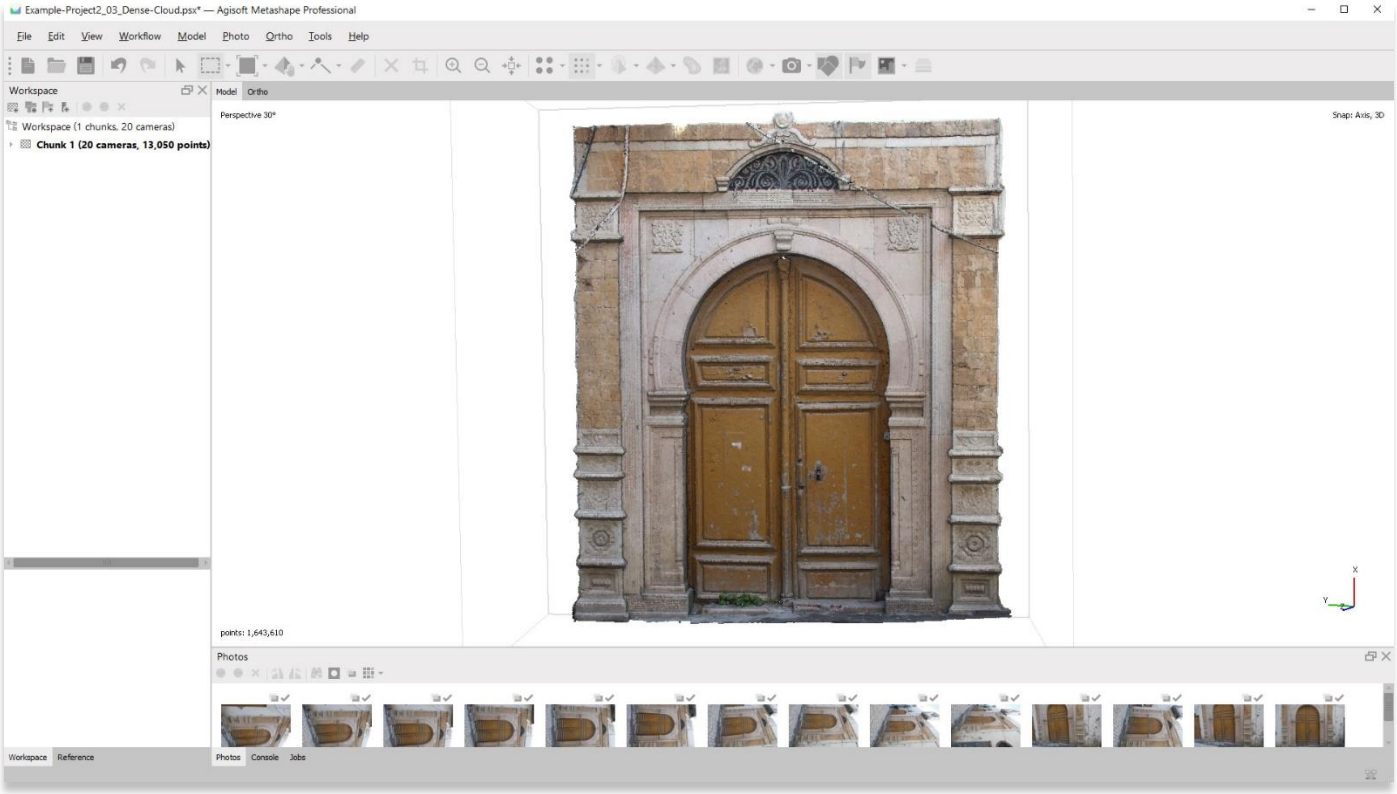
9. The **Free-Form Selection** tool can also be useful for removing regions of your model that require more control.




Example-Project2_03_Dense-Cloud.psx* — Agisoft Metashape Professional
File Edit View Workflow Model Photo Ortho Tools Help
Workspace
Workspace (1 chunks, 20 cameras)
Chunk 1 (20 cameras, 13,050 points)
Model Ortho
Perspective 30°
Snap: Axis, 3D
points: 2,540,507
Photos
Workspace Reference
Photos Console Jobs


Example-Project2_03_Dense-Cloud.psx* — Agisoft Metashape Professional
File Edit View Workflow Model Photo Ortho Tools Help
Workspace
Workspace (1 chunks, 20 cameras)
Chunk 1 (20 cameras, 13,050 points)
Model Ortho
Perspective 30°
Snap: Axis, 3D
points: 2,478,261
Photos
Workspace Reference
Photos Console Jobs

10. Continue to clean up your model until you are satisfied with its appearance.



11. **Save your project** before moving onto the next step in the **Workflow** menu.

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