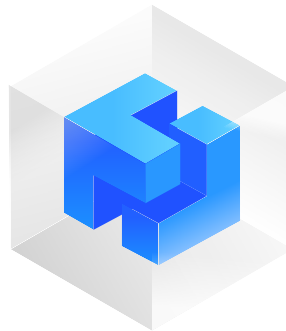
DJI MODIFY

User Manual

v1.4 2025.05



Contents

Disclaimer

Read this disclaimer and the terms in DJI MODIFY™ (hereinafter referred to as "product") carefully before using this product. By using this product, you hereby agree to this disclaimer and the Terms of Use and signify that you have read it fully. Install and use this product in strict accordance with the User Manual. SZ DJI TECHNOLOGY CO., LTD and its affiliated companies assume no liability for damages or injuries incurred directly or indirectly from using this product improperly.

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This disclaimer is produced in various languages. In the event of any discrepancies among different versions, the simplified Chinese version shall prevail when the product in question is purchased in China. The English version shall prevail when the product in question is purchased in any other region.

Product Profile

DJI Modify is DJI's first intelligent 3D model and point cloud editing software. It features a streamlined and intuitive interface that is simple to use to complete 3D model and point cloud editing efficiently. It accurately identifies floating parts, holes, and vehicles in the 3D models. Mesh can be repaired with a single click, with true-to-life textures generated quickly, significantly simplifying the model editing process. Paired with a DJI enterprise drone and DJI TERRATM, it forms a comprehensive solution from aerial surveying, modeling, and model editing to sharing these models easily to meet operational needs in surveying and mapping, firefighting, emergency response, and transportation.

Before Using

Supported Files

DJI Modify supports editing 3D mesh and point cloud models reconstructed using DJI Terra. Users have the option to convert existing 3D models in DJI Terra into file formats that are compatible with DJI Modify or start the reconstruction of 3D models from scratch using DJI Terra and import to DJI Modify.

Only models reconstructed with DJI Terra v4.0.0 or later versions can be imported into DJI Modify for editing. Otherwise, the core features of DJI Modify, such as removing floating parts may not function properly. DJI Modify supports importing point clouds reconstructed using coordinate systems supported by DJI Terra, but does not support importing 3D mesh models reconstructed using custom coordinate systems or coordinate systems with seven-parameter transformation, nor models reconstructed from photos that lack image POS data.

When reconstructing 3D models in DJI Terra (v4.0.0 or later versions), make sure to enable Work with DJI Modify. By enabling this option, historical projects that have already been completed in

DJI Terra can be quickly reconstructed again to generate new models and DMEP files for editing in DJI Modify without the need to go through the entire reconstruction process again. Users can find the DMEP file (DJI Modify editable project file) in the reconstruction output folder of DJI Terra. For detailed instructions on how to use DJI Terra for 3D reconstruction, refer to the Reconstruction section in the DJI Terra User Manual.

Operating Requirements

Computers must have a Windows 10 or later (64-bit) operating system installed to run DJI Modify. In order to ensure a smooth user experience, the computer must also meet the specific hardware configuration requirements, which are detailed in the table below.

3D Mesh Model

Items	Minimum	Recommended
GPU	NVIDIA graphics card with a compute capability of 5.0 or above and a comprehensive performance not lower than NVIDIA GeForce GTX 1050Ti.	NVIDIA graphics card with a compute capability of 7.0 or above and a comprehensive performance not lower than NVIDIA GeForce RTX 2070.
VRAM	4 GB or more	8 GB or more
RAM	32 GB or more	64 GB or more
HDD	200GB free space or more	SSD plus 200GB free space or more

While the hardware configuration requirements mentioned above are met, the relationship between the maximum size of the LAS point cloud file and the computer configuration is shown below.

Available RAM	Max. Size of Raw Point Cloud File
32GB	15GB
64GB	30GB
128GB	60GB

Compute capability is a key metric of the graphics card performance. For more information about the compute capabilities of NVIDIA graphics cards, visit: https://developer.nvidia.com/cuda-gpus#compute.

The graphics cards listed above have been officially tested and are recommended for optimal performance. If you are using a graphics card that is not listed above, consult DJI Support before use. Make sure that the graphics card driver you are using is consistently kept up-to-date.

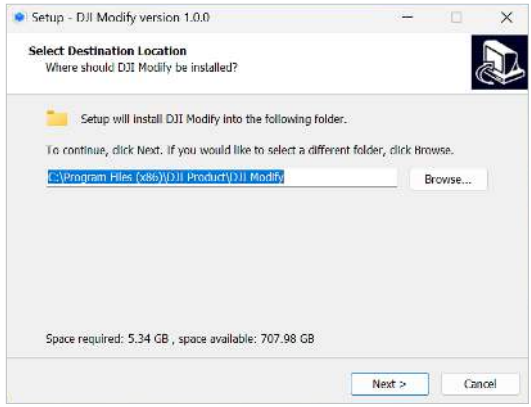
Notes

1. For authentication purposes, make sure to maintain an internet connection at all times.
2. It is important to ensure that all monitors are connected to the NVIDIA graphics card. Failure to do so may cause software lag and hinder its ability to function at maximum performance.

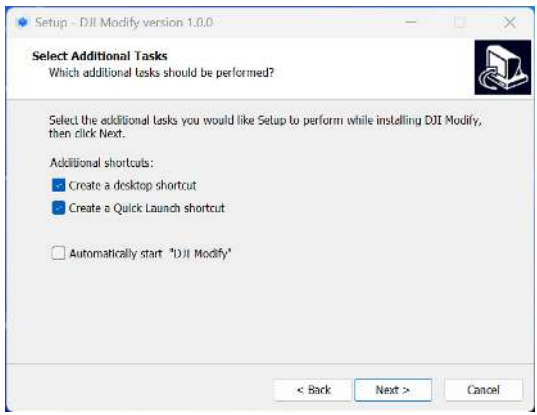
Installation and Configuration

Visit the DJI official website on a computer and navigate to the DJI Modify product page to download the software.

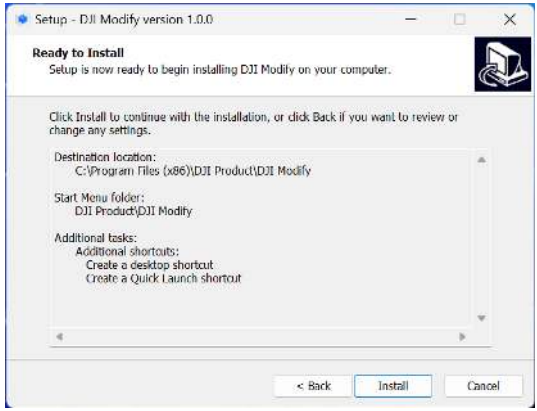
1. Double click to open the software installation package. Wait for a while until the Windows system prompts for authorization and click Yes. Administrator permissions should be enabled as DJI Modify needs to write files to the installation drive.
2. Select language preference and the folder in which to install DJI Modify.



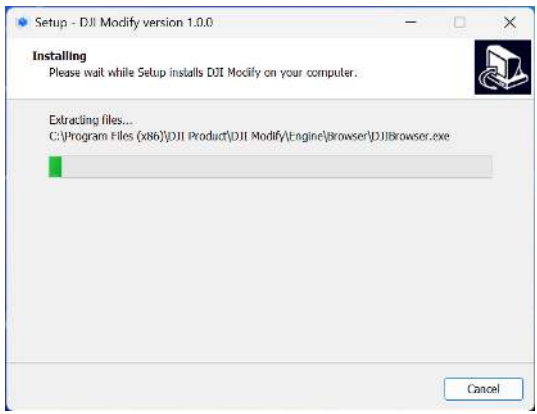
3. Select the additional tasks to perform while installing. Check the boxes according to your installation preferences.



4. Confirm installation settings.



5. Wait for installation to complete.



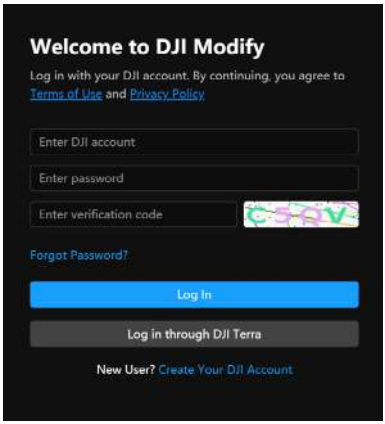
During the installation process, a Windows command prompt window may appear. This is a normal occurrence as it installs the drivers.

6. Once the installation is complete, users can either run DJI Modify directly or restart computer as prompted.

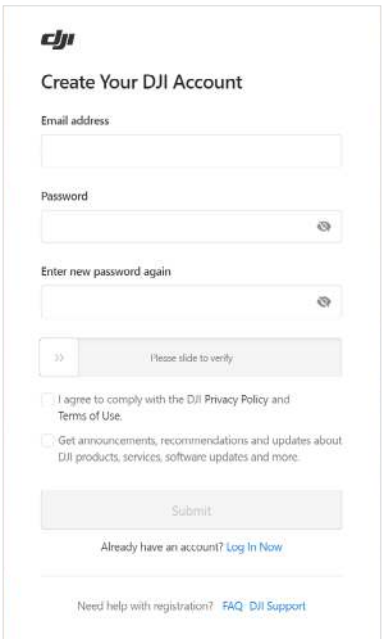
Login and Activation

A DJI account is required to use the software. Users must log in with an account registered on the DJI official website.

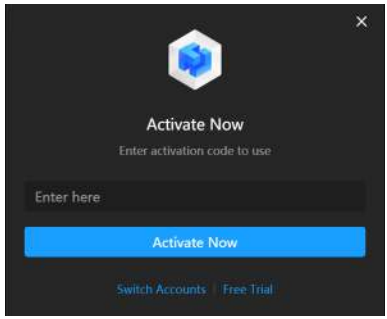
1. Double click to run the software and enter the login screen. Users can also click Log in through DJI Terra, and DJI Modify will be automatically logged in to the same account.



2. Click Create Your DJI Account to register if you do not have a DJI account.



3. If you already have a DJI account, enter account, password, and verification code to log in. If you forgot your password, click Forgot Password to recover your account.
4. Activate the license.

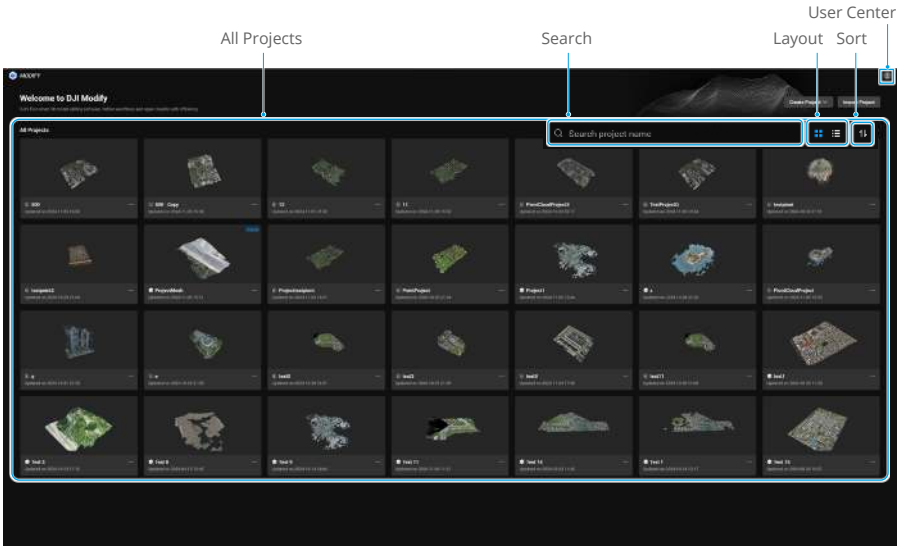


Once logged in, an activation prompt will appear. If you have not obtained a license activation code yet, click Free Trial to apply for a trial and obtain an activation code. If a license activation code has already been obtained, directly enter the activation code and click Activate to activate DJI Modify.

To activate additional licenses, go to User Center > License Manager, and click Activate More to activate additional licenses in the pop-up window.

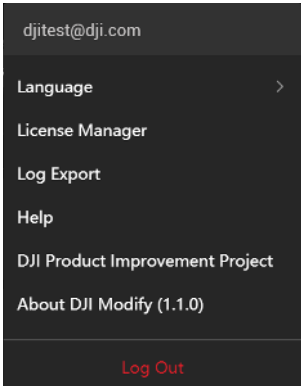
- If users fail to activate the licenses, go to User Center > License Manager to find and bind the license. Contact DJI Support if the license cannot be found.
- Upon the expiration of the trial period, users will have restricted access and will only be able to view existing models but unable to perform operations, such as creating or importing projects.

Home Screen



User Center

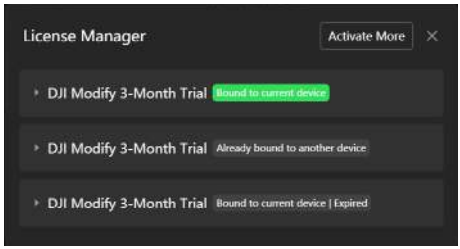
Click in the upper right corner of the home screen to access the user center and view account information.



Language

Click Language to select your preferred language.

License Manager



1. Click License Manager to view all licenses bound to the current computer.
   2. Click Activate More to activate an additional license and bind it to your current computer.
3. Click on an individual license to view detailed information, including the binding status, activation date, validity period, and license number.
4. Click to copy the license number.

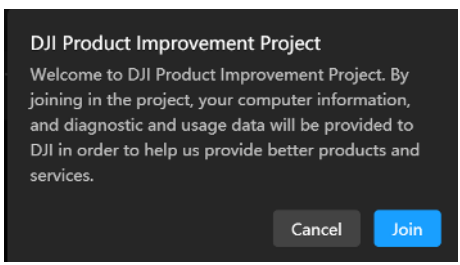
Log Export

DJI Modify allows users to export product logs and save them locally, facilitating issue diagnosis and troubleshooting in after-sales. Click Log Export and select a location to save the exported logs. By default, the time range for log export is set to the past 7 days.

Help

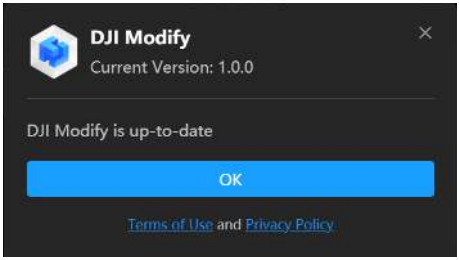
Click Help to quickly navigate to the DJI Modify download page, where users can download the latest software and view related documentation.

DJI Product Improvement Project



Click DJI Product Improvement Project and then click Join to join the project. By joining in the project, your computer information and diagnostic and usage data will be provided to DJI in order to help us provide better products and services. If you do not wish to continue participating in the project, go to User Center and click Cancel to cancel your participation in the project at any time. After participation is canceled, your computer information and error diagnostic data will not be uploaded.

About DJI Modify



Click About DJI Modify to view current software version and check for updates. From here, users can also view the Terms of Use and Privacy Policy of the product.

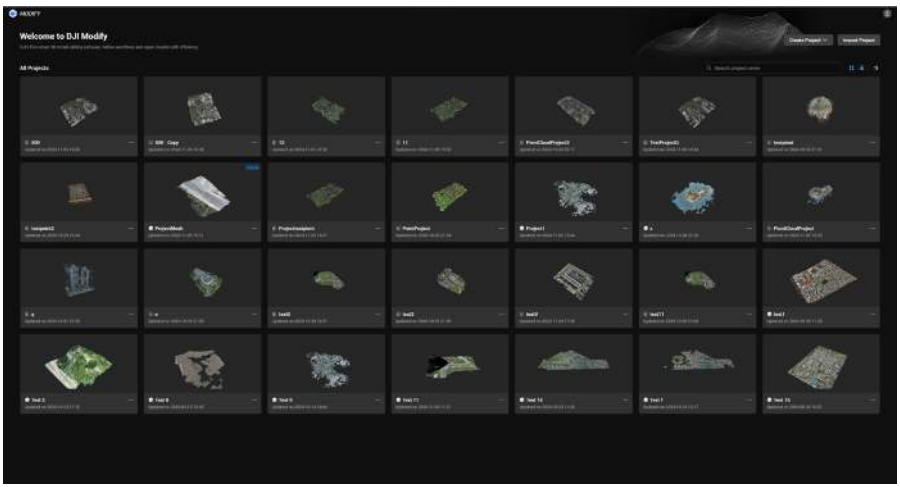
Logout

Click Log Out to sign out of the software. If the user clicks Log Out on the model editing screen, DJI Modify will automatically save the current model before logging out.

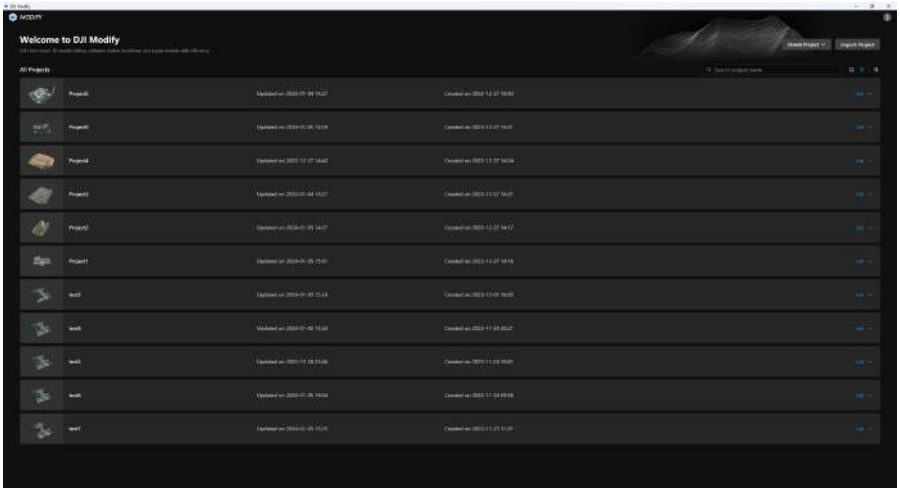
Layout

DJI Modify provides two layout options, including Card View and List View.

1. Click to switch to Card View (default).



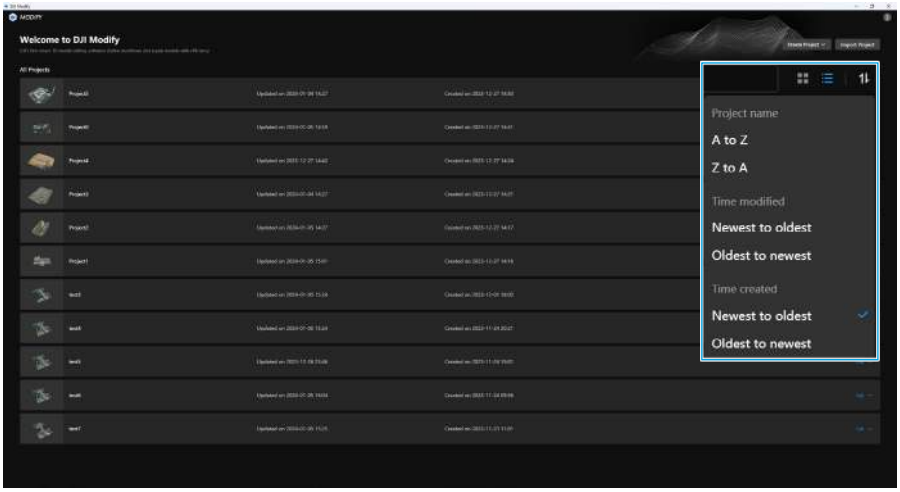
2. Click ☰ to switch to List View.



Sort

Users can use the sorting function to arrange multiple project files in a specific order. DJI Modify supports to sort files in alphabetical order (A to Z, Z to A), by time created or modified (oldest to newest, newest to oldest), and by project name.

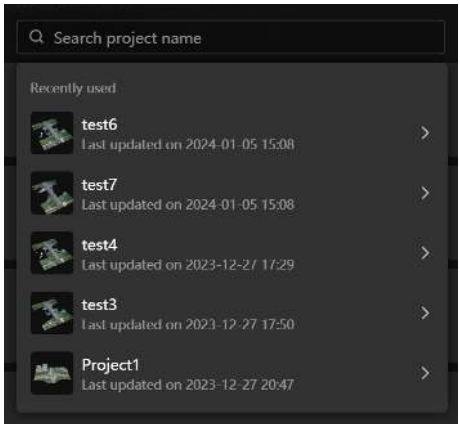
Click ⇅ to select your preferred sorting method. By default, project files are sorted by time created, from newest to oldest.



Search

With the search function, users can quickly access recently opened projects or find a specific project using keywords.

1. Click on the search box to view all recently accessed project files. Click on a project to open it.



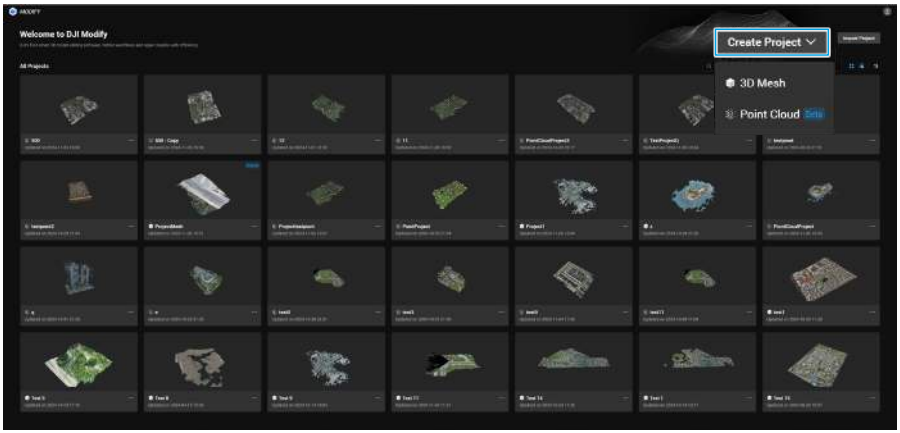
2. Alternatively, enter keywords to search for a specific project. Click on the project found to open it.
3. The list of recently accessed projects will be updated when users create, import, edit, or click on a project, as well as when users drag in or double-click on a project file to open it.

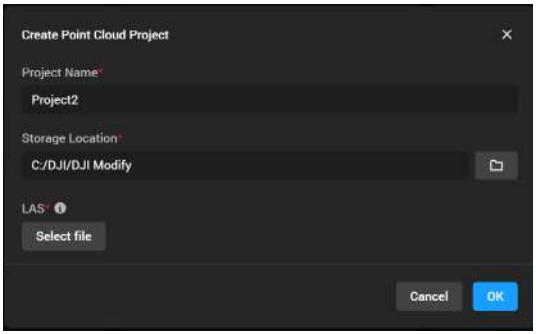
Projects

Point Cloud Model

Creating a Project

Click Create Project, select Point Cloud, and fill in the project information. Enter the project name, choose the storage location, and select LAS files. After required information is filled in, click OK to load the project.





Preprocessing

Once the project is loaded, you can perform operations such as point cloud smoothing, noise reduction, downsampling, and classification. This can enhance point cloud quality and achieve preliminary point cloud classification using intelligent algorithms.

Smoothing: When enabled, point cloud thickness will be reduced to remove noise, making local structures clearer. To ensure the smooth point cloud effect, it is recommended that the average point spacing is less than 15 cm.

Denoising: When enabled, this feature reduces discrete noise points in the point cloud, improving the quality of the point cloud.

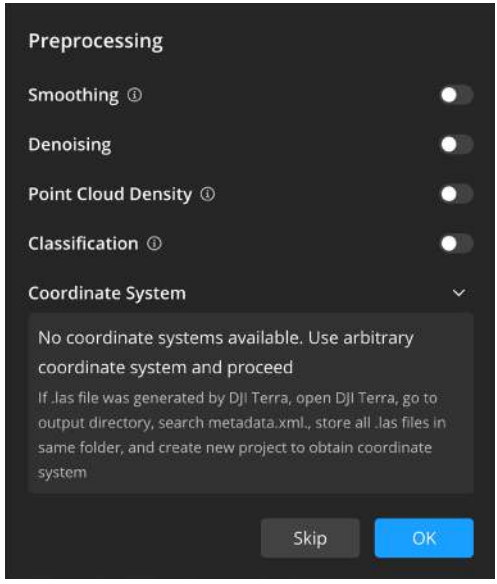
Point Cloud Density: When enabled, you can choose to downsample the point cloud by distance or percentage. An overly sparse point cloud may affect the point cloud smoothing and classification results.

Classification: When enabled, the point cloud can be automatically classified into seven categories: ground, vegetation, building, wire, electric tower, dynamic object, and vehicles. The classification result will overwrite the existing classification of the point cloud file. When the point cloud density is low (average point spacing exceeds 20 cm) or the point cloud is overly dense, the classification accuracy may significantly degrade.

Coordinate System: If there is no coordinate system metadata in the LAS file, the LAS file may be in an arbitrary coordinate system or ENU coordinate system.

When the original data of photos or point cloud have GPS information, but an arbitrary coordinate system is chosen during reconstruction in DJI Terra, DJI Terra will generate a point cloud file in the ENU coordinate system and store the information in the metadata.xml file in the same directory as the LAS file. If the user needs to retain point cloud coordinate information, do not delete the metadata.xml file when importing the LAS file to DJI Modify. DJI Modify will automatically read and complete the point cloud coordinate information. If the user does not need point cloud coordinate information, the metadata.xml file can be deleted, and during preprocessing, click OK to assign an arbitrary coordinate system to the point cloud.

When the original data of photos or point cloud have no GPS information, and an arbitrary coordinate system is chosen during reconstruction in DJI Terra, DJI Terra will generate a point cloud file in an arbitrary coordinate system, and there will be no metadata.xml file in the same directory as the LAS file. After importing the file to DJI Modify, click OK in the preprocessing section to assign an arbitrary coordinate system to the point cloud.



3D Mesh Model

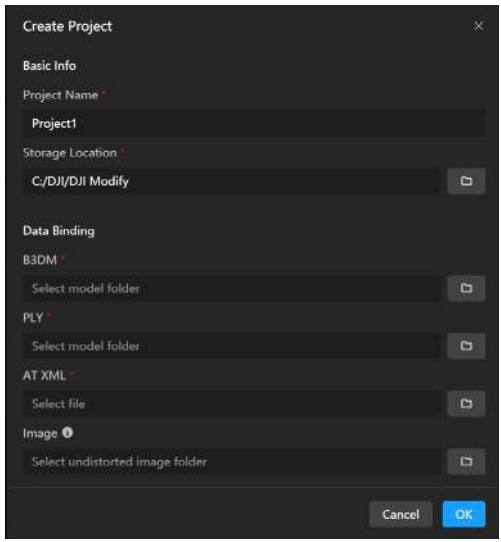
Fast Import from DJI Terra

After completing 3D reconstruction in DJI Terra, users can click on the DJI Modify button in DJI Terra to open the reconstructed model in DJI Modify with just one click, which allows for fast project import.

- Be aware that if users delete a project in DJI Terra, the project will also be permanently deleted in DJI Modify.

Creating a Project

Create a new project if the project does not have a DMEP file.



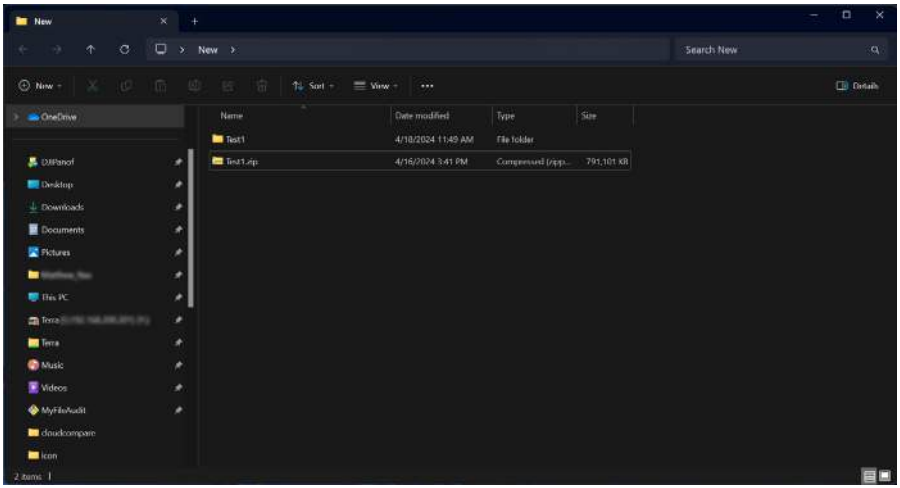
1. Click Create Project and fill in the project information. Enter the project name, choose the storage location, and select the location of the project-related folders, including B3DM, PLY, and AT XML files and undistorted images. Items marked with a red asterisk (*) are required.
2. After all required information is filled in, click OK to enter the model editing screen.

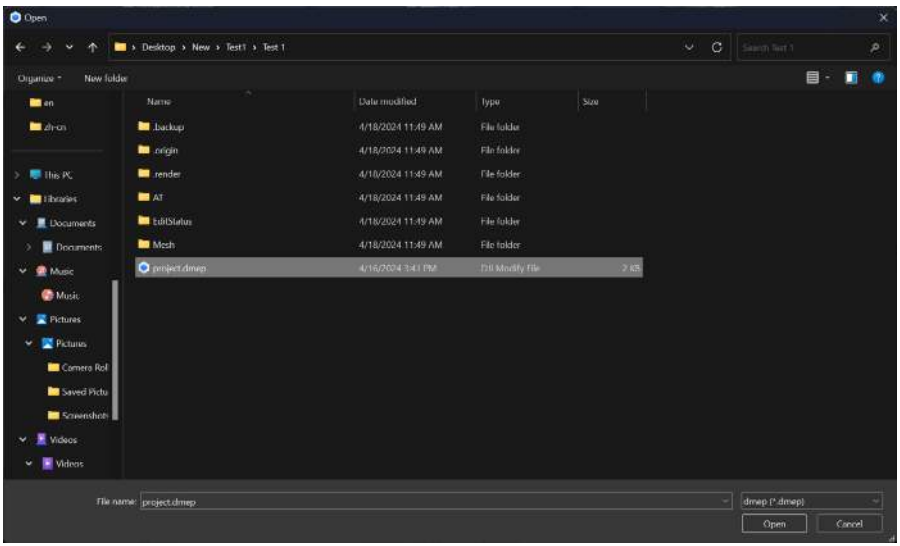
- Undistorted images can project textures onto the holes in the model. Importing these images can help users achieve improved hole-filling effects. Users can find the undistorted images of a project in the reconstruction output folder of DJI Terra (path: models\pc\0\.temp\ImageCorrection\undistort).

Importing a Project

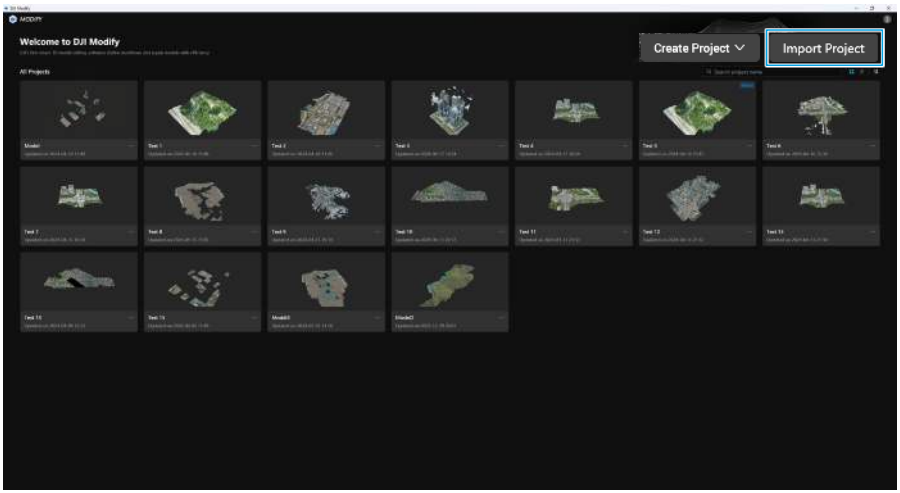
Users can directly import projects to DJI Modify.

1. Unzip the project folder and enter the project. Select the DMEP file and import it to DJI Modify. Before importing the project, make sure that the storage space is sufficient. Once the project is exported, do not move or delete the unzipped project folder. Otherwise, users will not be able to open and edit the project.





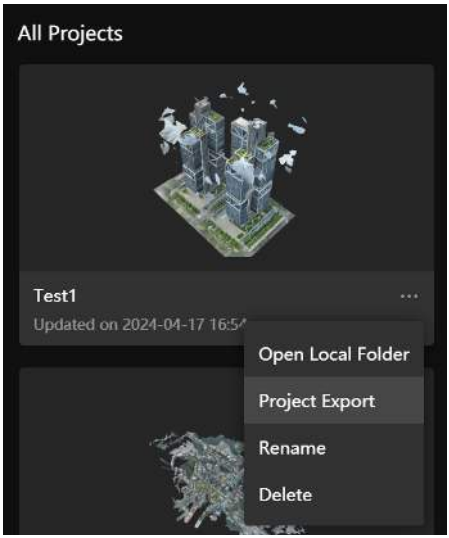
2. Users can also click Import Project in the top right corner, open the unzipped DMEP file, and import it to DJI Modify.



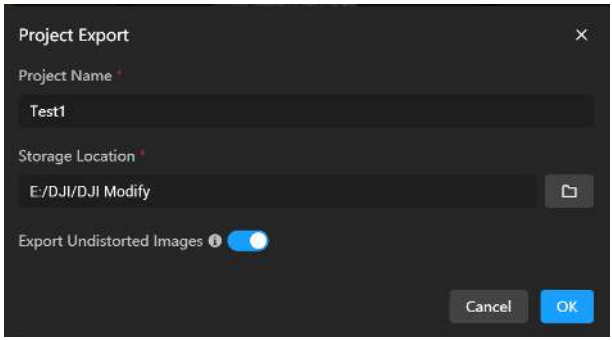
Exporting a Project

DJI Modify allows users to export original projects and save them locally, or export projects and transfer them to DJI Modify on another computer.

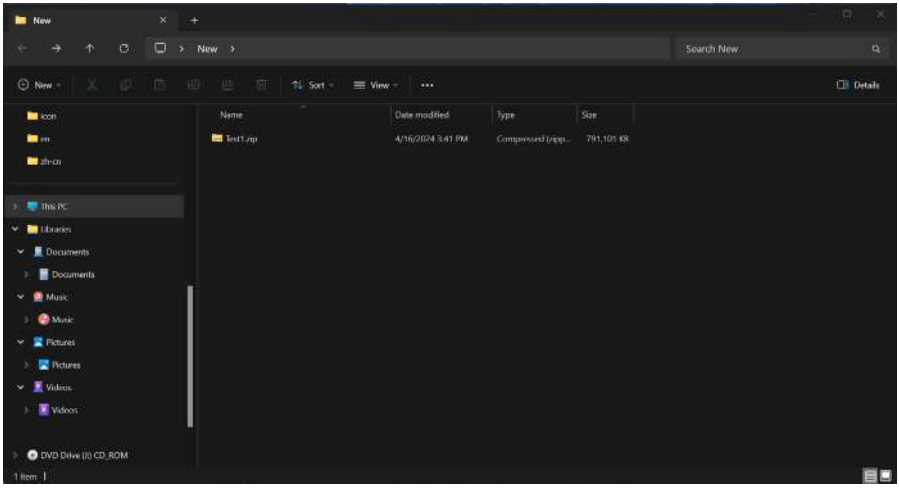
1. Click on • • • at the lower right corner of a project and select Project Export. Users can change the project name, the storage location, and choose whether to export the undistorted images.



- Exporting undistorted images are optional. Textures will be affected if there are no undistorted images. Make sure the original project has undistorted images. Otherwise, the undistorted images cannot be exported even though Export Undistorted Images is enabled. When exporting the undistorted images, the undistorted images generated by 3D reconstruction of DJI Terra will be used by default, with the default storage location: Project Name\models\pc\0\.temp\ImageCorrection.

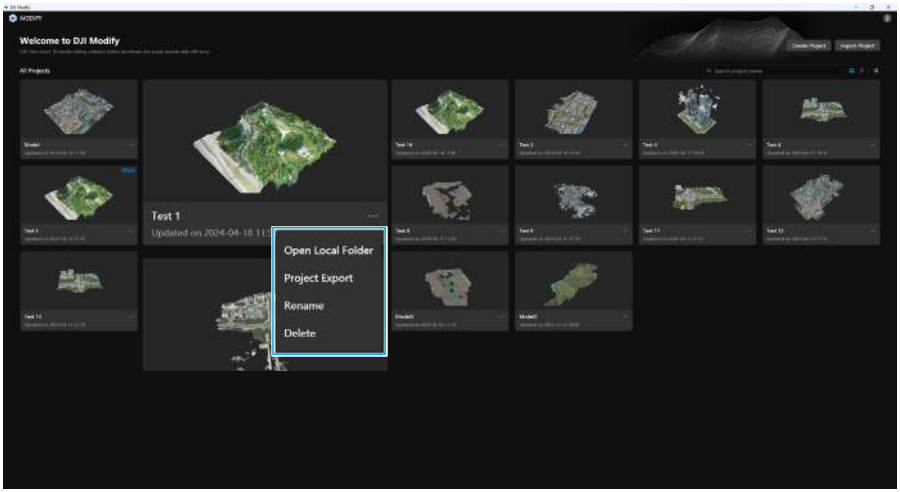


2. The folder will be displayed once the project is exported successfully.



Managing a Project

Click on • • • at the lower right corner of a project to open local folder, rename, or delete the project.



Opening the Local Folder

Users can click • • • and select Open Local Folder to find the project files. With this option, users can precisely identify the path of the project files, enabling them to efficiently locate and share project files.

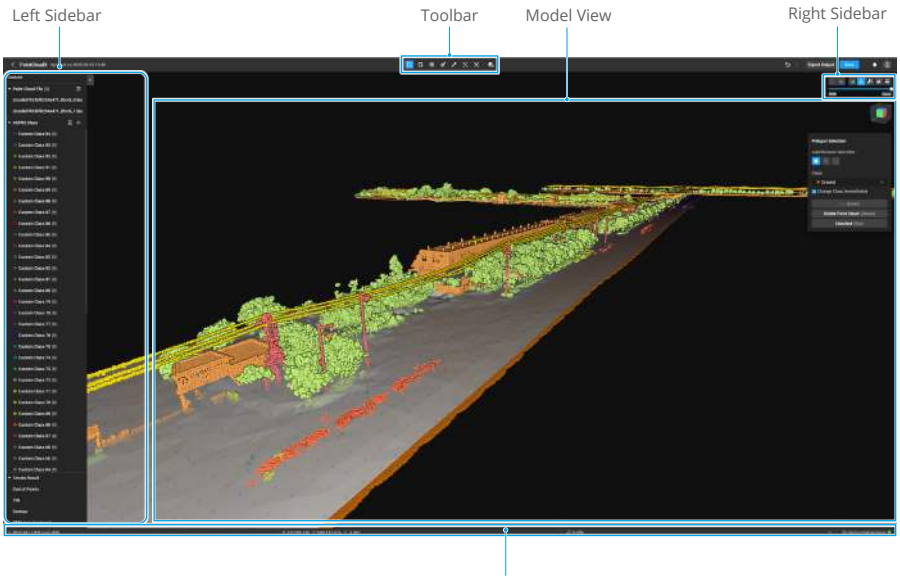
Renaming a Project

After a project is created or imported, users can still modify the project name by renaming it.

Deleting a Project

DJI Modify supports deleting projects. Deleted projects will be removed from the home screen, and the folders where the projects are located will also be deleted. The deleted models cannot be recovered. Exercise caution when deleting.

Point Cloud Model Editing Screen



Left Sidebar

Collapsing/Expanding the Sidebar

After entering the model editing screen, the sidebar will be automatically displayed on the left. Click ≪ to collapse the sidebar or ≫ to expand.

Displaying/Hiding a Model Block or Point Cloud Class

If a single model has too many blocks or point cloud classes, users can hide certain model blocks and point cloud data that do not require editing and only display the necessary ones.

Right Sidebar

Smaller/Larger Point Size

Click or to zoom in or out points.

RGB

Click to display the real color of the point cloud model.

Class

Click and drag slider to adjust the color intensity of points in different classes.

Elevation

Click to display the corresponding colors of the points at different heights.

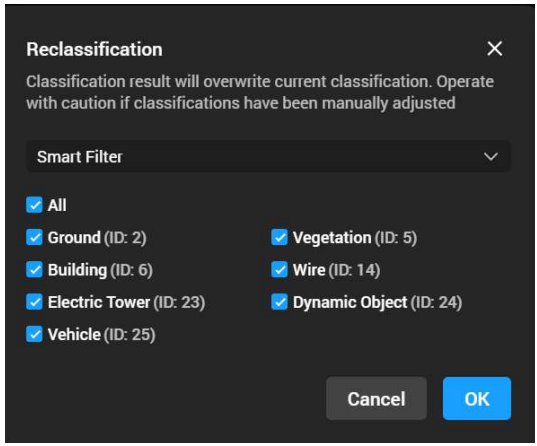
Displaying/Hiding a Model Block, Point Cloud Class, or Terrain Models

If a single model has too many model blocks or point cloud classes, users can hide certain model blocks that do not need editing, point cloud that do not need classification, and terrain models that do not need to be displayed. It supports one-click hiding of all model blocks, point cloud, or terrain models.

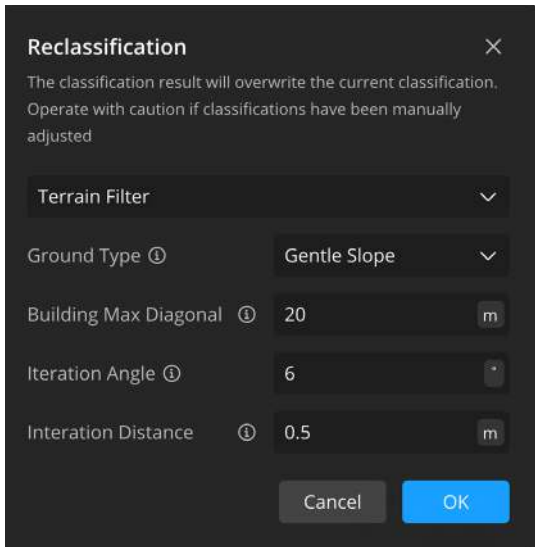
Reclassify Point Cloud

If the point cloud was not classified during preprocessing, users can click • • • in the ASPRS Class panel, then click Reclassification to enter the reclassification panel.

Smart Filter: Ideal for city and multi-building scenes and currently supports the classification into seven categories: ground, vegetation, building, wire, electric tower, dynamic object, and vehicle. The classification result will overwrite the existing classification of the point cloud file. When the point cloud density is low (average point spacing exceeds 20 cm) or the point cloud is overly dense, the classification accuracy may significantly degrade. For areas with unsatisfactory classification results, tools like Smart Selection can be used to adjust the classification results.

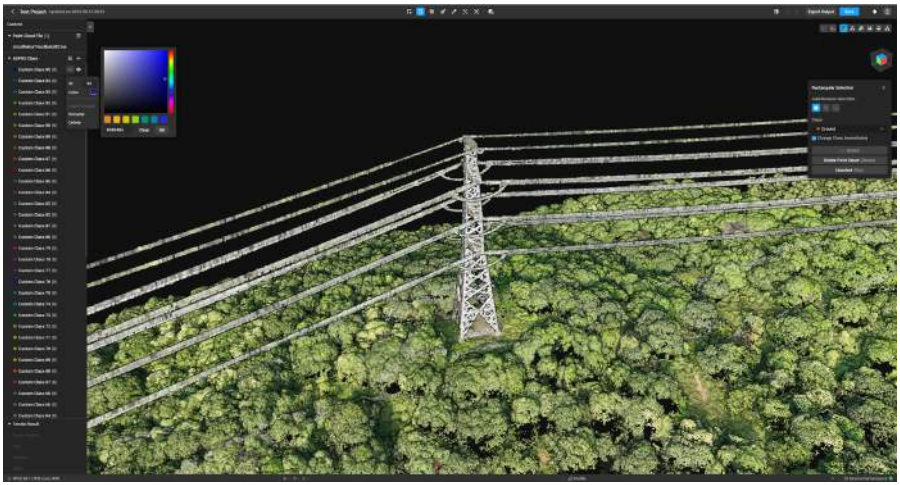


Terrain Filter: Ideal for quickly extracting ground points and retaining more low points. For areas where the classification effect is not ideal, you can adjust the classification results using tools like Smart Selection.



Adjust Point Cloud Color and Export Classified Point Cloud

In ASPRS Class, click the button • • • corresponding to the category to open the settings panel, which supports adjusting the color of the point cloud classification and exporting the point cloud under this classification.



Reflectivity

Click to display the corresponding colors of the points in different reflectivity. 0 to 38400 corresponds to diffuse reflection objects with reflectivity between 0-100%, and 38401-65280 corresponds to full reflection objects.

Number of Returns

Click to display the corresponding colors based on the number of returns when collecting data.

Rotation Tool

When entering the model editing screen, the rotation tool will be in the default viewing state. Red represents the X-axis plane of the model, green represents the Y-axis plane, and blue represents the Z-axis plane. Clicking on any plane will transition the model display to the corresponding plane.

Move the mouse cursor to the position of the rotation tool, and the cursor will change into a small hand icon. In this state, left-click and drag the mouse to rotate the rotation tool, and the model will rotate accordingly. When rotating the rotation tool by dragging it, the initially selected plane will be highlighted.

Toolbar

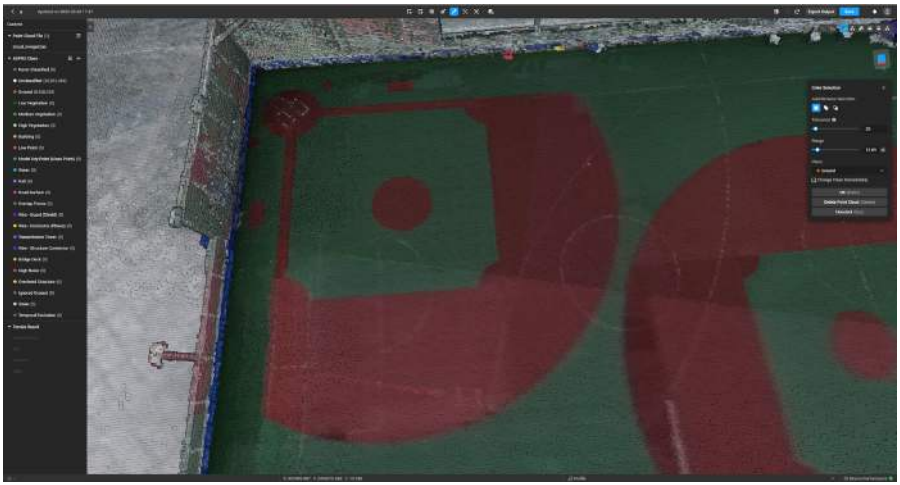
The toolbar at the top of the window includes the following tools from left to right.

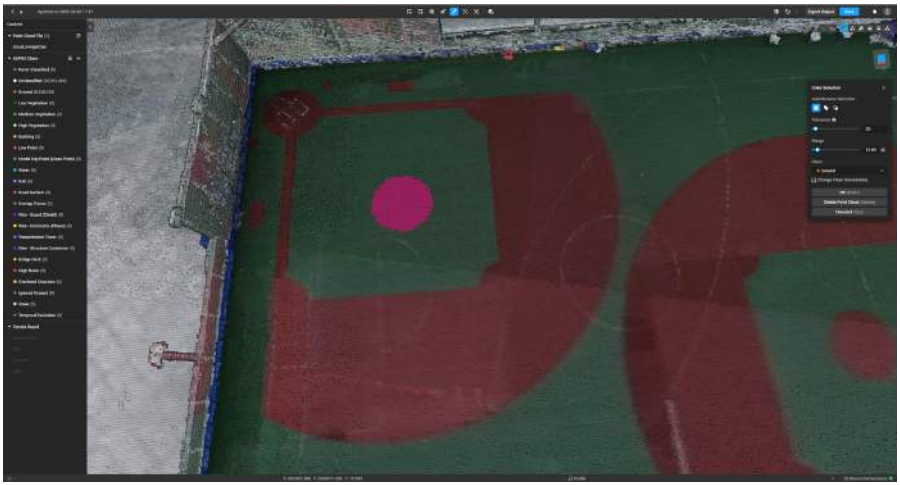
Brush Selection/Polygon Selection/Rectangular Selection/Single Selection

If there are misclassified ground points on the side of a building in the model that are difficult to select directly, users can click , , or , use rectangular or polygon selection, to classify the building side as Unclassified.

Color Selection

Quickly select point cloud with similar or identical colors. Increasing the tolerance level allows for selection of point cloud with color deviations within a certain range.





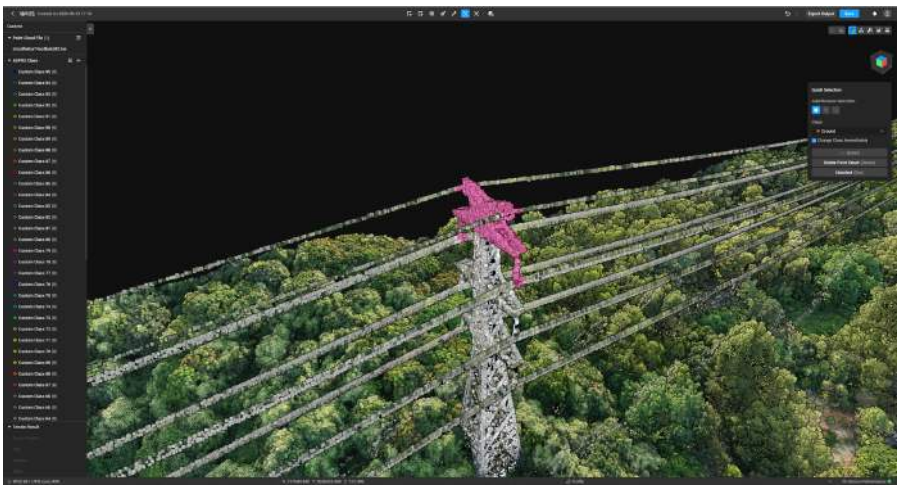
1. ASPRS classification is used to classify points within selected areas. 21 classes are supported by default and not editable.

2. To customize classes, click + on the left side of the screen to create class. The class IDs 64 to 255 are available for definitions by users. To change class ID, rename, or delete class, click •••. After class is deleted, points belonging to the class will be automatically defined as Unclassified.
3. After classification is completed, click Save button to save edits. DJI Modify also supports auto saving the edits. During the editing process, DJI Modify will automatically save the changes when users return to the home screen. If users directly close or exit DJI Modify, the edits will not be saved automatically.

Quick Selection

Before using Quick Selection, users need to use Smart Filter to classify point clouds. During classification, the AI algorithm will pre-divide the point clouds, grouping structurally similar and categorically related point clouds into blocks. With Quick Selection, users can adjust the category of blocks to improve the accuracy of point cloud classification.

Users can hover the mouse over the corresponding block to display and highlight the point clouds within the block, and then click to select the point clouds. It is recommended to select Change Class Immediately. Once selected, users can change their types within the block with a single click.



Structure Selection

1. Users can select one area and add or subtract areas. Once areas are selected, adjust the radius of the areas.
2. **Set the recognition type according to the task:** If you need to change points not classified as ground points to ground points, select Ground Point. If non-ground points are mistakenly classified as ground points, the recognition type can be changed to Other. Once the recognition selection is complete, you can classify the selected point cloud. Supported recognition categories are ground point, vertical surface, roof, power line, pole, and others.

3. **Tolerance:** Adjusting the tolerance level can modify the effect of smart selection. If there is a lot of point cloud noise, it will also affect the smart selection effect.

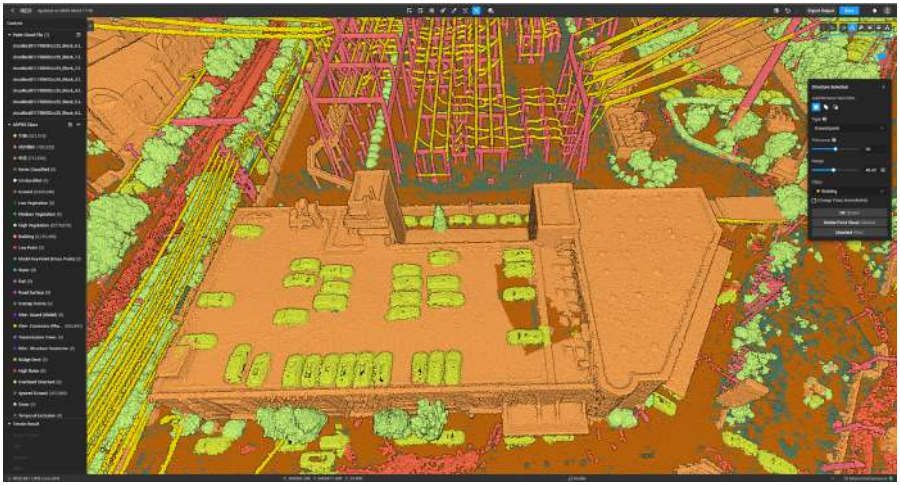
   Ground, Roof, Vertical Surface: Increasing the tolerance can enhance the selection effect on uneven surfaces.

   Power Line: Increasing the tolerance can improve the selection effect on sparse or thicker power lines.

   Pole: Increasing the tolerance can enhance the selection effect on thick poles.

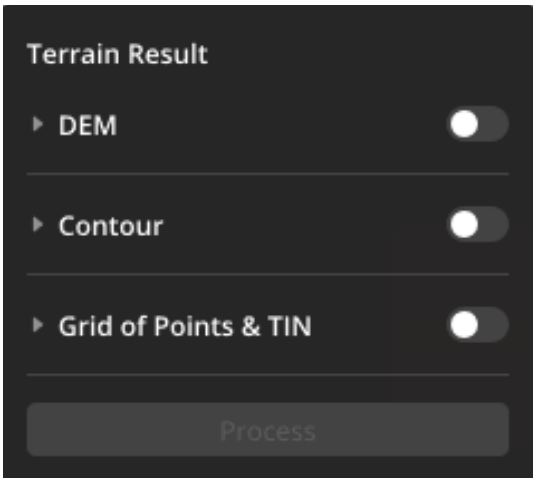
   Others: Increasing the tolerance can enhance the selection of more structurally similar point cloud. If there is a lot of point cloud noise, it is recommended to use this type.

Non-Ground Points Misidentified as Ground Points



Output Processing

After completing model editing and point cloud classification, users can enter the terrain result section to enable outputs such as DEM, Contour, or Grid of points & TIN, set parameters, and select the path to generate the output.



Lower Toolbar

Displaying Coordinate System

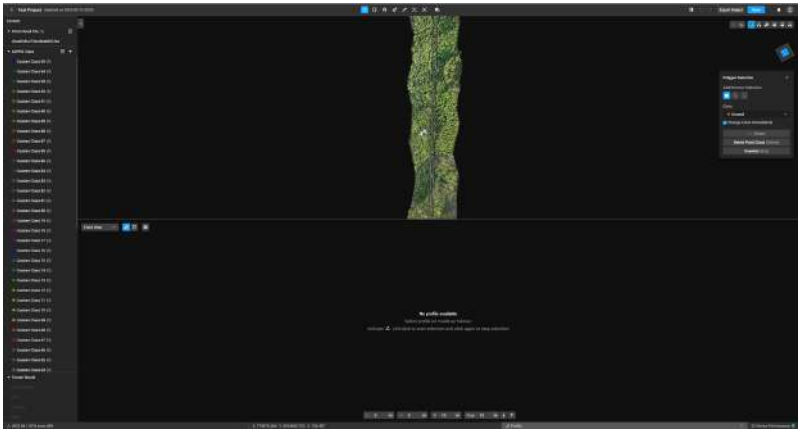
Display horizontal coordinate system of the model at the bottom left corner of model editing screen.

Displaying Point Cloud Coordinates

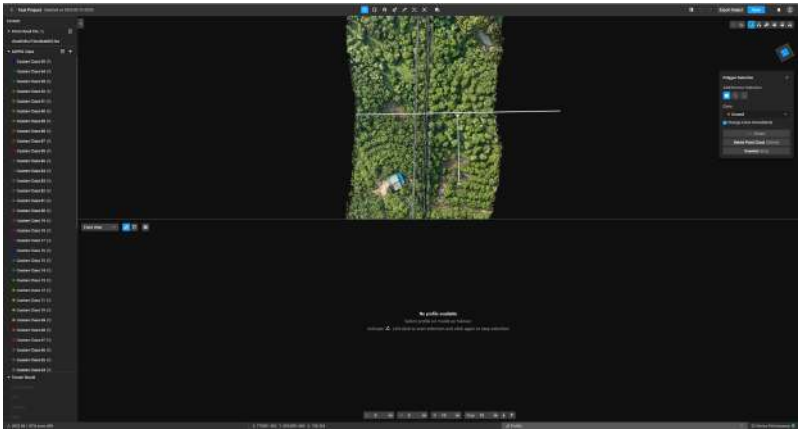
Hover the mouse over the point cloud to display the coordinates of the point cloud.

Profile

1. Click the Profile button to open the tool.

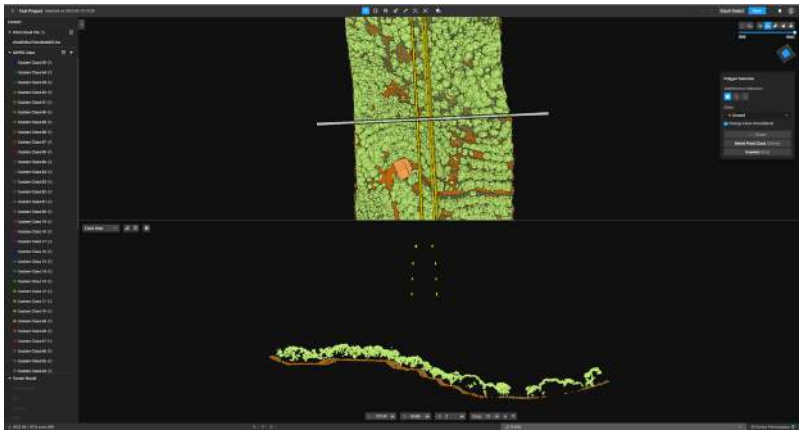


2. In the model view, left-click to start selection, and click again to stop. The arrow appearing during selection indicates the front view of the profile.

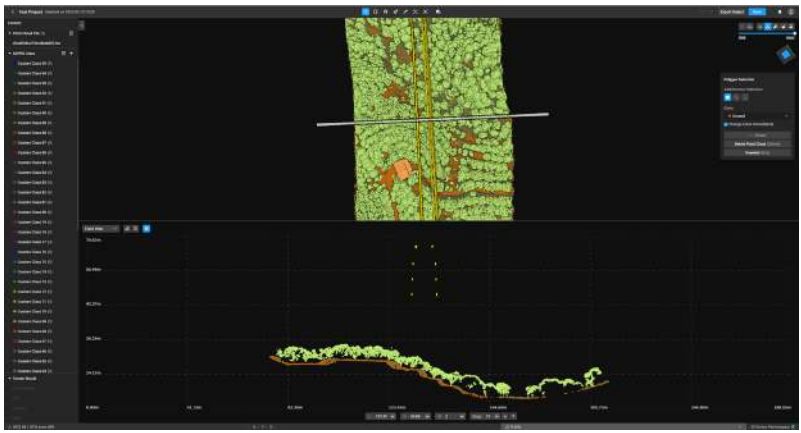


3. After selection is completed, a profile bounding box appears. The blue face shows the viewing direction, and the profile's point cloud will be displayed below. The profile allows users to select all point clouds and supports editing functions such as deleting and classifying point clouds. The selected point clouds correspond completely to the point clouds in the model view.

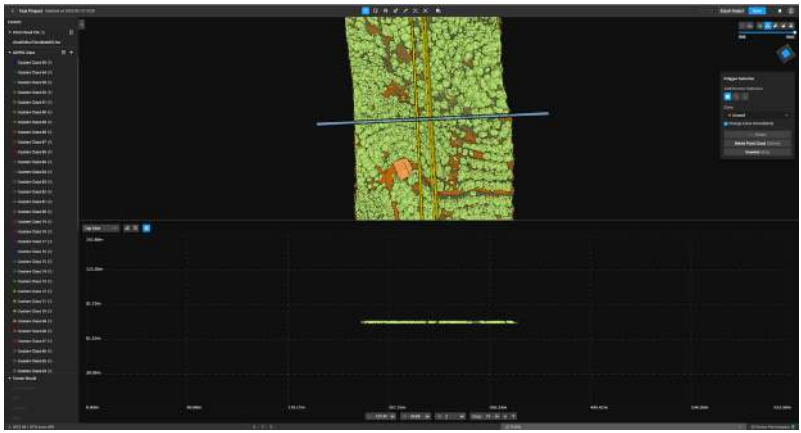
   Users can adjust the length, width, and height of the bounding box. Click the ↓ / ↑ or press the keyboard buttons ↓ / ↑ to move the profile along the observation direction and set the moving distance. Click ✎ to select profile again, click 🗑 to clear profile, and click ◿ at the bottom to close the profile view and end the selection.



4. By clicking the gridline icon #, users can load profile distance reference lines to assist in judging the distance and thickness of the point clouds.



5. Users can switch between six views of the profile point cloud: front, back, left, right, top, and bottom views.



Displaying Device Performance

Display CPU and GPU information of the device at the bottom right corner of model editing screen. If GPU is not NVIDIA dedicated graphics card, ⚠ will appear.

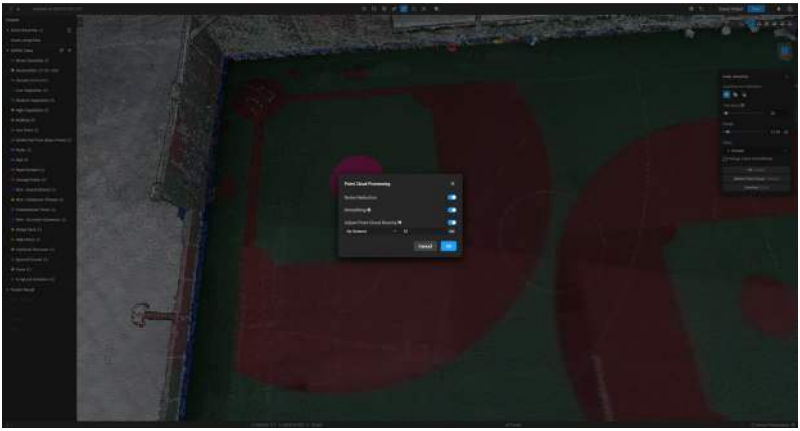
Right-Click Menu

Point Cloud Classification and Deletion

Right-click and select the corresponding classifications for the point clouds. Users can also click Delete to remove the selected point cloud.

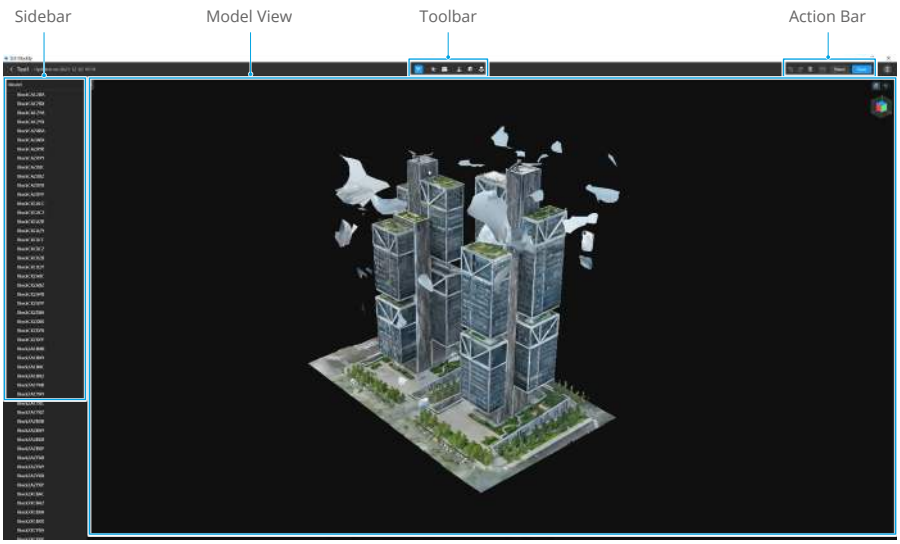
Point Cloud Processing

Click Point Cloud Processing to perform smoothing, noise reduction, or downsampling on selected point clouds. Please refer to the Create a Project section for parameter descriptions.



3D Mesh Model Editing Screen

Click on any project in the home screen to enter the model editing screen. Users can also enter the model editing screen of a project by double-clicking on the DMEP file, dragging the DMEP file into the home screen, or creating or importing a project.



Sidebar

Collapsing/Expanding the Sidebar

After entering the model editing screen, the sidebar will be automatically displayed on the left. Click ≪ to collapse the sidebar. Click ≫ to expand the sidebar.

Enabling/Disabling a High-Quality Model

In DJI Modify, high-quality models refer to PLY models, while low-quality models refer to B3DM models.

1. In the model editing screen, click to enable the high-quality model for a block. Alternatively, move the mouse cursor to a model block and right-click to enable the high-quality model.
2. Click again to disable the high-quality model. Alternatively, move the mouse cursor to a model block and right-click to disable the high-quality model. When disabling the high-quality model, DJI Modify will automatically save any modifications made to the high-quality model.

- High-quality models can only be enabled when using the flattening, texture repair, and hole-filling tools.
- After making modifications to a model with a tool where high-quality model needs to be enabled for editing, if the user changes to another tool without high-quality model (specifically referring to the switching between B3DM and PLY files), the currently modified model needs to be rendered first.

Displaying/Hiding a Model Block

If a single model has too many blocks, users can hide certain model blocks that do not require editing and only display the necessary ones.

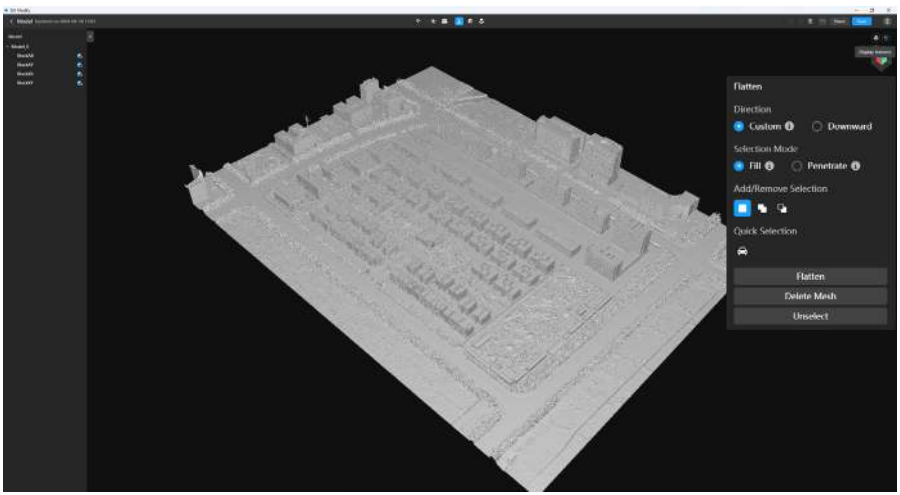
1. Click on the file list to hide the corresponding model block. Alternatively, move the mouse cursor to a specific model block and right-click to hide that model block.
2. After the model editing is complete, click to show the previously hidden model blocks again.

- Hidden model blocks will not be affected by any editing operations, regardless of whether a selected area exists, thus enhancing processing efficiency to a certain extent.

Model View

Textures

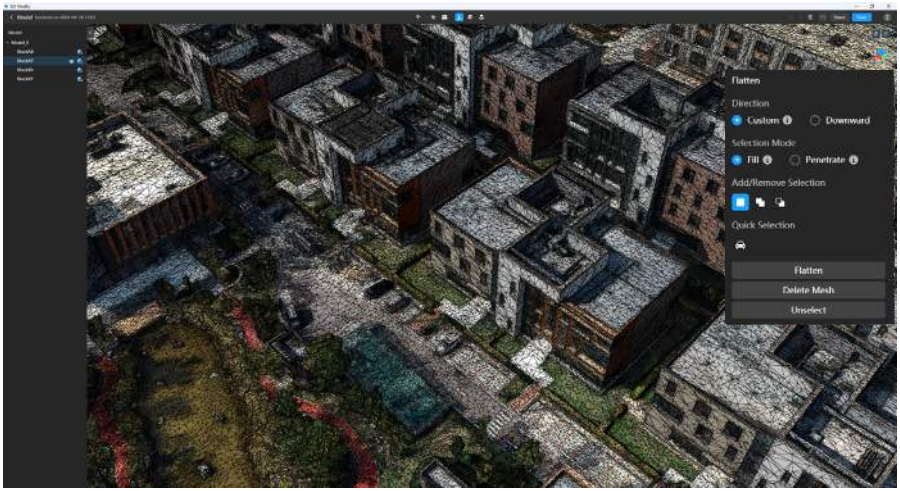
1. When high-quality models are enabled, users can click to hide the textures, and a white model will be displayed.



2. Click again to reload the textures, and exit the white model display.

Wire Frame

1. Click to display the wire frame.



2. Click again to exit the wire frame display.

Rotation Tool

When entering the model editing screen, the rotation tool will be in the default viewing state. Red represents the X-axis plane of the model, green represents the Y-axis plane, and blue represents the Z-axis plane. Clicking on any plane will transition the model display to the corresponding plane.

Move the mouse cursor to the position of the rotation tool, and the cursor will change into a small hand icon. In this state, left-click and drag the mouse rotate the rotation tool, and the model will rotate accordingly. When rotating the rotation tool by dragging it, the initially selected plane will be highlighted.

Toolbar

The toolbar at the top of the window includes the following tools from left to right.

View

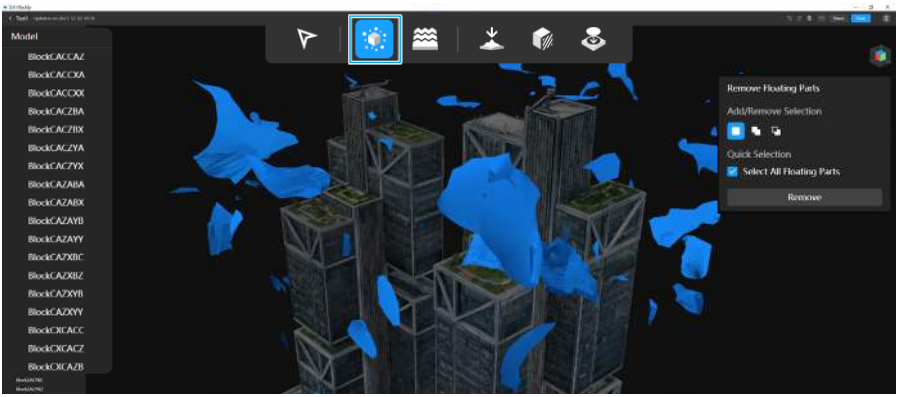
Users can use the view tool in the toolbar to browse or switch views of the model.

1. When entering the model editing screen, it will default to the view tool. Alternatively, users can click to enable the view tool.
2. When browsing a model, users can adjust the viewing angle by pressing down on the scroll wheel and moving the mouse, move the model by clicking the right mouse button and dragging, and zoom in and out by scrolling the scroll wheel.

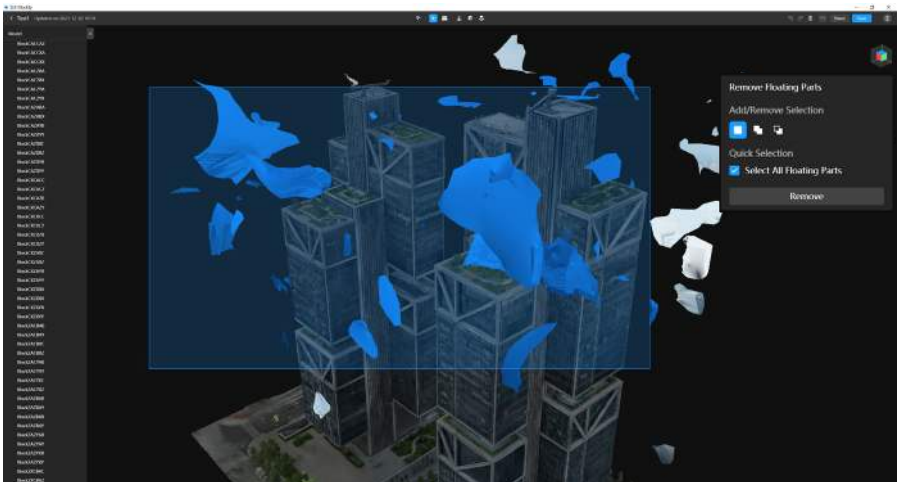
Removing Floating Parts

The removing floating parts tool helps clean up and refine the model by removing fragments or objects that are not connected or attached to the main body of the model.

1. Open a project and enter the model editing screen.
2. Click to enable the removing floating parts tool. DJI Modify will automatically select all recognized floating parts in the model and highlight them in blue, while the non-floating parts of the model will be displayed in gray.



3. Left-click on a recognized floating part to select it. Alternatively, left-click and drag to draw a selection area and select all floating parts within the area.

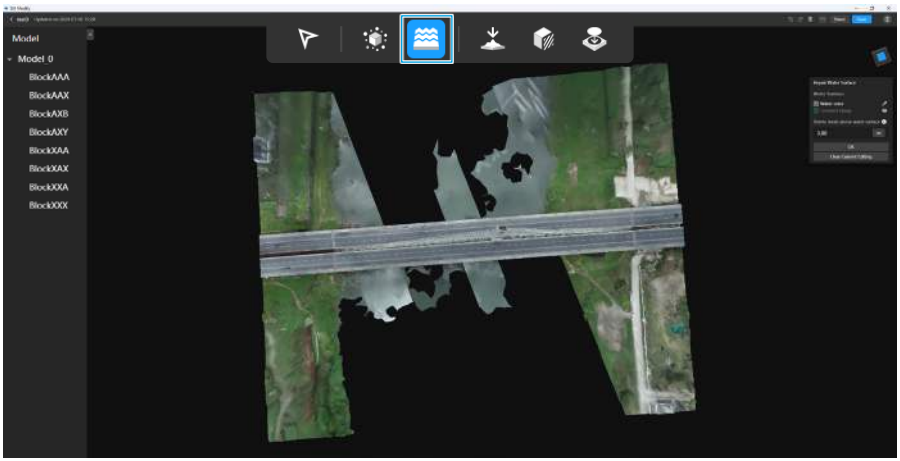


4. To add additional floating parts to the current selection, click or press the Shift key and drag to draw a selection area.
5. To subtract floating parts from the current selection, click or press the Alt key and drag to draw a selection area.
6. To delete the currently selected floating parts, click Remove or press the Delete or Backspace key on the keyboard.
7. Click Save in the top right corner or press Ctrl + S on the keyboard to save the current edits. Additionally, when users click < in the top left corner to return to the home screen, DJI Modify will also automatically save the current changes. After saving, the model will show the updated state with the floating parts removed.
8. To undo a previous action, click in the action bar or press Ctrl + Z on the keyboard. After undoing, users can click in the action bar or press Ctrl + Shift + Z on the keyboard to redo the action if needed.
9. Users need to render the model to synchronize the modifications to the high-quality model. Click • • • in the top right corner and select Render. DJI Modify will synchronize the edits to the high-quality model and generate a new B3DM model.
10. Once the model has been rendered, it cannot be undone. Users can start over by restoring to a previous version. Click to open the version history, select “Before Rendering” or “Initial Version” from the list, and restore the selected version. After restoration, users can re-edit the model.

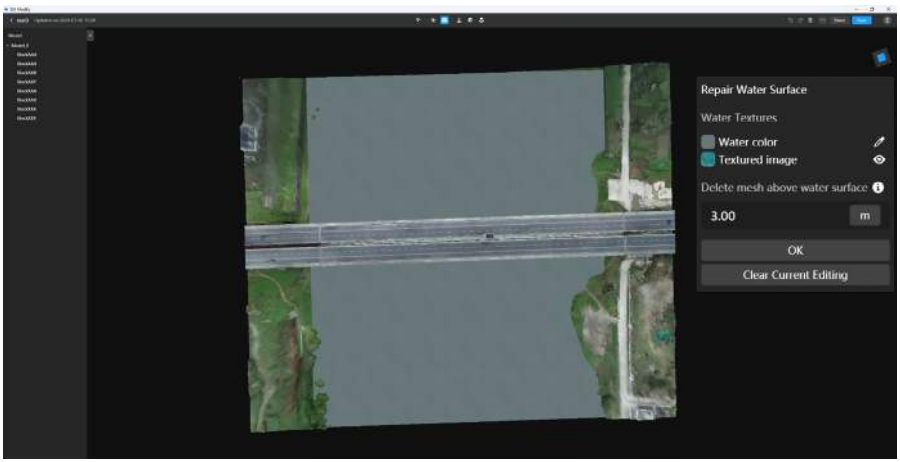
Repairing Water Surface

The repairing water surface tool can be used to address any water-related issues that may arise during the modeling process, such as missing water surfaces, bulges, and texture distortions.

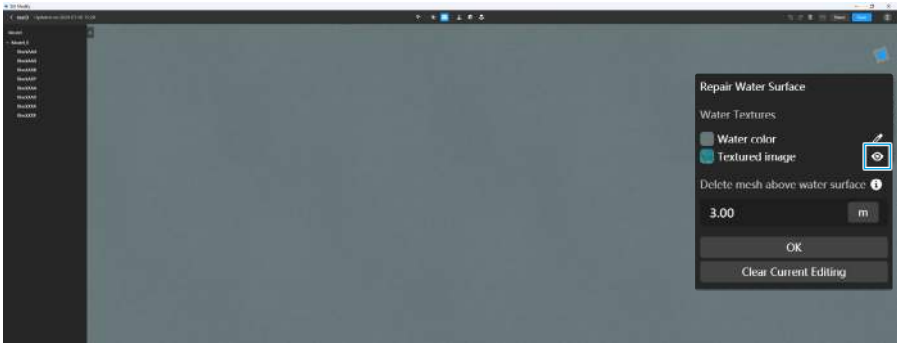
1. Click to enable the repairing water surface tool.

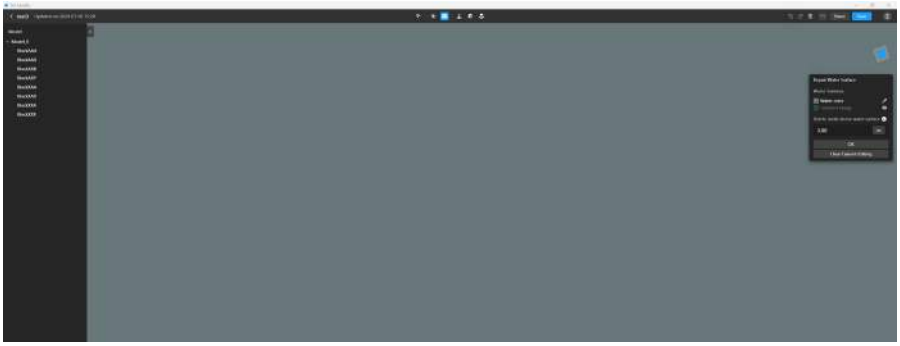


2. Click on the right panel to enable the color extraction tool. Move the mouse cursor to extract a color from the model and click to set it as the preset water surface color.
3. After the color is set, left-click to start drawing the water surface area. When drawing the polygon, make sure to closely follow the contours of the actual water surface. When editing the water surface, users can left-click on a vertex and drag it to a new position to modify the drawn polygon, press the Backspace or Delete key to remove a vertex, and click Clear Current Editing to quickly clear the drawing and start over again. Once the drawing is complete, DJI Modify will automatically generate a flat water surface.



4. After the water surface is generated, left-click and drag the generated water surface to adjust its position. Move the water surface up or down to adjust its height.
5. Click on the right panel to display a textured image that simulates a natural water surface. Click on the icon again to hide it.





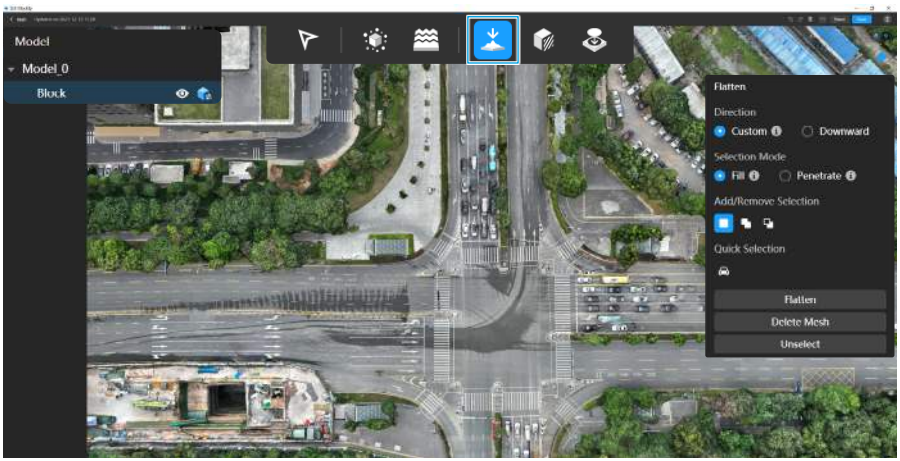
6. DJI Modify will automatically remove the model mesh below the water surface (the drawn polygon). It also supports removing the mesh above the water surface. The supported range is from 0 to 300 meters. By default, the height is set to 3 meters, which means that it will remove all the mesh within a height of 3 meters above the water surface. If the height is set to 0 meters, no mesh above the water surface will be deleted.
7. Click OK to save the current water surface.
8. Click • • • and select Render to synchronize the modifications to the high-quality model.

- The effects of removing the mesh above the water surface cannot be previewed in real time. Users need to render the model to view the actual effects.

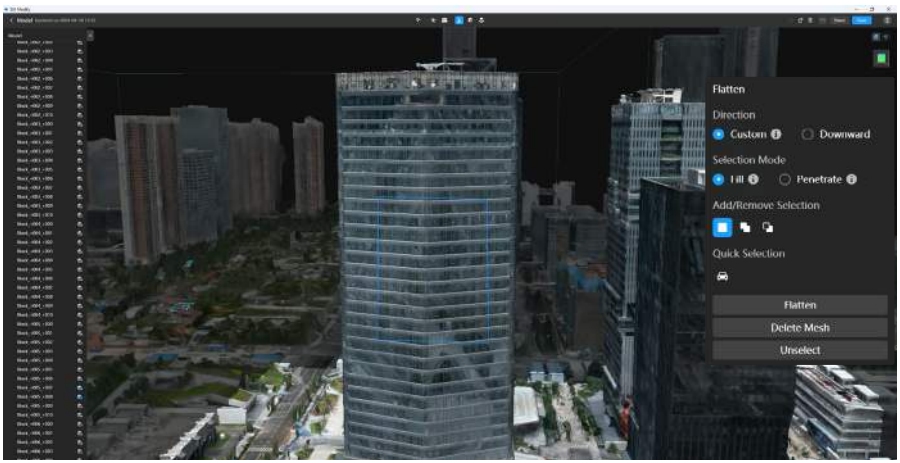
Surface Flattening

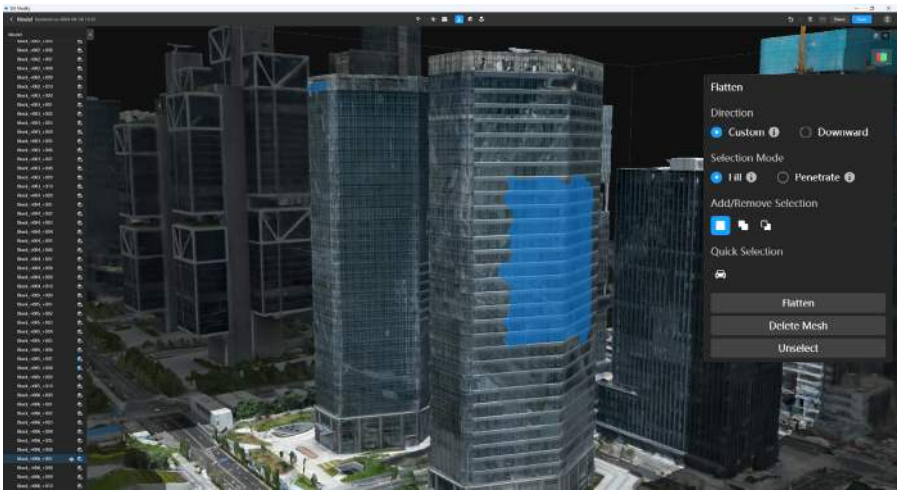
The flattening tool can be used to transform curved or irregular surfaces into flat surfaces, particularly for models with uneven or distorted surfaces. For the selection mode, depending on different situations, users can choose Fill or Penetrate, and draw the area that needs to be flattened or repaired. At the same time, users can choose the flattening direction, either Custom or Downward, and flatten the area to the desired height. It also supports automatic vehicle selection, allowing for quick flattening and texture repair of vehicles in the model.

1. Click to enable the flattening tool and click to enable high-quality models for the corresponding blocks that require editing from the sidebar. At the same time, the drawing tool will be automatically activated.



2. Left-click to draw a selection area. For the selection mode, if Fill is selected, gaps in wireframe selection will be filled in and included in the selection area.





- Mesh selection only takes effect when the high-quality model is enabled, and the selected coordinate points should be within the coordinate range of the model.
- The drawing tool is used to select areas on a two-dimensional plane. Once the drawing is complete, the selection will become three dimensional, and the selected polygonal area will be projected onto the 3D model.

3. To add additional areas to the current selection, click or press the Shift key and drag to draw a selection area. To subtract areas from the current selection, click or press the Alt key and drag to draw a selection area. To clear the current selection, click Unselect to remove all current selections.
4. To undo a previous action, click in the action bar or press Ctrl + Z on the keyboard. After undoing, users can click in the action bar or press Ctrl + Shift + Z on the keyboard to redo the action if needed.

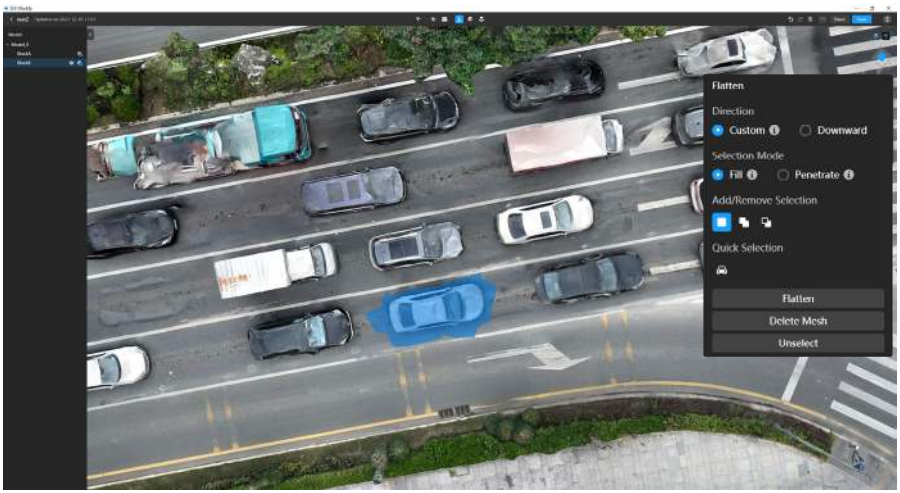
5. After choosing the selection mode, either Fill or Penetrate, and drawing an area, users can select Downward and choose Lowest height of selected wireframe or Custom (m) to further adjust the wireframe height and flatten the area.

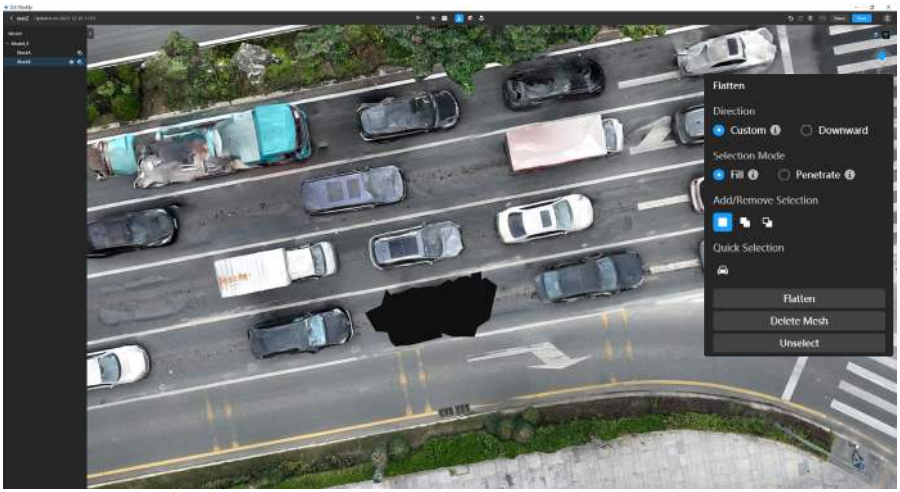
   Lowest height of selected wireframe: Users click Flatten and the area selected will be flattened to the lowest height of selected wireframe.

Custom (m): Users can enter a value or move the slider up and down to adjust the height. Click Flatten and the areas selected will be flattened to the custom height.

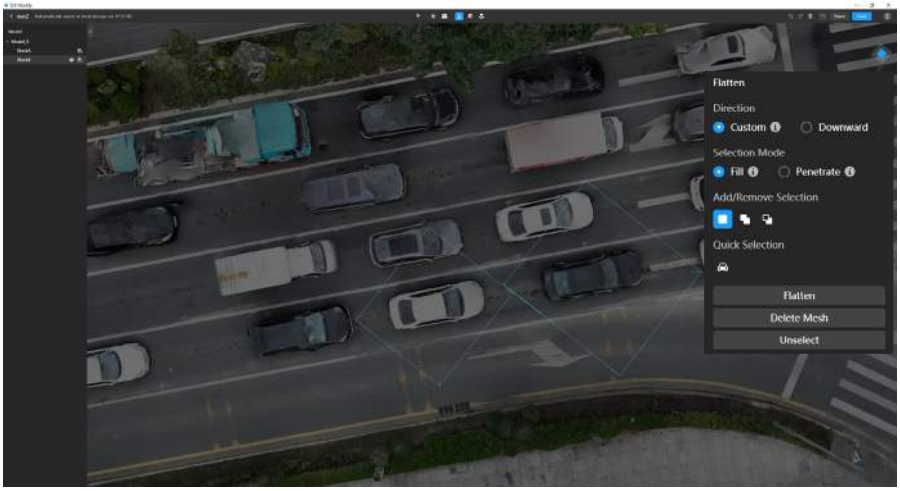
6. If there are many vehicles in the model, users can click to enable vehicle selection, which allows for quick identification of the vehicles within the model. In order to improve the accuracy of vehicle recognition, the model needs to be adjusted to a suitable viewing angle, ensuring that the vehicles are clearly visible. It is recommended to switch to a top-down perspective, as excessively tilted angles or excessive zooming in on the model can both affect the recognition accuracy.

7. DJI Modify also supports deleting mesh in the model. Select the mesh area to be deleted and click Delete Mesh or press the Delete or Backspace key to delete the selected mesh. After deletion, users can still click or press Ctrl + Z on the keyboard to undo a previous action.





8. Once the model modifications are complete, when users re-enter the project or disable the high-quality model, DJI Modify will provide a visual indication with a blue box outline, highlighting the areas where the previous model modifications (such as flattening or mesh deletion) were applied.

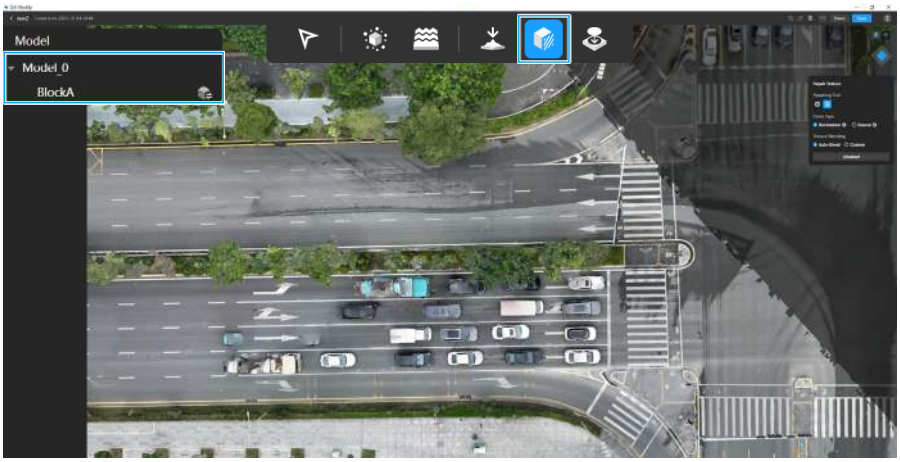


- When users finish the modifications and successfully render the model, the high-quality model will be automatically disabled, and the modifications will be applied to the model.

Texture Repair

The texture repair tool can be used to fix or correct issues or imperfections in the texture of a model. This includes eliminating unwanted textures on objects such as vehicles, trees, and pedestrians, as well as filling in missing or distorted texture details, such as duplicating road markings. The texture repair tool supports two types of repairs, including erasing and cloning.

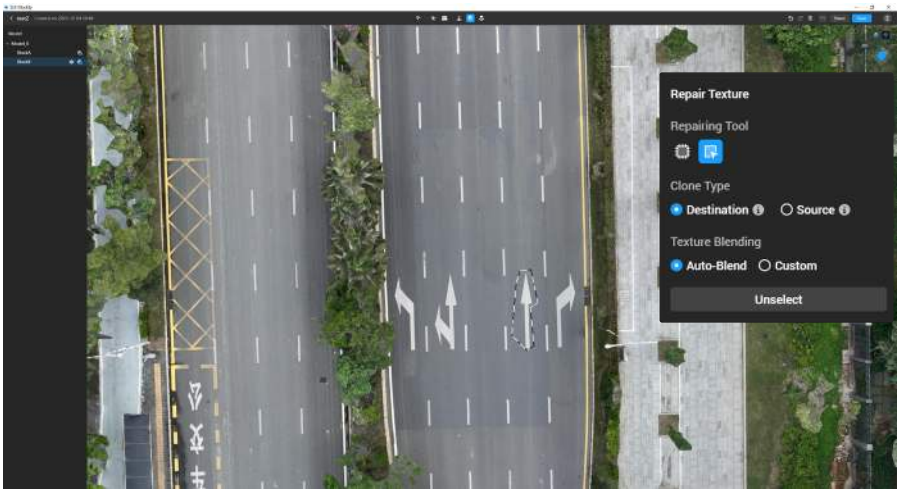
1. Click to enable the texture repair tool and click to enable high-quality models for the corresponding blocks that require editing from the sidebar.



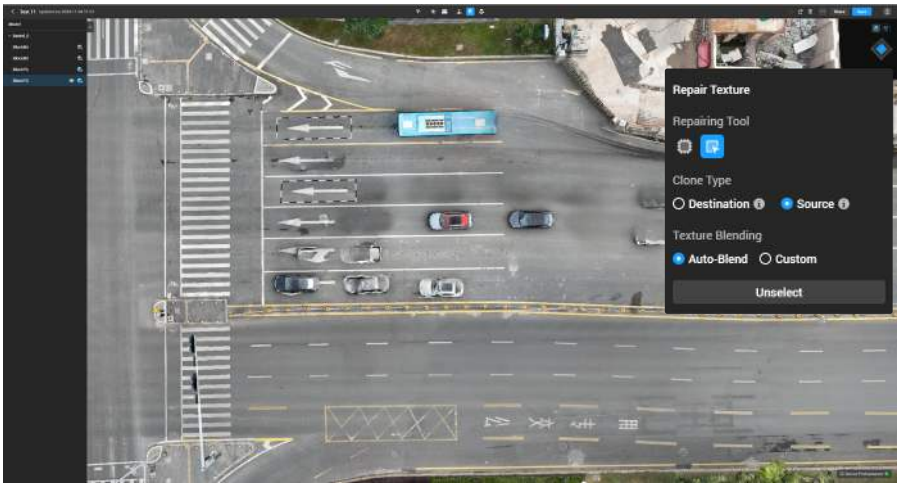
2. When using the texture repair tool, the Erase tool is selected by default. Users can also click to enable the Erase tool. The Erase tool can be used to remove stains, vehicles, and unwanted patterns on the model. When using this tool for the first time, it requires an initialization process that may take a few seconds. The specific time required for initialization may vary depending on the computer's performance.

3. Left-click to draw a selection area. When drawing the polygon, click again on the starting point or double-click anywhere to close the polygon, and the model mesh within the selected area will be highlighted. After selection, release the mouse button, and DJI Modify will automatically repair the texture of the selected area.

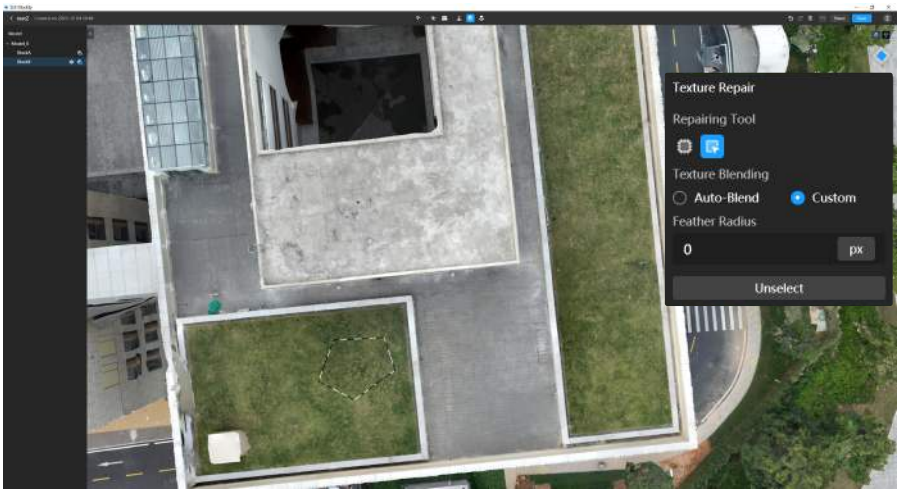
4. The Clone tool can be used to clone a selected area of the model and apply it to another part of the model. It essentially copies pixels from one area and pastes them onto another area, such as copying a particular road sign to a different location. Click to select the Clone tool, then draw a selection area on the desired part of the model that requires cloning. The edges of the selected area will be highlighted.

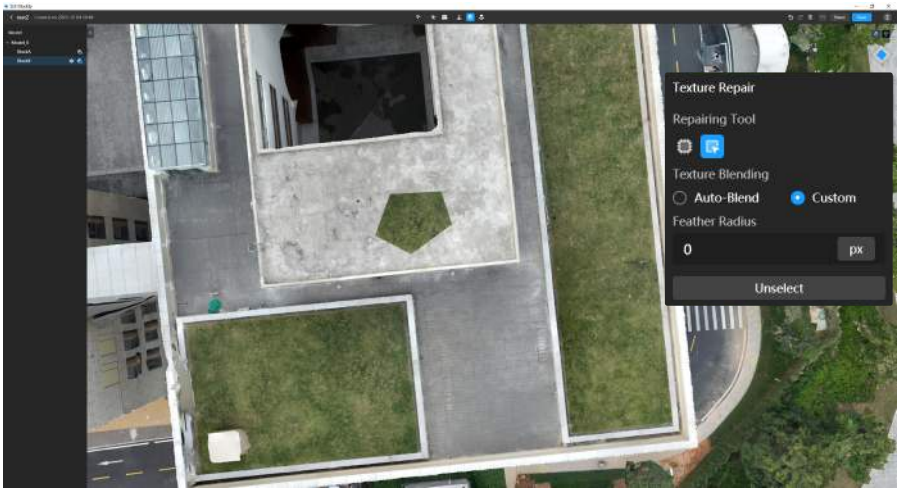


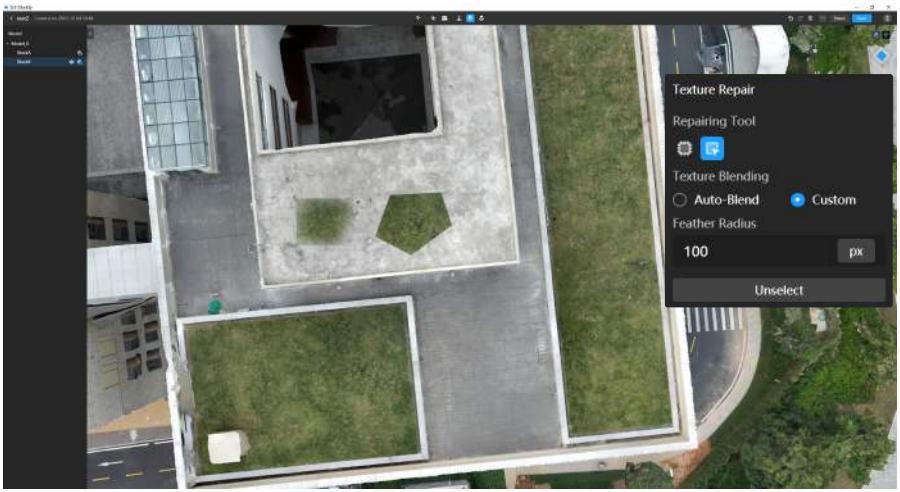
5. When Destination is selected as Clone Type, left-click and drag the selected area to the desired position. Then release the mouse button, and DJI Modify will perform the patch. When Source is selected as Clone Type, select a source area, left-click and drag other area. Then move to the selected area, and release the mouse button to blend with textures from other areas.



6. In order to better blend the cloned area with surrounding pixels, users can click Custom and adjust the feather radius (set to 0 pixels by default). Feathering is the process of applying a softening effect to the edges of the repaired area, creating a smooth color transition. The greater the feather radius, the more pixels are blended between the cloned area and the surrounding environment, resulting in a more seamless and natural effect.



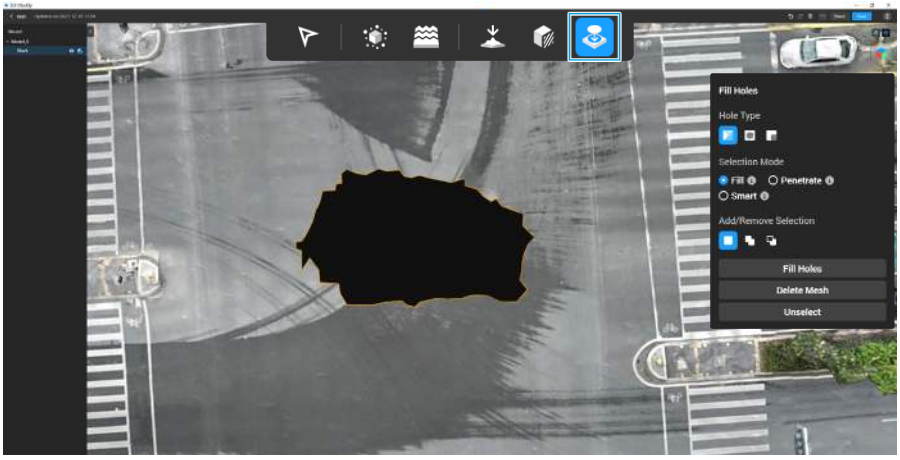




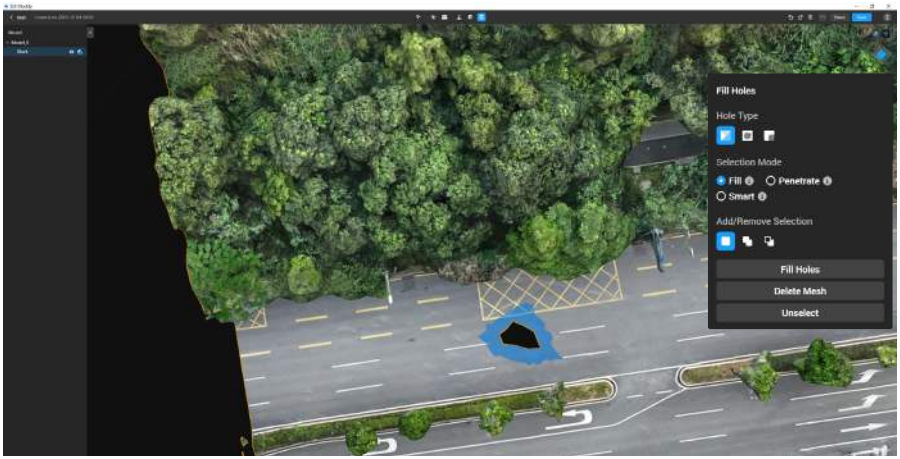
Hole Filling

The hole-filling tool can be used to automatically fill in or repair holes or gaps in the model's geometry, such as patching up the holes on a building or a guide board, ensuring a visually smooth and complete model. The hole-filling tool offers three types of patching, including custom, entire, and partial hole filling.

1. Click to enable the hole-filling tool and click to enable high-quality models for the corresponding blocks that require editing from the sidebar.



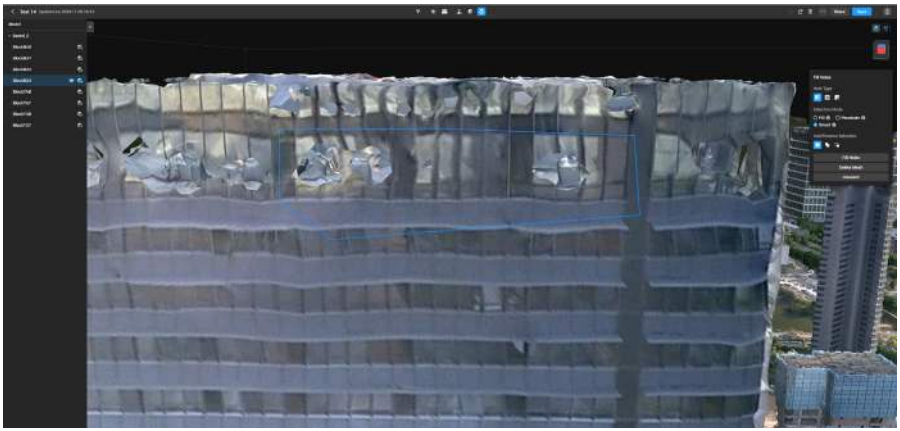
2. When using the hole-filling tool, the Custom tool is selected by default. Users can also click to enable the Custom tool. By using the custom hole-filling tool, users can select and fix custom hole areas that are of irregular shapes. Left-click to draw a selection area. When drawing the polygon, click again on the starting point or double-click anywhere to close the polygon, and the model mesh within the selected area will be highlighted.

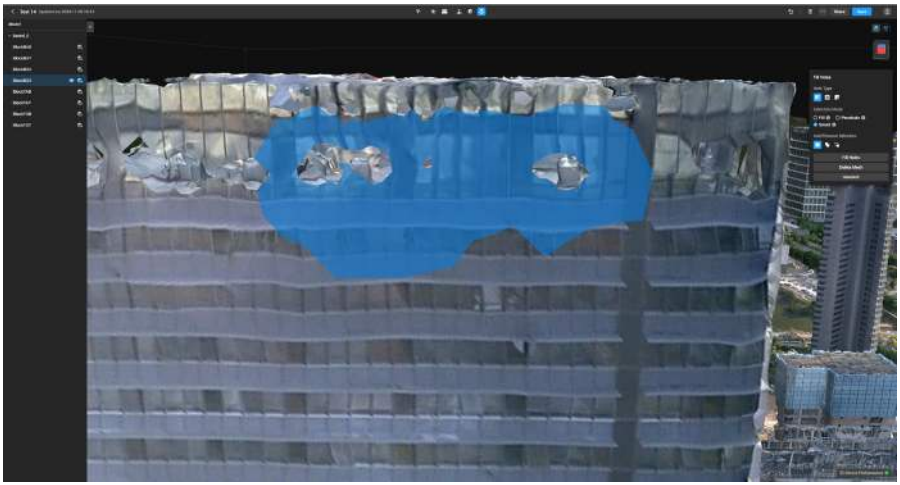


- When using the hole-filling tool, make sure to unselect areas that are not intended to be holes, as the selected polygon will appear in three dimensions on the model.

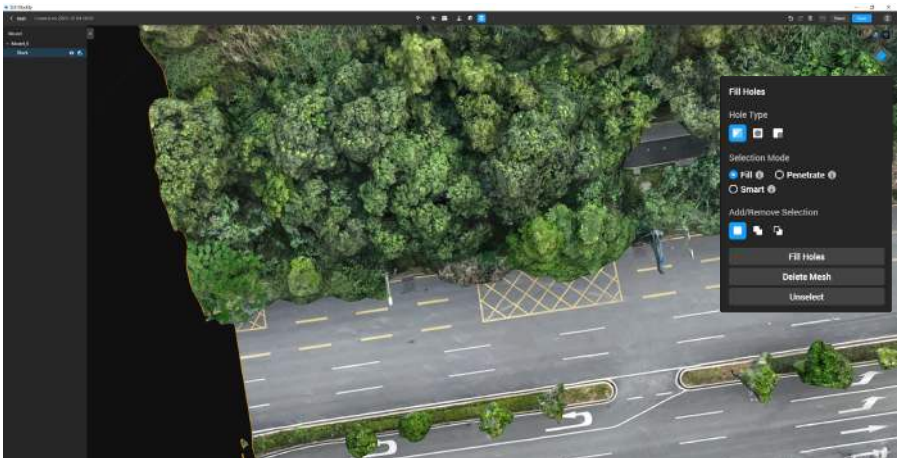
3. To repair holes of curtain wall, parapet, or billboard, users can use Smart selection. Wireframe around the hole will be quickly selected after the hole is drawn. When wireframe near the hole is not flat, users will not be able to select the hole area.

- When drawing the hole, make sure avoiding drawing lines around the voids. Otherwise, the result will be affected.





4. To add additional areas to the current selection, click or press the Shift key and drag to draw a selection area. To subtract areas from the current selection, click or press the Alt key and drag to draw a selection area. To clear the current selection, click Unselect to remove all current selections.
5. To undo a previous action, click in the action bar or press Ctrl + Z on the keyboard. After undoing, users can click in the action bar or press Ctrl + Shift + Z on the keyboard to redo the action if needed.
6. After selecting the desired area, click Fill Holes, and DJI Modify will automatically fill and repair the holes.



7. For holes recognized by DJI Modify, users can use the entire or partial hole-filling tool to quickly fill the recognized holes on the model. To enhance the efficiency of hole filling, users can start by using the custom hole-filling tool to delete the mesh in a selected area with multiple small holes (the area will be automatically recognized as a hole). If the entire hole area needs to be patched up, click to enable the entire hole-filling tool. Then click on or draw a selection area on the recognized holes, click Fill Holes, and DJI Modify will automatically fill and repair the holes.

Before Deleting the Mesh

8. If a hole only needs to be partially patched up, click to enable the partial hole-filling tool. Select a recognized hole that requires editing. Then click on two or more different positions along the highlighted edges to create reference points. These points will define the part that needs to be filled. Finally, click Fill Holes, and DJI Modify will automatically fill and repair the selected area.

Action Bar

General

Global Shortcuts

The table below lists the commonly used shortcuts and functions in the model editing screen of DJI Modify, which can help improve model editing efficiency. The shortcuts mentioned in this section are based on the American keyboard layout (QWERTY). Using a keyboard with a different layout may mean that the combinations are different from an American keyboard.

Actions	Shortcuts
Rotate model	Press and hold scroll wheel + Move mouse
Zoom in/out	Scroll the scroll wheel
Drag model	Right-click and drag/Space + Move mouse
Add to selection	Shift + Click to select/Drag to draw a selection area
Subtract from selection	Alt + Click to select/Drag to draw a selection area
Unselect	Esc + Click to select/Drag to draw a selection area
Delete	Delete/Backspace
Undo	Ctrl + Z
Redo	Ctrl + Shift + Z
Cancel drawing an area	Right-click

Undoing/Redoing an Action

When using the removing floating parts tool in 3D mesh model or editing point cloud, users can click ↩ to undo the previous action, and it allows undo up to 25 actions.

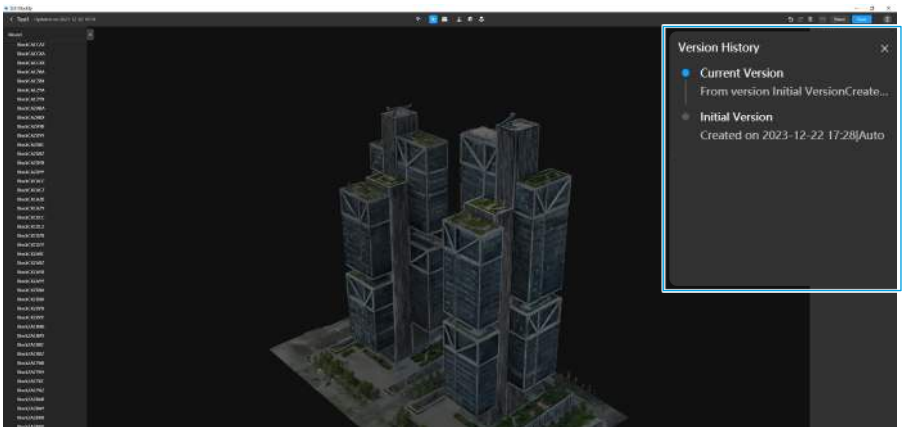
When editing the 3D mesh model by using the surface flattening, texture repair, and hole filling tools, with high-quality Models enabled, users can click ↩ to undo the previous action, and these tools only support undo once. By clicking ↪, users can redo the previous undone action, and it only supports redo once.

Saving a Project

Users can click Save to save the edits on the model. DJI Modify also supports auto saving. During the editing process, DJI Modify will automatically save the changes when users return to the home screen, when high-quality model is disabled, and before rendering and exporting the model. However, if the user directly closes or exits DJI Modify, the progress will not be automatically saved.

3D Mesh Model

Version History



Click on the top right of the window to view a list of history versions. By default, every project will automatically save an initial version. Click on the Initial Version and click OK will restore the current project to its initial state.

If the user wants to create a recoverable backup of the current modified version, click Save a Copy, name the version, and click OK to save the copy. Once completed, this version will appear in the history version list. All versions saved in the history version list can be restored at any time.

Before rendering, DJI Modify will automatically create a backup of the pre-rendering version. However, the version after rendering will not be automatically backed up.

Rendering and Exporting a Project

Export: Click • • • on the right side of the top toolbar and select Export to export the model file for the current project. DJI Modify supports exporting models in B3DM, OSGB, PLY, OBJ, S3MB, and I3S formats. When exporting, the original coordinate system of the model will be preserved.

Rendering: Click • • • on the right side of the top toolbar and select Render to render the current model editing results. Rendering means to synchronize modifications made on the low-quality model (B3DM file) to the high-quality model (PLY file).

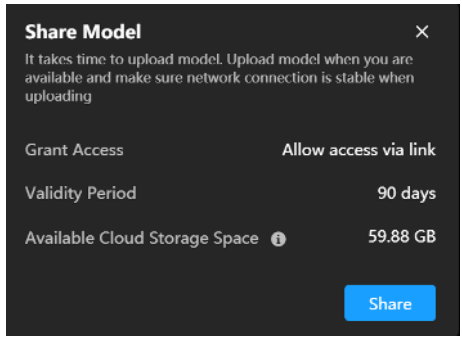
Saving a Project

Users can click Save to save the edits on the model. DJI Modify also supports auto saving. During the editing process, DJI Modify will automatically save the changes when users return to the home screen, when high-quality model is disabled, and before rendering and exporting the model. However, if the user directly closes or exits DJI Modify, the progress will not be automatically saved.

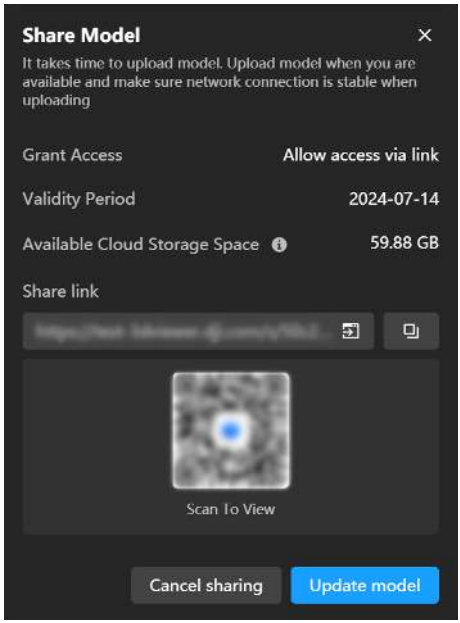
Sharing a Project

Users can securely upload the project files to the cloud and generate sharing links to share the models efficiently. With the link, others can quickly access the model online. Users can also view the model on their mobile devices, which is convenient to access the model on multiple devices.

1. After the model editing is complete, click Share in the action bar, and a pop-up window will appear.
2. Users should confirm the access permissions, valid period for sharing, and available cloud storage space (60GB cloud storage by default). When the cloud storage space is insufficient, users are unable to upload models to the cloud for sharing.



3. Models need to be rendered before they can be uploaded for sharing. If the sharing is canceled before it completes, both the rendered model and the sharing link will become invalid, and the user will be redirected back to the sharing window.
4. Click Share in the pop-up window to start sharing and wait for the rendering and uploading to complete. Once completed, click to copy the link and paste it into a web browser to view the model online.



- Make sure the network belongs to the same area when uploading or viewing the model. If model is uploaded outside of the Chinese mainland, users cannot view the model via network from the Chinese mainland.

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