PAISARQUE DOCUMENTATION

User's guide

1. CREATE 3D OBJECT

TAKING SUITABLE PHOTOGRAPHS

Follow the next link to learn how to take photos which are suitable for the reconstruction of a 3D model:

https://www.youtube.com/watch?v=nAlfN-FGcYw

RECONSTRUCTION

First of all, create a new Autodesk account in case you are not a member. Currently, it is totally free.

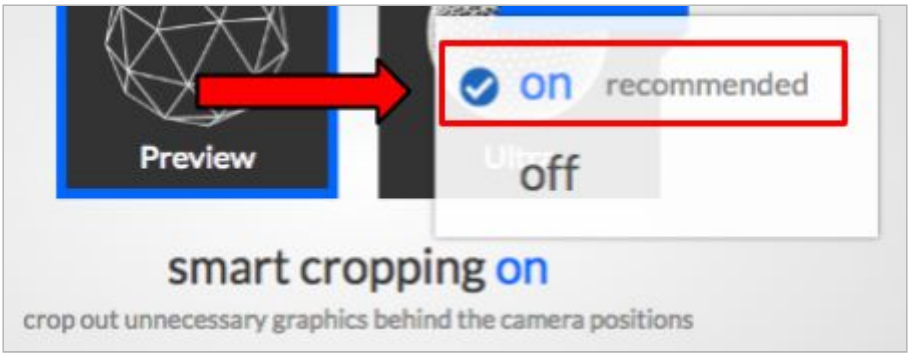
https://recap360.autodesk.com/

1. Select new reconstruction from photos

2. Drag a maximum quantity of 50 photos per project into the container similar as below

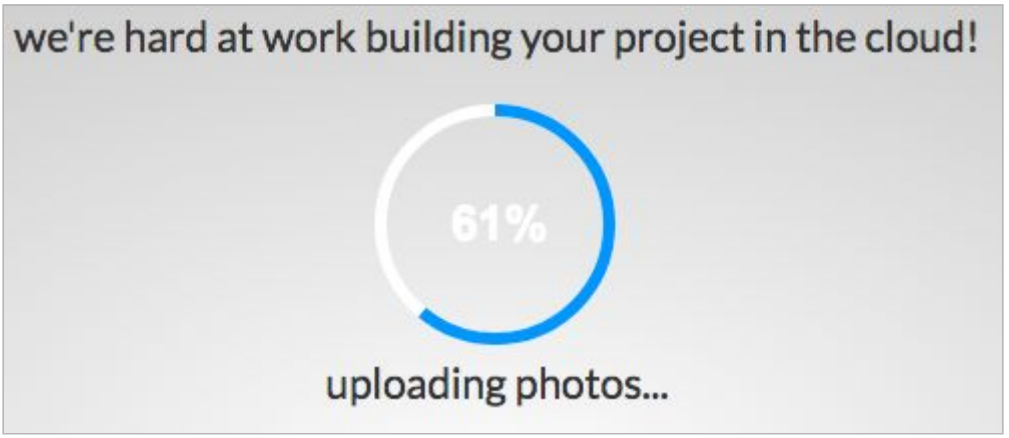
3. When all photographs finish loading, press the *settings* button to begin configuring the 3D model

4. To get only one texture and avoid troubles, turn on smart cropping



5. Press the *create* button to begin creation

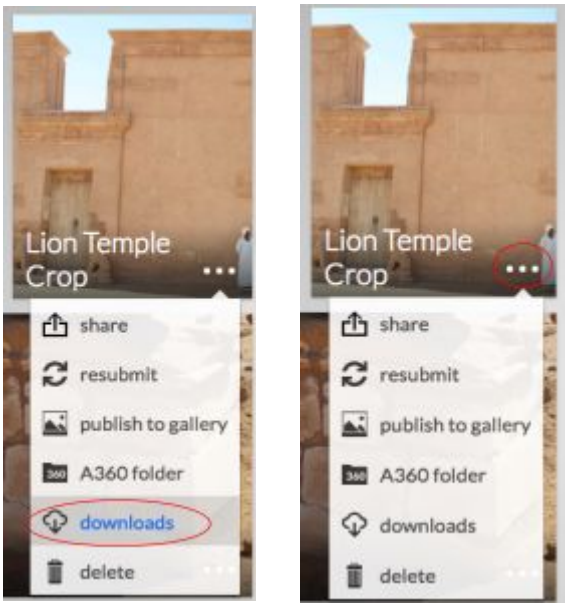
6. All photographs loaded will be uploaded as fast as possible, but in the meantime do not close the loading window or the project will not be created.



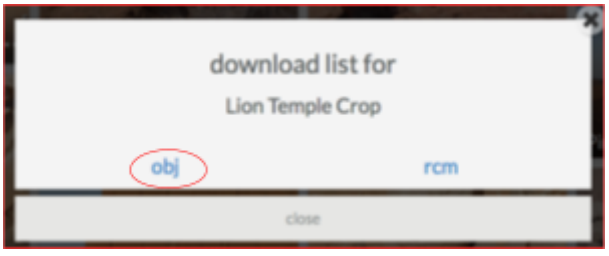
7. You will be notified by mail when the reconstruction process finishes. Wait until that moment! You can also be aware of the process on your autodesk home page.

EXPORT

- Point your mouse into the 3 point icon in any of your project reconstruction as shown below and select *downloads*:



- Click **obj** option in the dialog



- You will download a compressed file with few files inside
    - A 3D object file. This is the *.obj* downloaded from the reconstruction. Only this file will work in the visualizer. [*mesh.obj*]
    - A *.jpg* texture. Only one. ***Do not upload any other file format***. [*tex01.jpg*]

2. FIRST STEPS

CREATING NEW PROJECT

First thing to do is to create a new project so click the upper blue button. A form dialog should have been appeared.

All the inputs have to filled without exception:

- *Name*: Project id or project name, the definition is up to you, but this field will identify the project.
- *Author:* Author of the project. It is not the username!
- *Location*: Real location of the object represented at the application.
- *Latitude* and *longitude*: Coordinates of the real location.
- *OBJ Model*: Select the 3D data file in *obj*.
- *JPG texture*: Select the texture file in *jpg*.

Once you are done, submit the form and you will be ready to begin working on the project .

Notes:

P*ng* image format and other 3D object data formats different of *obj* are not allowed.

SELECT PROJECT

We have added some support to find the project you are looking for. Pagination will always help you in case of hundreds of projects and searching filters will allow you to do a more specific search. Among the filter options you can filter by *name*, *location* or *author.* In case of no filter, the default search will filter by *name.*

3. VISUALIZATION IN 3D

The visualization tab has some tools you can work with. They are divided in three different tabs which are:

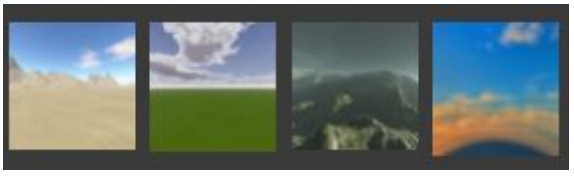
- *Project draft*
- *3D Tools*
- *3D Annotations*

PROJECT DRAFT

The information tab shows the project data. Stuff such as the *author,* the *location* and the *description* of the project can be modified anytime you need.

The map below indicates the 3D object real position. Coordinates can also be modified. The map will relaunch each time the coordinates change.

For animating the scene background, there are some cubemaps available for use. Just click in to visualize them. The default background can be applied too.



Notes:

Do not forget saving in case you want to keep changes made. Go to the Tools tab and once there look for the saving button.

If the map has not been displayed correctly, try refreshing or adding a 0 either in the latitude or in the longitude. Delete it when the map reloads.

3D TOOLS

General

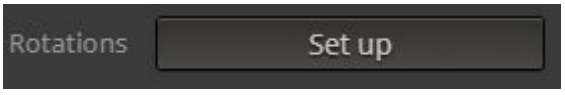
- *Auto save* - Enable this option if you want to forget saving for each change.
- *Save button* - Whenever you have modified any information about the project.
- *Fullscreen* - See 3D scene in full screen.

Camera

- *Restore camera* - Set main camera at the default and initial position.
- *Orbit* - Use the slider variable to make the 3D model complete closed orbits at the given speed.

3D Model - Rotations

First thing to do before doing some work in the project. The 3D model used for each project can come with good rotations by default but there is a possibility that it contains some bad rotations due to the photogrammetry process.



- *Rotate model* - Rotate the model as you want. You can use:
  - *Sliders*: These blue sliders can help you to rotate the model in each possible axis.
  - *Keys*: To do it even more precisely, use A, S, D keys where each one corresponds with one axis.
- *Apply changes* - Once you are happy with the 3D model, apply changes with the button below. Doing this stuff you do not have to apply these changes anymore.
- Cancel changes - The previous rotation was correct? Click the 'X' button to cancel any change.

Measurements

- *Set up the scale*
    - Enter a valid scale for the 3D model in the input in meters which can correspond with the distance you are going to measure to configure this setting.
    - If the scale input is empty, the default scale will be 1 meter.
    - Select two points in the 3D model to indicate how long is it. As mentioned above, the selected 3D distance will be considered as 1 meter or any other custom scale.

- *Logs* - Each measurement will be saved in measuring logs. You can look at them using the following list:

- *Distances* - Same process as the scaling but avoiding the first step. Only select your points in the 3D model. Depending on the quantity of points (2 or more) the distance will be saved in different logs. Two possible states:
    - *Adding points* - Option for adding any quantity of points.
    - *Moving camera* - Option for moving the camera for the case where the desired point is behind the 3D model or in any position with bad visibility.

- *Areas* - The process is similar to the distances one. In this case, the selected points will be placed in an auxiliary plane which will be located in the position of the first point (This point has to be selected in the 3D model). Two possible areas to calculate:
    - *Top view area* - The plane will be lying horizontally. No custom position.
    - *Free area* - The plane allows customizing its position to adapt it at each surface.

Notes:

In the area process, the last selected point has to be the same as the first one to make a closed area.

Export scene

The 3D scene can be exported either capturing a snapshot or recording some complete orbits. Options described below:

- *Capture image* - Put the camera where you need and click the *capture* button. A dialog will be shown.
    - Download the image or
    - Add it to the project contributions just by clicking one of the options
    - Cancel the capture closing the dialog.

- *Record orbit* - Click the *record orbit* button and wait until the process finishes. Once the recording has been completed, a *webm* file will be ready to download.

- *Advanced options* - In case you want to modify some recording parameters, open this dialog. Options described below:
    - Name of the file to download
    - Format of the file to download (*webm* or *gif*)
    - Quality for *webm* videos (Low, Normal, High, Very high)
    - Orbit speed (Low, Normal, High)

ANNOTATIONS

Annotations are an easy way to mark up your 3D figure with a brief explanation. Each time you want to set up a new one, use the *Annotations* tab at the 3D navigation menu. You're given two buttons, both to enable or disable features:

- *Show*: Hide or show all the annotations displayed in the scene.
- *Annotate*: This checkbox button allows you to enter in *annotation mode.* This way, camera movement turns off and a simple click in the scene adds a new annotation mark.

All annotations are saved in the table below the mentioned stuff. The *annotation table* will let you click in each row to select one specific annotation and make it blink. Camera will shift to the annotation position as well. To delete them, just drag them individually to the trash below the table or click the button in the bottom to clean them all.

4. CONTRIBUTIONS

It is possible to add contributions to your current project. The formats of these ones are listed below:

- Image - *As jpg, png.*
- PDF
- Text - *As simple notes*
- Video - *As Youtube links*

All contributions will be specifically divided by types in each tab. Once in a format tab, it is possible to *add* or *remove* contributions.

ADD

- *Loading a contribution by typing its url*
    - Type an url or copy it from any source in the input.
    - When ready, click the “+” button to add it to your project. Here is an example of an image url, try copy-paste it in the url input.
    - https://cdn1.epicgames.com/ue/item/Store_Modular_Desert_Ruins_screenshot_02-1920x1080-168d06dc632ba9d32fa7458db00b7acb.png

- Loading from disc
    - As easy as click  to ask your computer for a file. Select one and send it.

- Text format:
    - Write something in the input and click the same button as above!

Notes:

If your contribution does not appear in his corresponding place, try *refreshing*  all the content.

Do not forget saving in case you want to keep changes made. 

REMOVE

To remove an existing contribution you have to follow two simple steps:

- Select a contribution by clicking into it. You can select múltiple items.
- Click 

Notes:

Like adding content, if your removed contribution is still on the page, try *refreshing*  all the content.

If selecting PDFs can be a trouble, try clicking the gray bar below each PDF.

Do not forget saving in case you want to keep changes made. 

5. EXPORT

Need to export your work? It is possible to export with many possibilities. The exporting table shows you which of the modules of your work can be downloaded to disk. Used file types are written below:

- *JSON* - Text file
- *PDF* - Text file
- *ZIP* - Compressed folder
- *CSV* - Tables file
- OBJ - 3D model data file
- *WBIN* - 3D model compressed data file
- *JPG* - Image

6. MORE

For any trouble or discussion contact us. Furthermore, if case of having an idea for improving the application you are free to tell us or even implement it at your own way. The contact information is written below:

- CaSES: Complexity and Socio-Ecological Dynamics - Mercè Rodoreda building (Campus de la Ciutadella). Ramon Trias Fargas, 25-27 - 08005 Barcelona
- https://www.upf.edu/web/cases - cases@upf.edu
- Interactive Technologies Group - Tànger building (Campus de la Comunicació-Poblenou). Tànger, 122-140 - 08018 Barcelona - gti-info@upf.edu
- https://www.upf.edu/web/gti