

CONDOR OSM IMPORTER MANUAL



1 CONDOR OSM IMPORTER

VERSION 1.0

This document describes the process of importing OSM building data into a landscape for Condor 3.

1.1 REQUIRED FILES

- Condor Landscape toolkit: <https://www.condorsoaring.com/v3downloads/>
- Condor OSM Importer: <https://www.condorsoaring.com/v3downloads/>
- Blender: <https://www.blender.org/download/>

Do not unzip “blosm.zip” found in the Condor_OSM_Exporter folder!

This version was written for use in Blender Version 4.0.2

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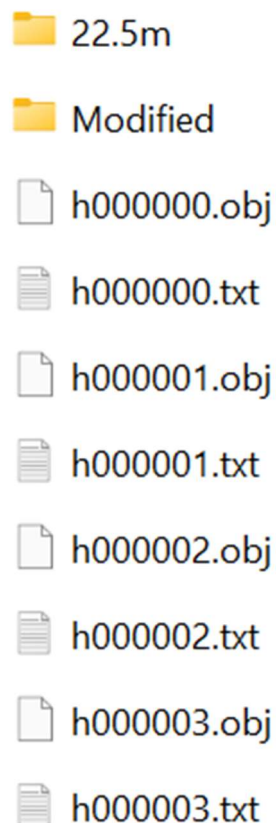
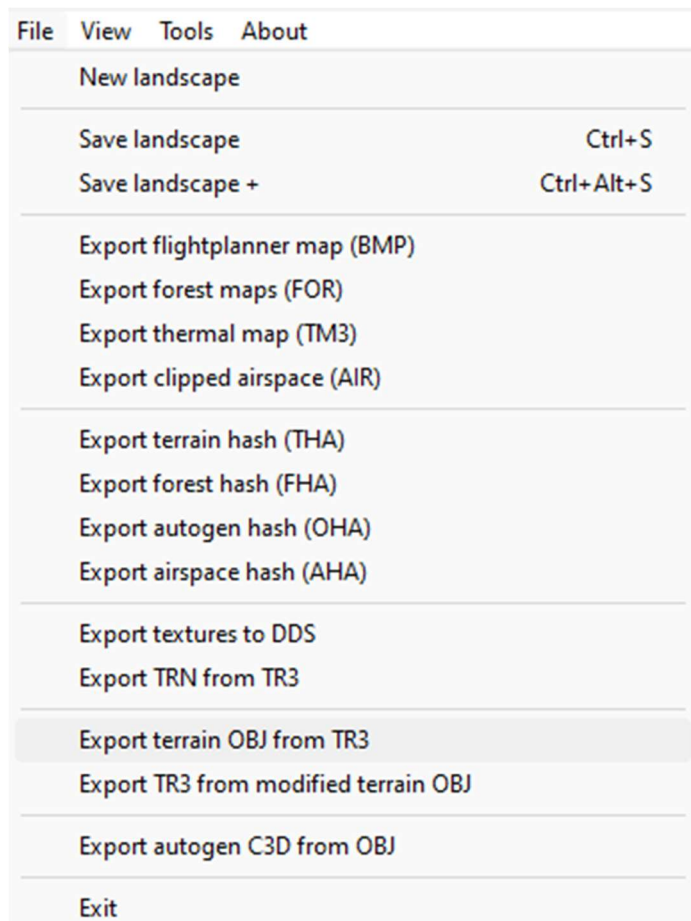
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3 PREPARATIONS IN THE LANDSCAPE EDITOR

This process assumes you already have a working landscape in Condor 3.

3.1 EXPORT OBJ FROM TR3

Open your landscape with LandscapeEditor.exe and export your terrain to object files with the “Export terrain OBJ from TR3” option.



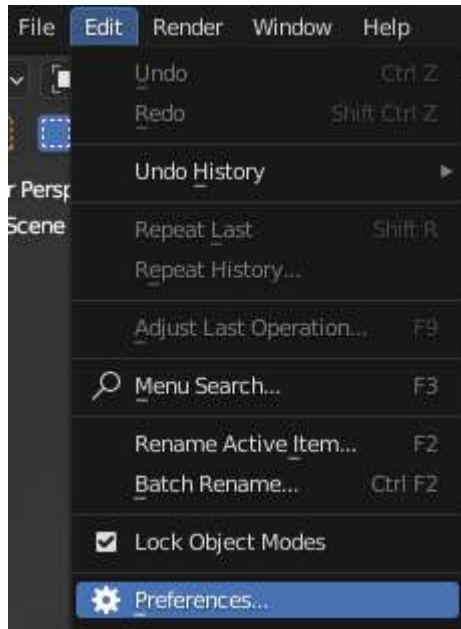
Once this process is finished you will find all the terrain patches as .obj file in your sceneries working/heightmaps folder. Each object file also has an associated text file with information about the patch. These are required for the next step in the process.

4 INSTALLING THE ADD-ON

This chapter sets up your Blender to use the add-on.

4.1 SETTING UP BLENDER-OSM

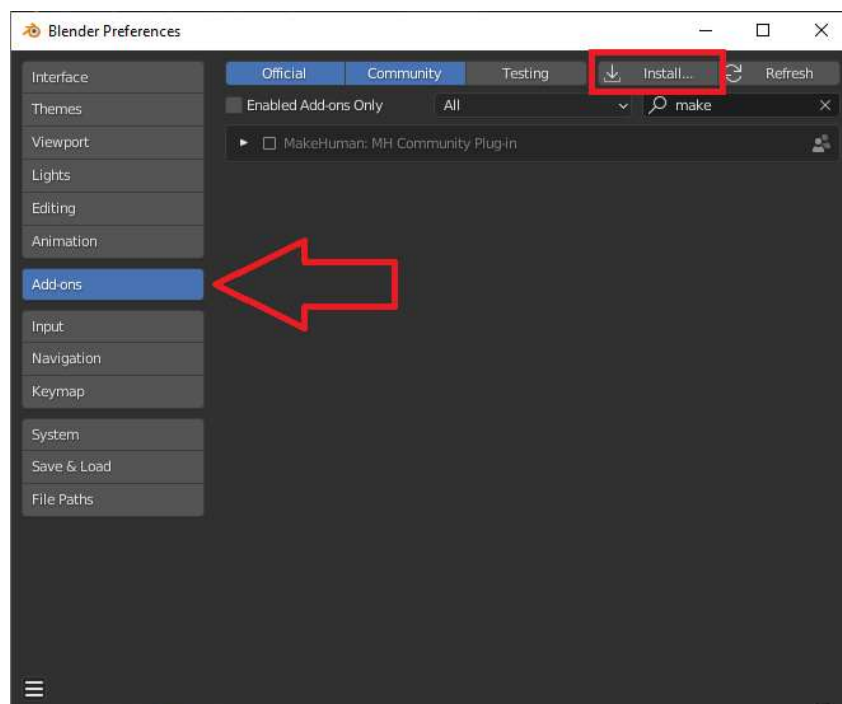
In the Condor OSM Exporter folder you will find a Blender file that is set up in such a way that it is ready to import the OSM building data. However you need to install the Blender-OSM plugin first.



Open Blender and open the **“OSM Condor Exporter.blend”** file. This file is included in the CondorOSM plugin download.

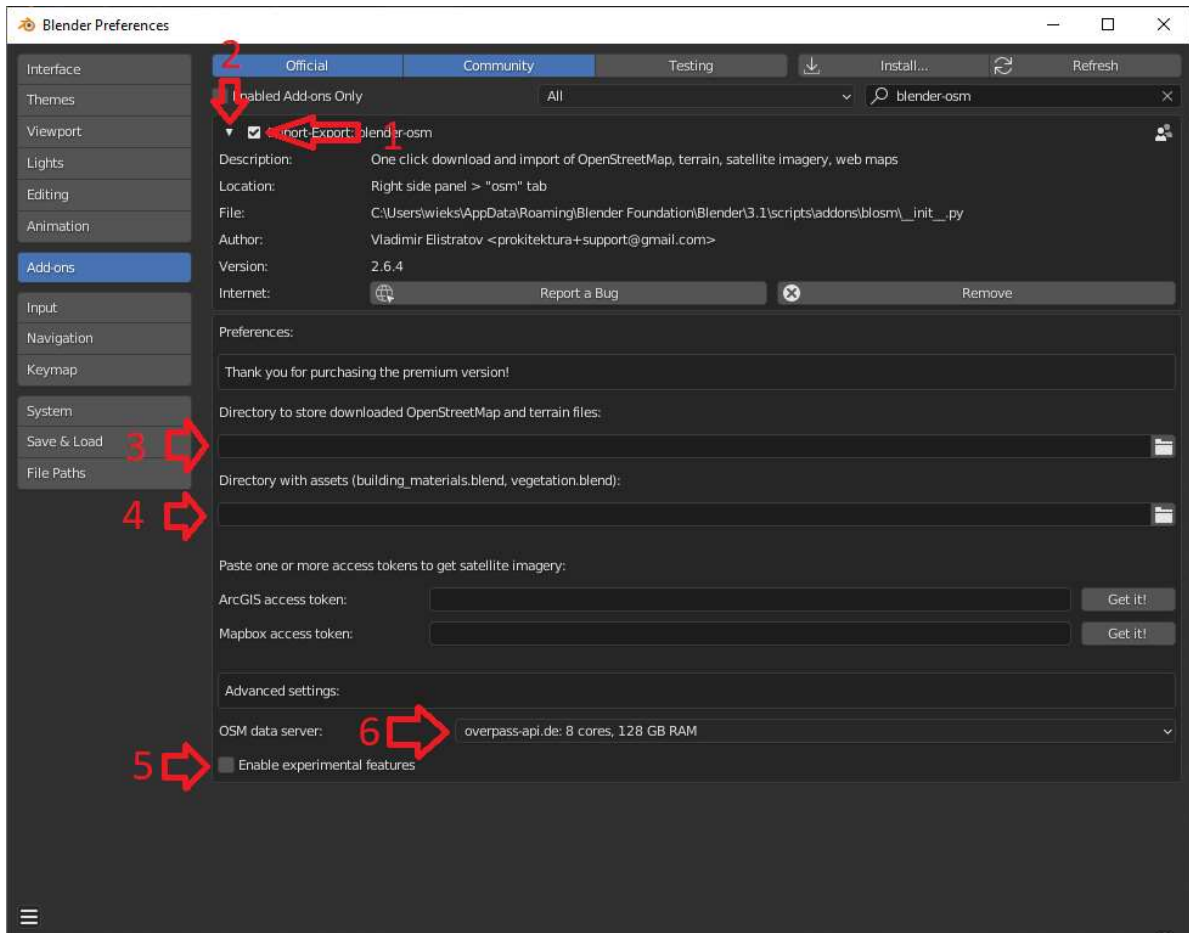
Go to Edit - Preferences

Go to Add-ons and click on the install button

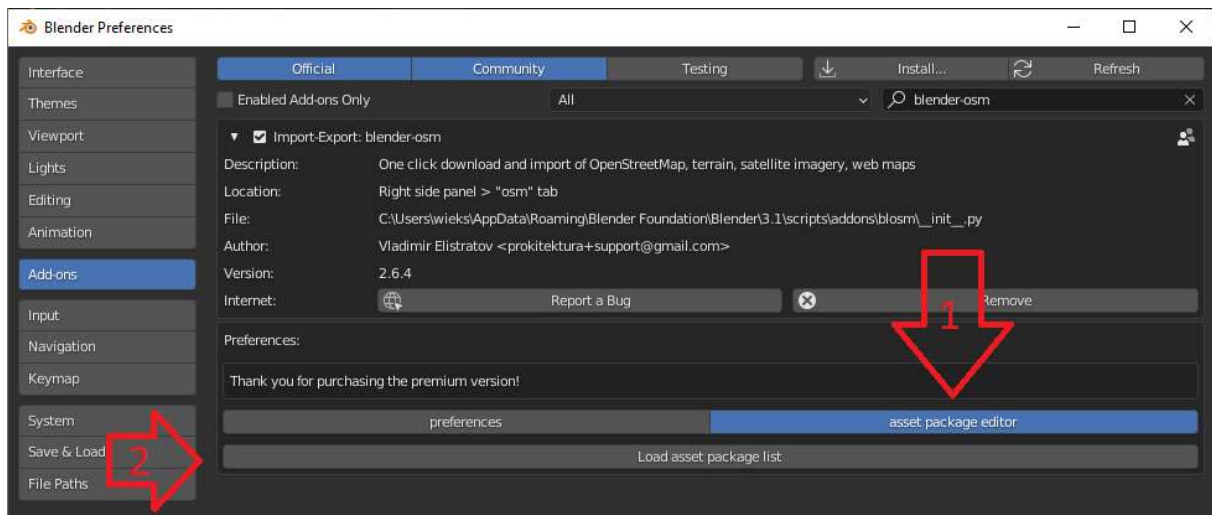


Via the file browser navigate to the Condor_OSM_Exporter folder. There is a file called “blosm.zip”. This is a modified version of the premium Blender-OSM exporter. It is redistributed under GPL license. If you want you can purchase the add-on via this link to support the original developer of the code: <https://prochitecture.gumroad.com/l/blosm>. Click on “blosm.zip” to install the addon.

Note that this modified version uses a different projection to the original Blender-OSM exporter. The Plug-in as provided by the Condor-Team is therefore not compatible with other applications of Blender-OSM.



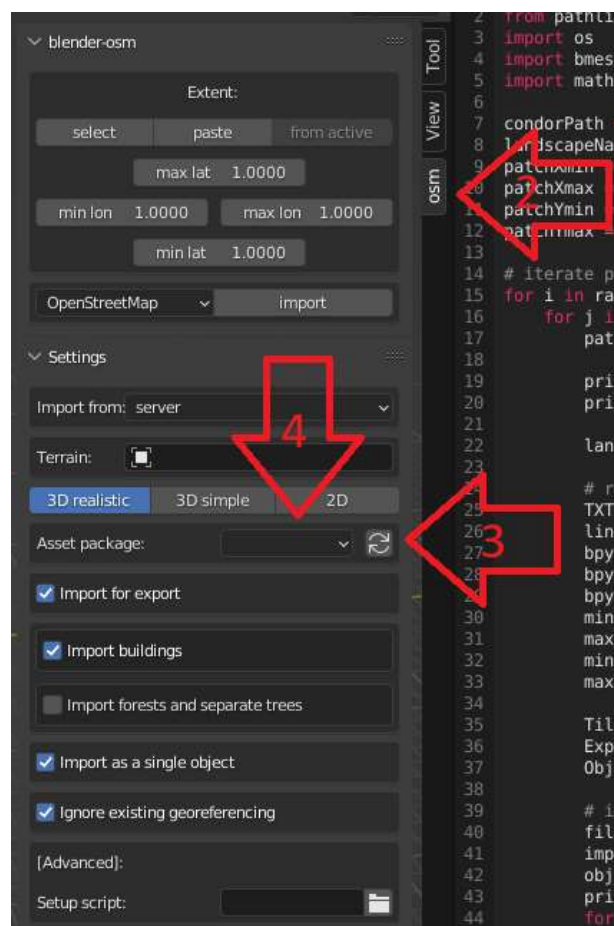
1. Enable the add-on by ticking the box.
2. Click on the little white down arrow to expand the settings panel.
3. Set a directory to temporary store the downloaded data. This can be any folder you like.
4. Navigate to Condor_OSM_Exporter folder and set the path to the “assets” folder here
5. Enable experimental features
6. Change the OSM data server to VK Maps (the standard overpass server has limited downloads)



1. Click on Asset Package Editor
2. Load asset package list

The Condor team has provided a standard asset package for Condor 3 that was used in creating the Slovenia 3 landscape. You can create your own asset packages following the instructions in this video: https://www.youtube.com/watch?v=uWIMYs_MQOI

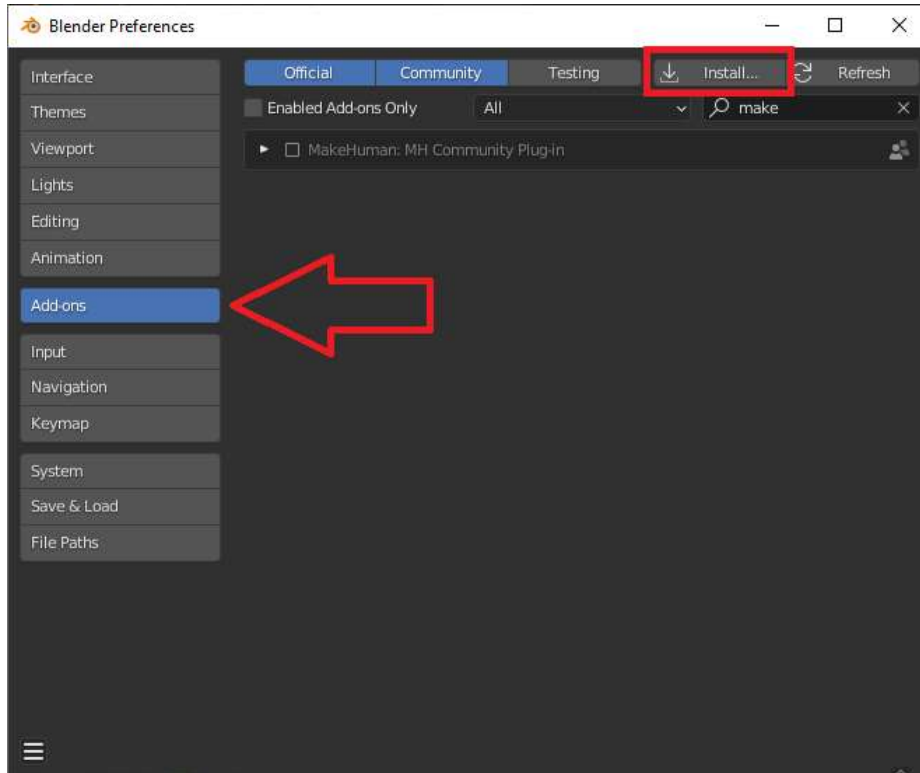
It is even possible to use multiple asset packages. For example when your scenery covers multiple countries and the building style differs between them.



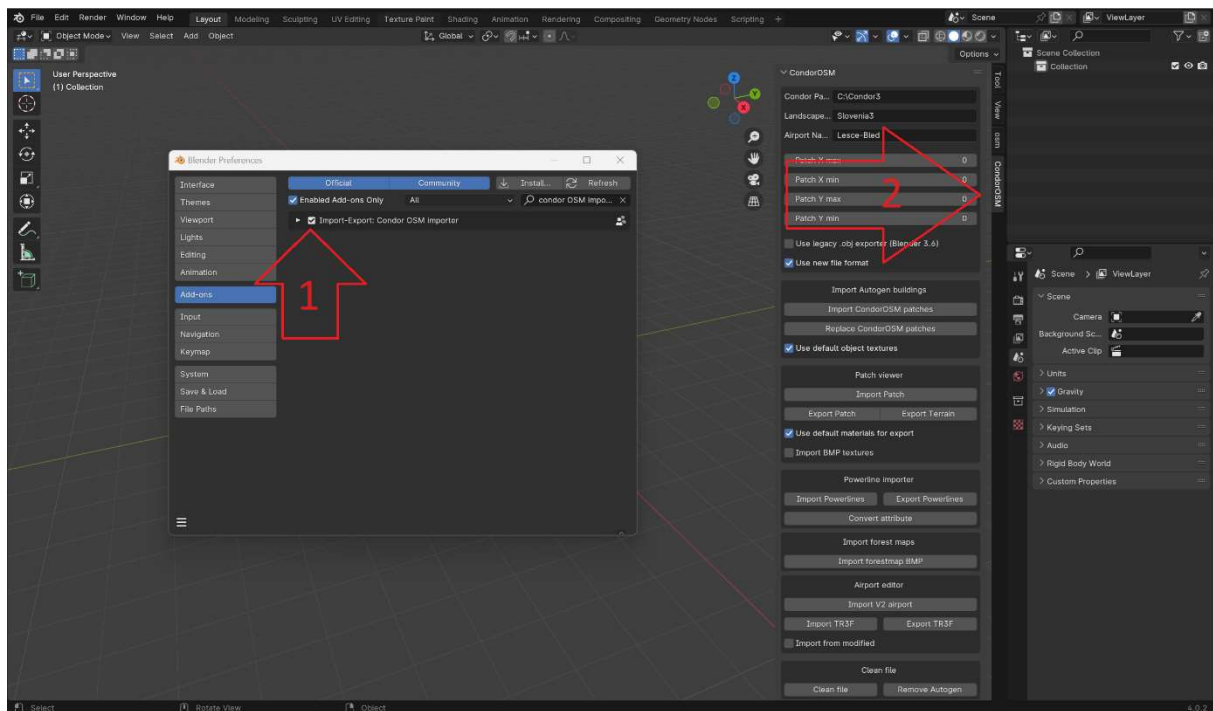
1. Close the preferences window and press the N key. This should open the side menu
2. Click on the OSM tab
3. Click the refresh arrows
4. Select CondorV3 from the list

4.2 INSTALLING THE CONDOROSM ADD-ON

Same as before go to the preferences:



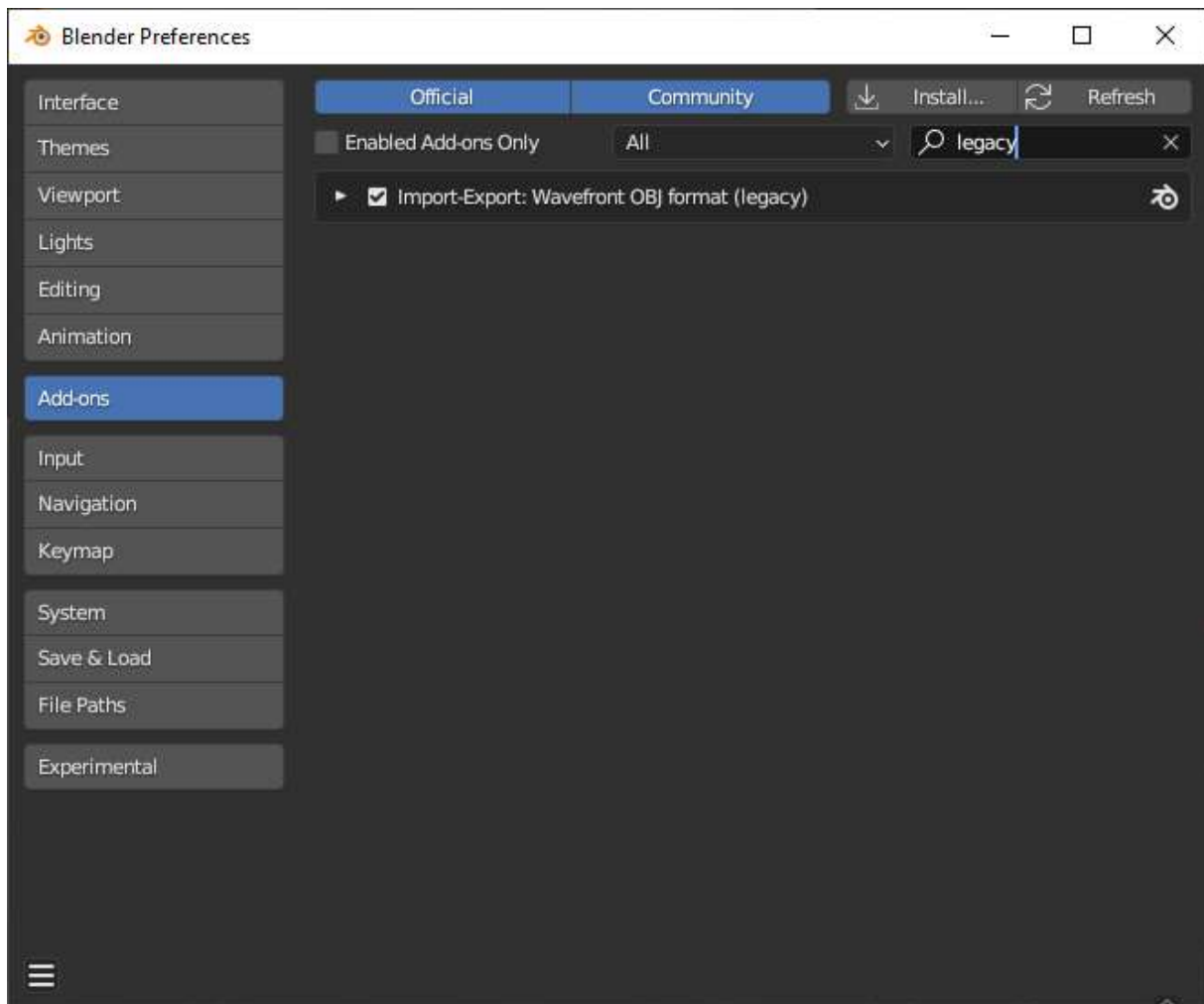
Browse to the folder where you have stored the Condor OSM exporter and select CondorOSMImporter.py



1. Enable the plugin in the list
2. You should now see the CondorOSM menu item appear

4.3 ENABLE WAVEFRONT OBJECT EXPORTER

Condor OSM will also work with Blender 3.6.2. You have to enable the Import-Export: Wavefront OBJ format (legacy) plugin. This should come pre-installed in Blender. You just need to tick the box. Find it by typing in "legacy" in the searchbox.



Blender 3.6.2 will only work with the legacy exporter. For blender 4.0.x use the custom exporter build into the plugin.

4.4 COMPATIBILITY

In the CondorOSM menu there is a Tickbox “use new file format” for compatibility with old Condor2 Sceneries. Condor 2 sceneries use a 4 digit numbering scheme for patches. Condor 3 uses a 6 digit numbering scheme. When this box is ticked CondorOSM assumes the 6 digit numbering. If for any reason you need CondorOSM to use the 4 digit format, untick this box. **Marc Till has written a utility that converts any 4 digit Condor2 scenery to the 6 digit format (Included in the toolkit???)**.

If you want to use Blender 3.6 LTS with the legacy .obj exporter, tick the box “Use legacy .obj exporter”.

5 USING THE ADD-ON

This chapter explains the basic use of CondorOSM. This process is fully automated.

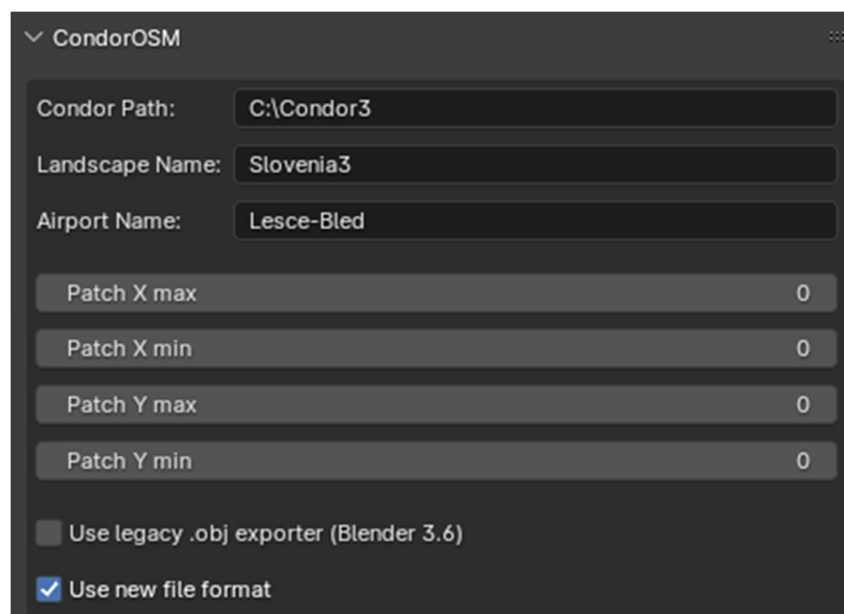
5.1 SETTING UP WHICH PATCHES TO IMPORT

You can import the whole scenery at once. However this can take several hours depending on the size of the scenery and your internet connection. It is recommended to first try a small area around an airport to see if the import works correctly and you are happy with the textures.

Use the blenderfile provided in the package called:

“Condor OSM Exporter.blend”

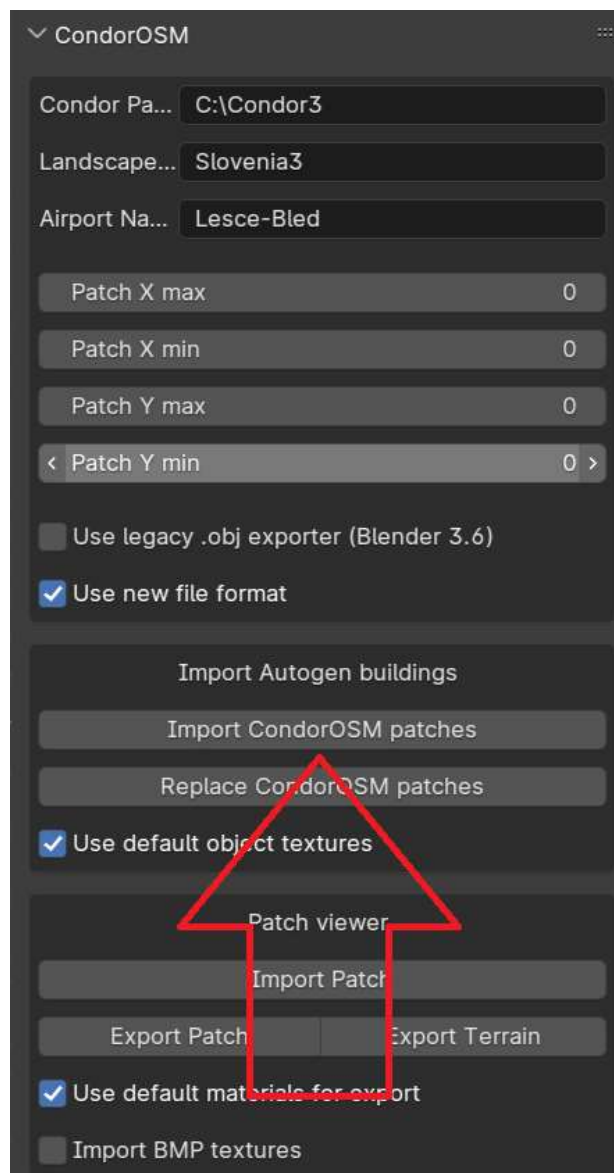
This file has been specifically set up with all the correct settings to start importing patches. When you are only importing the autogen, without powerlines, no specific Blender knowledge is needed. The whole process is automated.



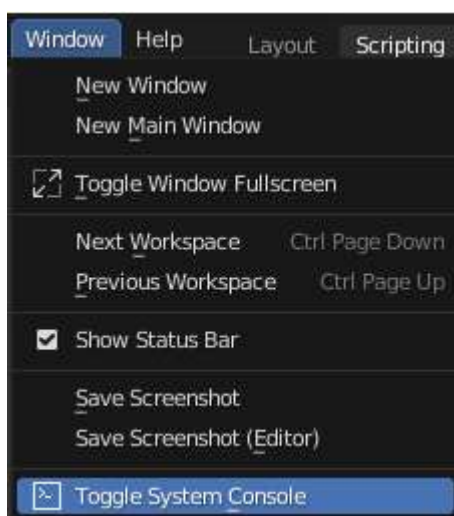
In the top two rows you have to set the path to the main Condor 3 folder and your landscape name (exact name of the main scenery folder). You can then specify which patches you would like to download. Start with about 4 patches around an airport in your scenery so you can do a quick test.

If you want to import a single patch set Max and Min values to be equal.

To start the download process go to the CondorOSM menu:



You can monitor the progress by opening the system console

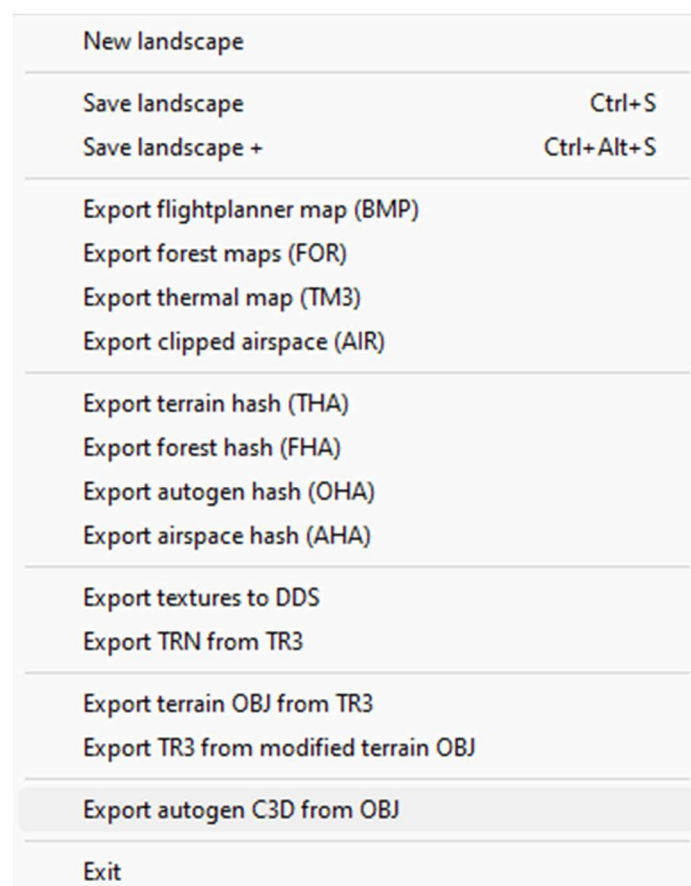


In your working/Autogen folder of your landscape you should see .obj and .mtl files appearing as well as the textures from your asset library. Once the process is finished you can look at the resulting buildings with ObjectEditor.exe provided with the Scenery toolkit.

The “use default materials for export” option uses the build in CondorV3 materials used in Slovenia3. If you have a custom texture set, untick this box. For more information on custom texture sets, see the BlenderOSM manual.

5.2 IMPORTING OBJECTS TO CONDOR

The resulting objects are specifically named so that Condor knows the exact place they have to be placed in the landscape. There is no need to manually place these objects via the LandscapeEditor. In the LandscapeEditor click “Export autogen C3D from OBJ”. This will convert all .OBJ files in the Working/Autogen folder to C3D files.



The objects are exported to the Working/Autogen folder. In this folder there is a set of textures. **Do not use these textures in Condor!** They are placeholders and are strangely coloured. With the package there is a set of textures provided in the folder “Textures for Condor”. You can use these or create your own.

Place the C3D files in “landscapename”/Autogen and the textures from “Textures for Condor” in “landscapename”/Autogen/Textures

6 ADDING POWERLINES

Once you have imported all the OSM objects as described above you can optionally add powerlines to your scenery. This process is less automated and requires manual work. This chapter assumes some knowledge of Blender.

6.1 IMPORTING POWERLINE LOCATIONS

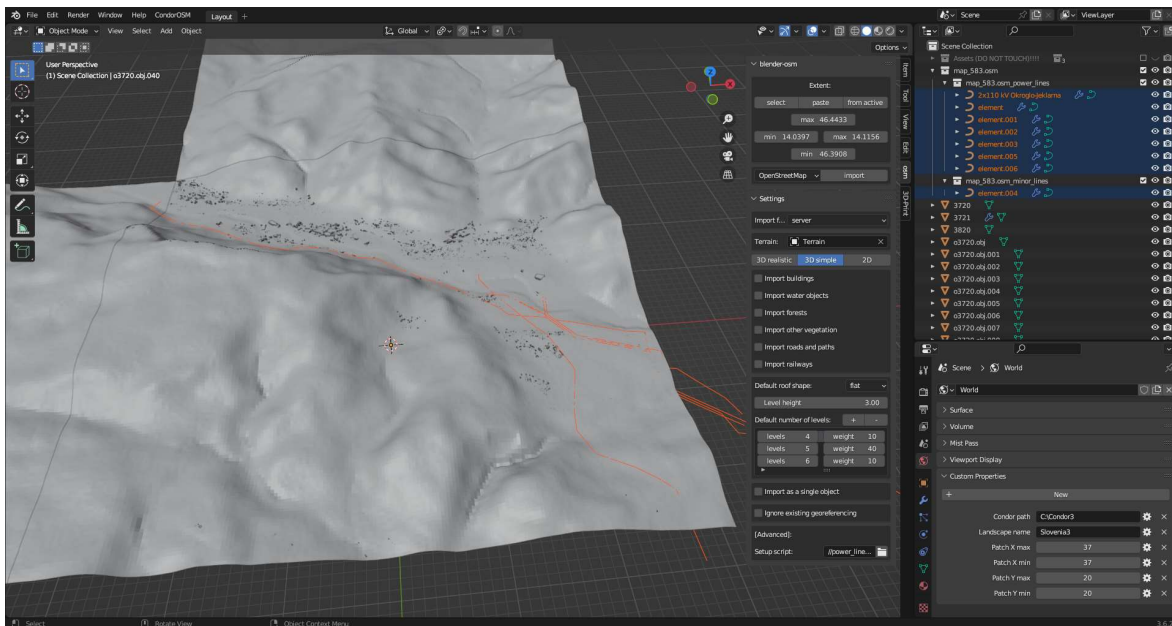
Make sure you use the Blenderfile included with the Plugin (**OSM Condor Exporter.blend**). This file contains all the assets and node trees to create the powerlines. Select the patch you want to edit via the World menu. Only the max values are used. The minimum values are ignored.



Note: the autogen objects corresponding to the patch need to have been imported before you can import the powerlines!

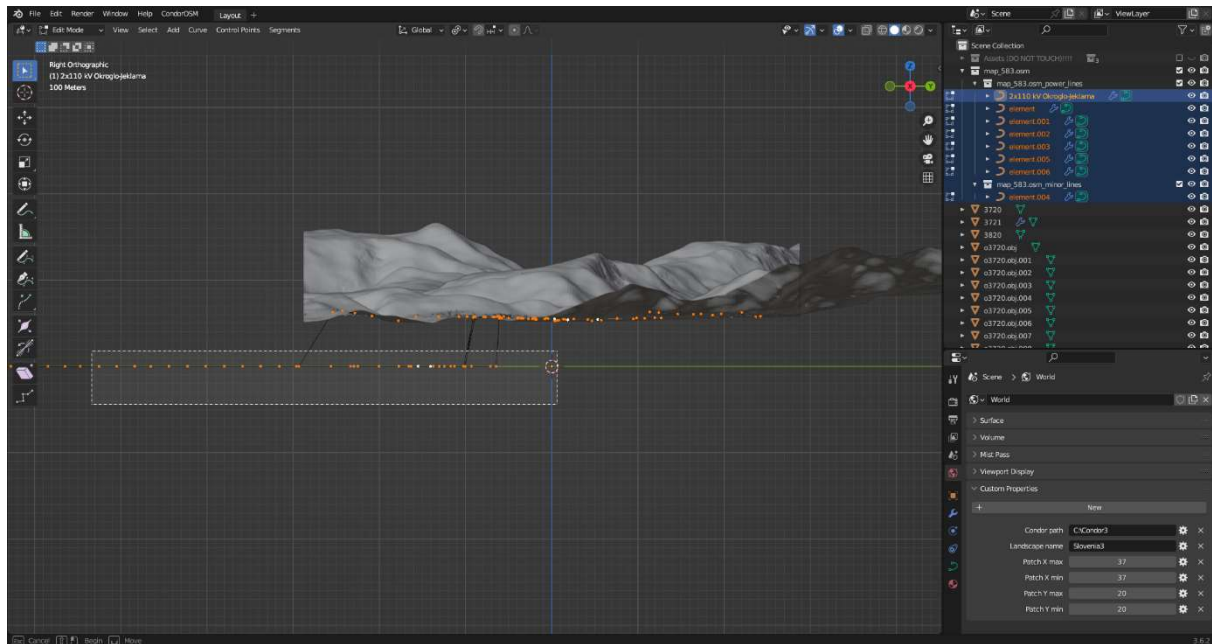
If there is a patch without powerlines, there will be a message in the system console to tell you that no powerlines were found in the current patch.

If the code finds powerlines in the patch you should see something like the following:

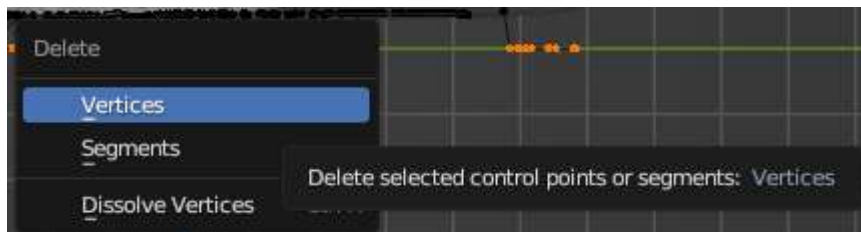


In this patch there are 3 different types of powerlines. The lines with a name are usually major high power lines. The lines named “element” are smaller regional lines. Under the header Minor_Lines are the local powerlines. These distinctions depend on the quality of data in the OSM database. Some research may be required to get the correct type of powerline.

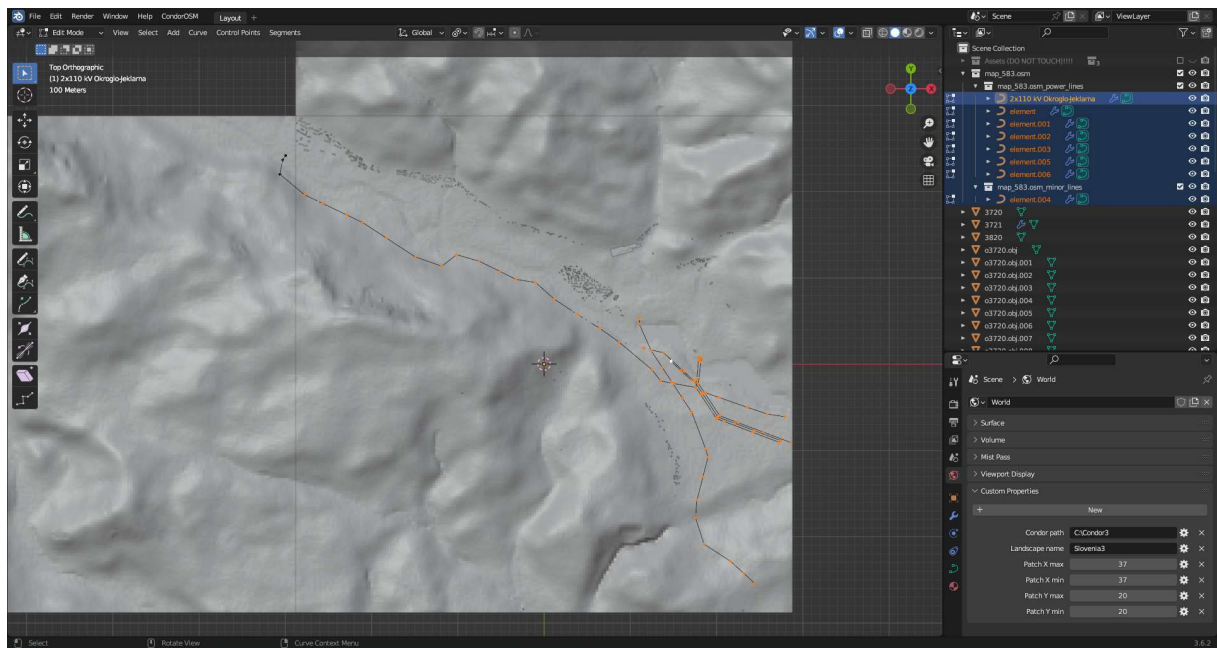
As you can see the powerlines sometimes fall off the edge of the tiles. This is because the line is longer than the patches are wide. We don't need the points that fall off the edges. Easiest way to get rid of them is by pressing NUM-3 or NUM-1 to look from the side.



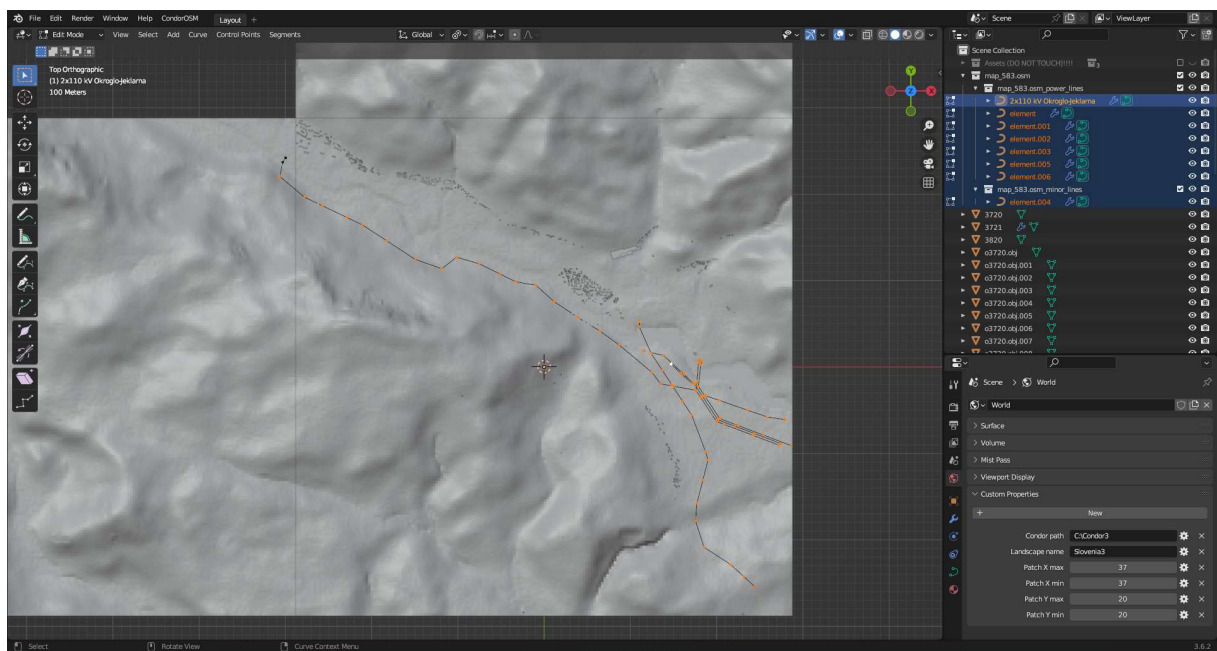
You can box select all the vertices that are on $Z=0$ in one go and delete them by pressing delete. This will get rid of all vertices that are not on the tiles.

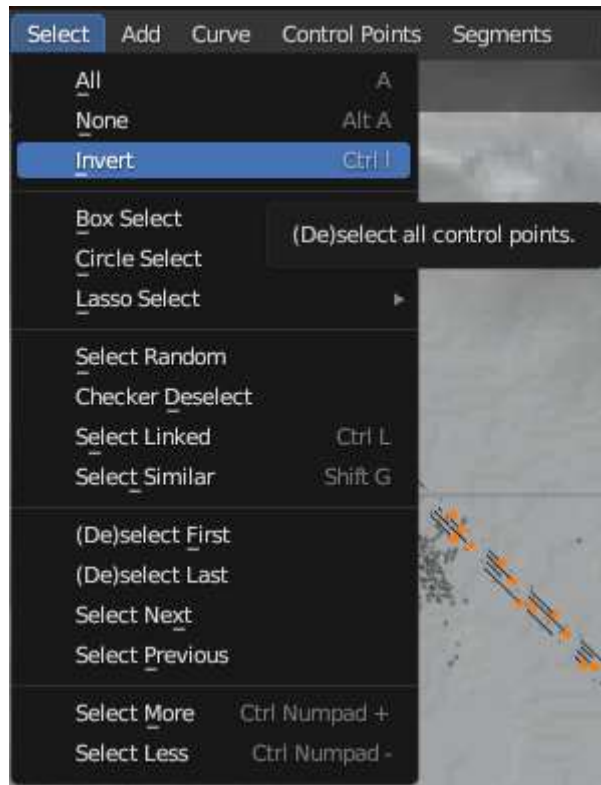


Now we need to make sure the powerlines continue onto the next patch. That is the reason for the two additional tiles that have been imported. We need the first pylon that overlaps onto the next tile for each line. This is to make sure that the cables continue over the patch borders. Fastest way to do this is to box select around the edges of the main tile:

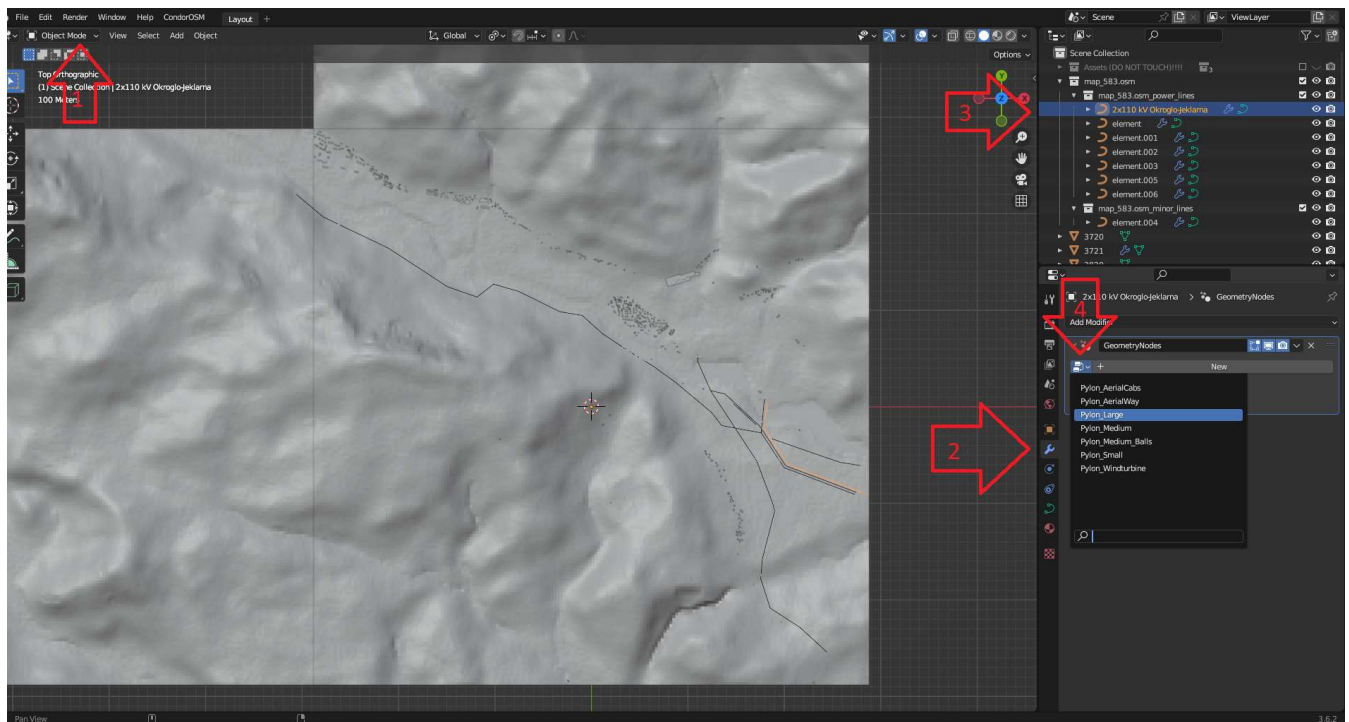


You then press CTRL – NUM + to increase the selection by 1 vertex.





Go to select and invert the selection (hotkey CTRL – I). Then delete all unnessesary vertices.

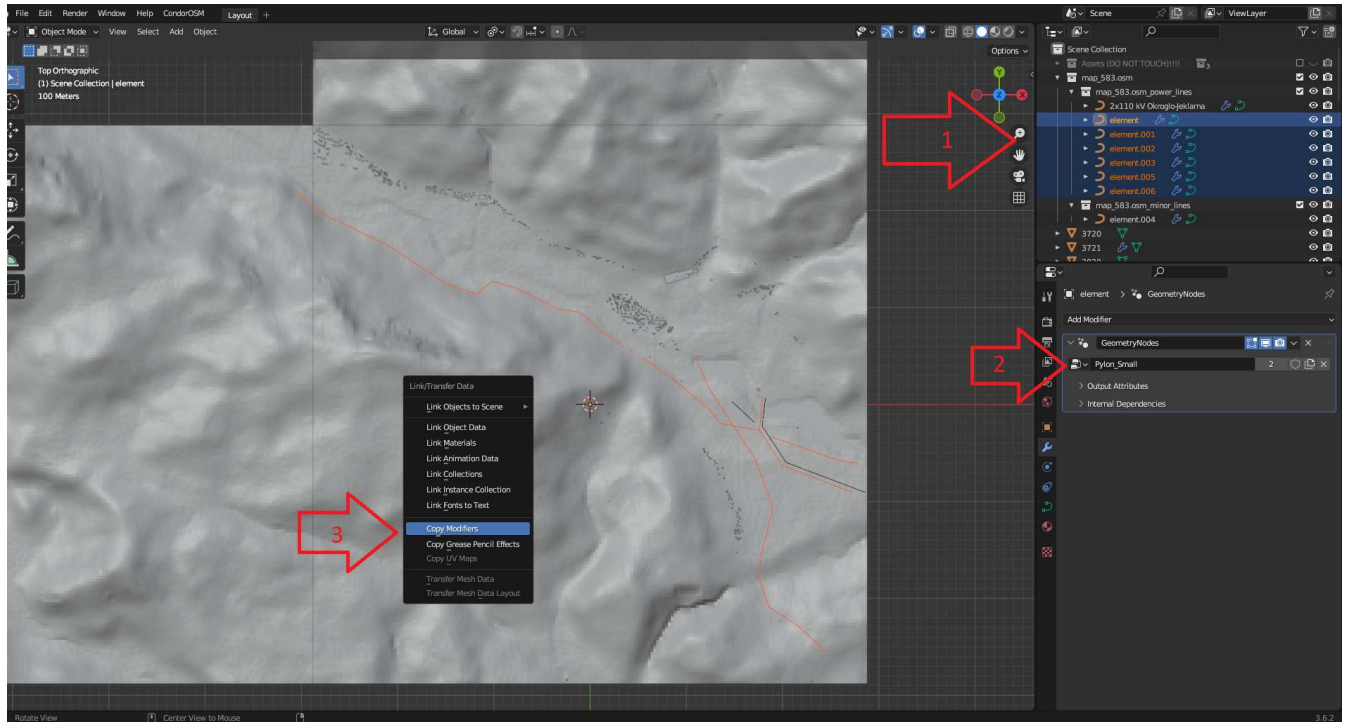


1. Exit edit mode by pressing the TAB key
2. Select the line you want to set the linetype for
3. Click the wrench symbol to go the the modifier tab
4. From the dropdown menu select the desired powerline type

As described above for Slovenia 3:

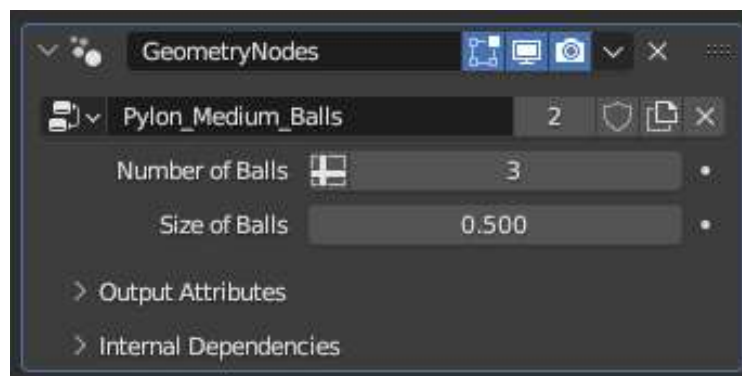
- Major lines with names use Pylon_Large
- Unnamed lines (“element”) use Pylon_Medium
- Minor lines (under the Minor_lines group) use Pylon_Small

If there are multiple powerlines that use the same pylon type you can quickly set the pylon type for all of them by using the copy modifier function.



1. Select all object you want to set the same powerline pylon type for.
2. Set the pylon type as described above.
3. Press CTRL – L and select Copy Modifiers from the menu

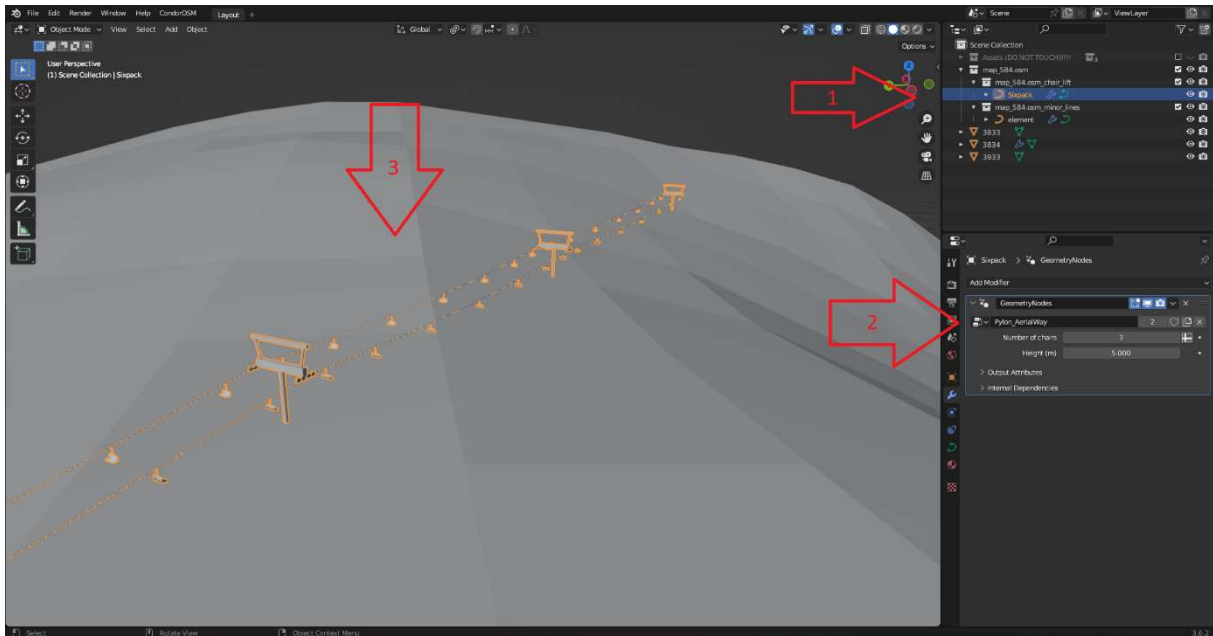
For powerlines close to airports there is an option to add aviation warning balls to the line. When selecting Pylon_Medium_Balls it will give you an option to set the size and number of balls on the top line of the powerlines.



6.2 IMPORT OF SKILIFTS

Two types of skilifts are also imported:

- Gondola type with enclosed cabs (AerialCabs)
- Skilift with chairs (AerialWay)



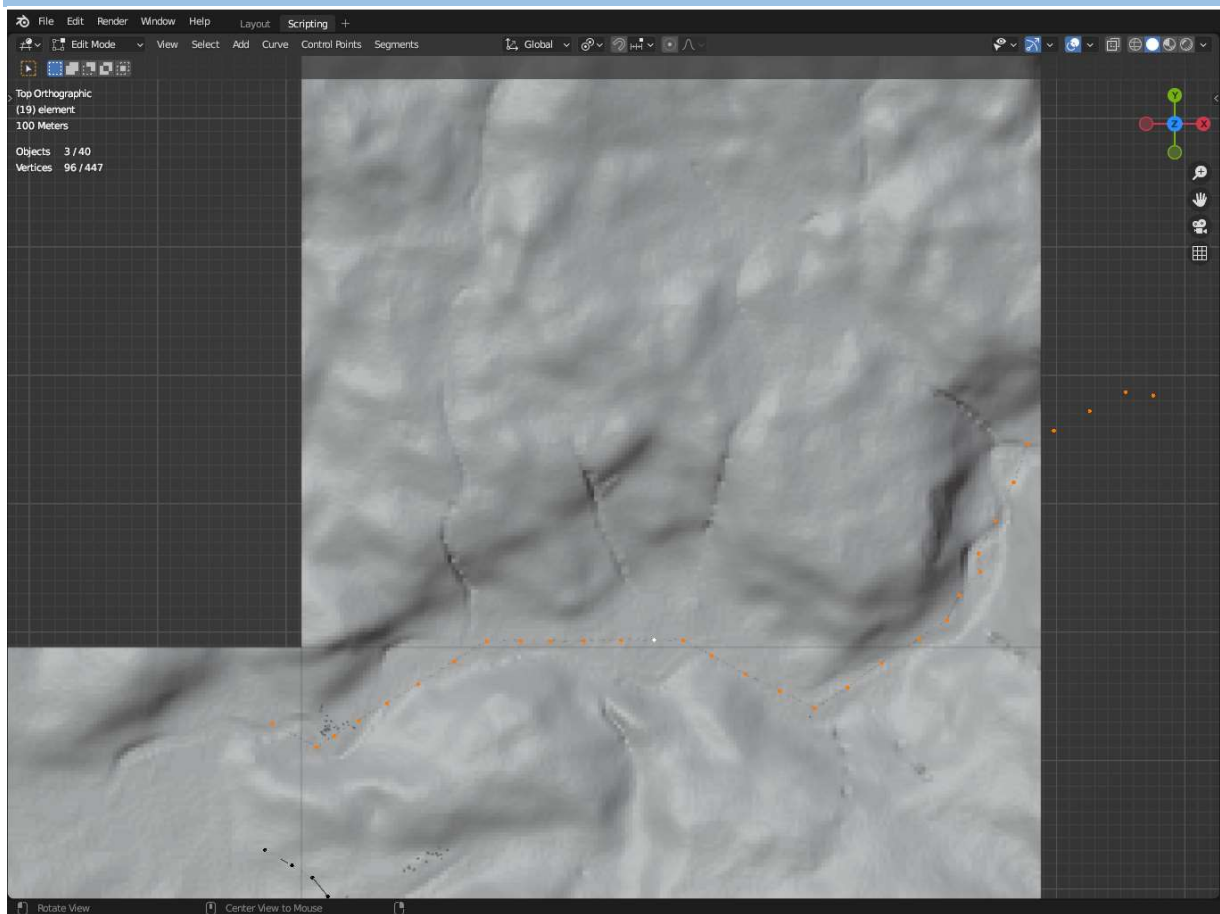
1. Select the Chairlift or Gondola line you want to add the objects to
2. Select Pylon_AerialCabs or Pylon_AerialWay and select the number of chairs and height of the pylons
3. Check in the 3D view if the line looks correct

Rest of the process is the same as for powerlines

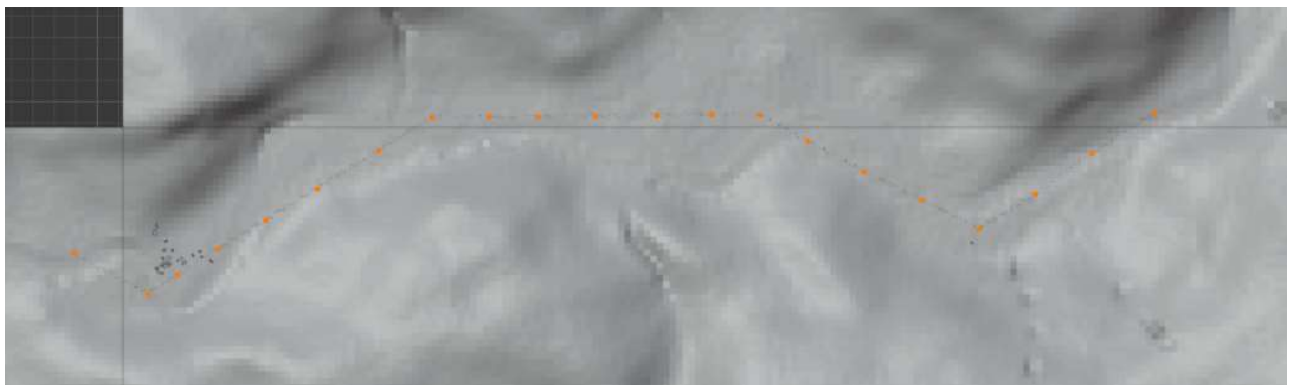
6.3 IMPORT OF WINDTURBINE LOCATIONS

The code currently imports the location of all Power Generators. This includes Wind Turbines, but also solar panels and other types of generators. There is a model of a windturbine included in the Blender file you can use. But if Wind Turbine locations are imported you have to manually check if it is a windturbine and not some other type of generator.

6.4 SOME CONSIDERATIONS



It is not always possible to just delete the vertices that fall off the main patch. In the example above the line crosses the border multiple times. If you just delete the vertices in between the code will make some very long cables between the poles. In the above case you can trim the ends of the line, but you must leave the middle bit as demonstrated below:

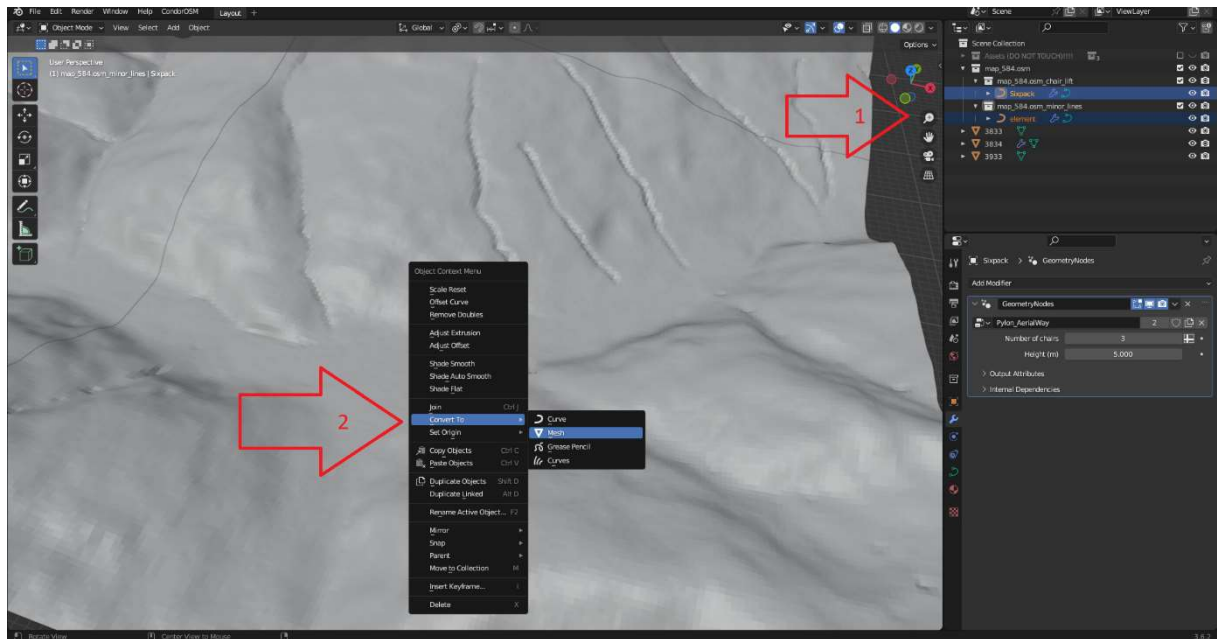


When importing the patch above, you can delete this part of the line on that patch.

Same goes for Skilifts that cross patch borders. It is best to make them as one object instead of cutting them in half if they cross patch borders. You can then delete the whole line on the neighbouring patch when importing that one.

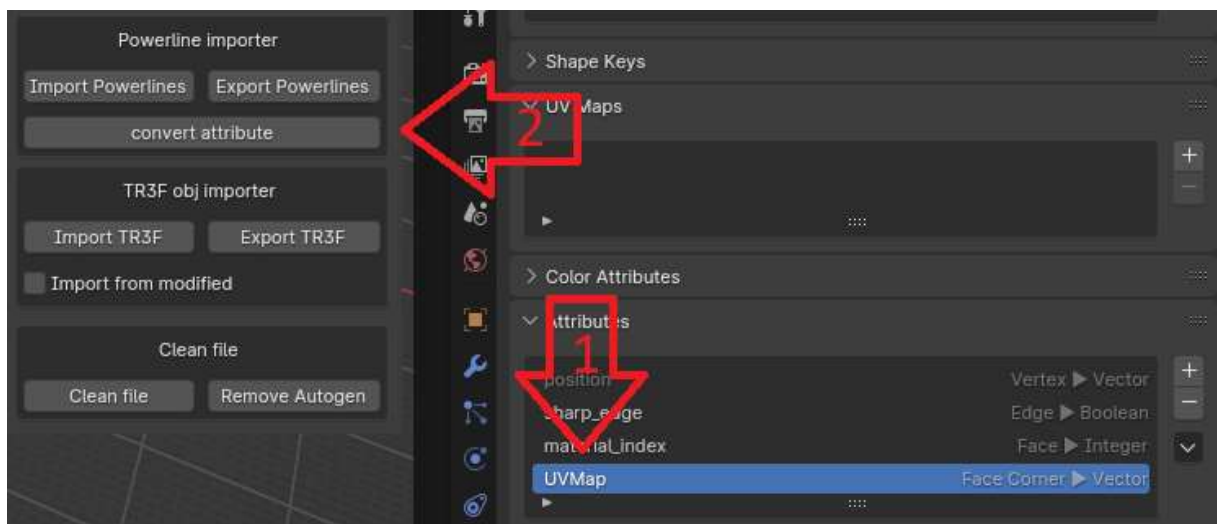
6.5 EXPORTING THE POWERLINES

Once you have set all the modifiers for the various objects we have to convert them to a mesh.



1. Make sure all objects with modifiers are selected (wrench symbol)
2. Right click and from the menu select Convert To -> Mesh

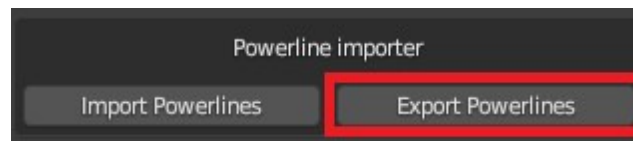
Unfortunately this process saves the UVmap of the resulting object to the Object Attributes instead of the UVmap. So we will have to manually convert it to a UVmap ourselves.



1. Click on the UVMap in the attributes
2. Click the Convert attribute button

This should create a UVmap in the UVmap box. You need to do this for every powerline object in the list!

Once you have completed all the steps in the workflow you are ready to export the file.



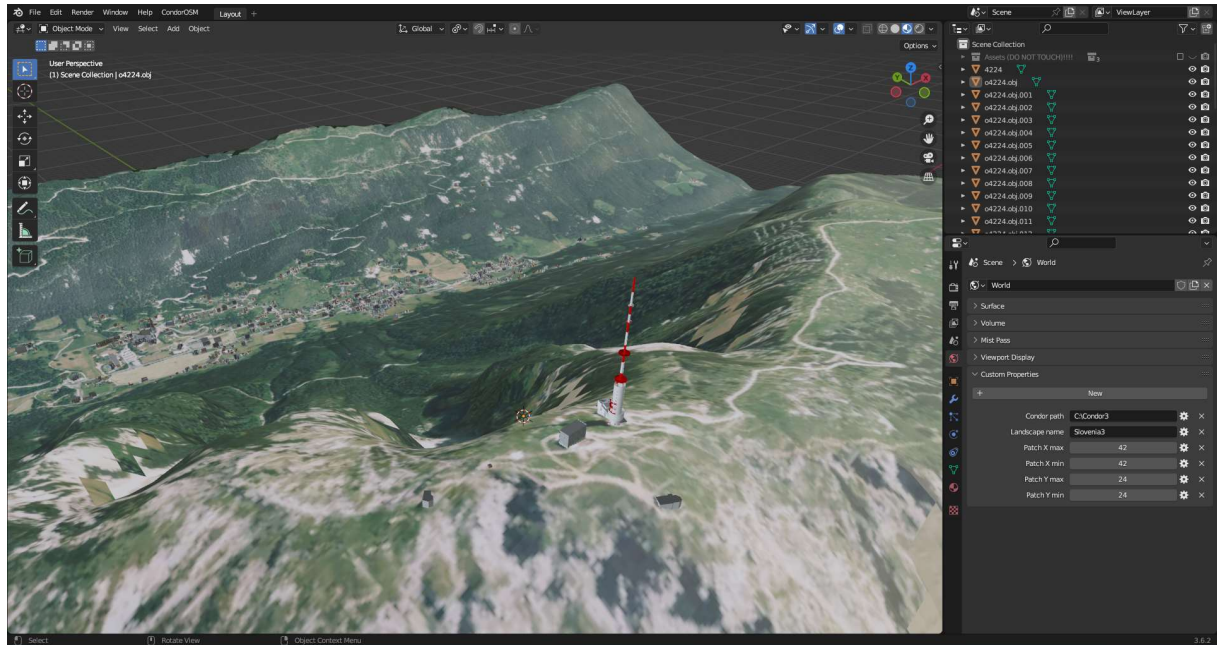
The script automatically deletes all objects after the export and cleans the blender file ready for the next import.

Once you are finished with all tiles run the Export Autogen C3D from OBJ from the landscape editor as described above.

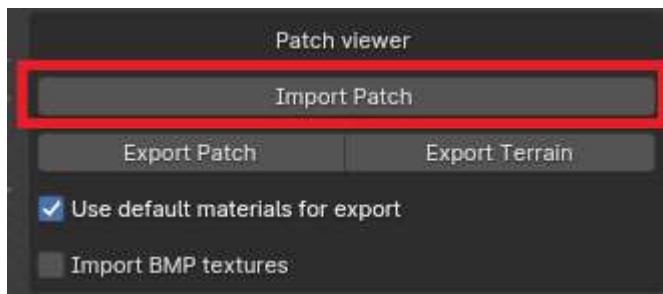
7 PATCHVIEWER

You can view any patch previously made at any time with the patchviewer. This tool is very useful if you want to replace or remove any autogen buildings for a patch. In the example below the generic mast on the ridge was replaced by a custom 3D object. This object can then be exported via the PatchViewer exporter. This automatically saves it in the right place to be imported into Condor.

The texture for the terrain will automatically be UV mapped to it.



To open a file:



1. Go to the patchviewer menu. This loads the patch number selected above
2. Turn on viewport shading to see the textures

When exporting the patch you can choose to use the default material values used when using the export autogen. If you want to add custom material properties to an object in Blender you can disable the checkbox "Use default materials for export". This allows blender to export the custom material properties you have set for that object. This works in both Blender 4.0.0 and 3.6.2. If you leave this box ticked, every object will be overwritten with the default material properties.

The "import BMP textures" option allows you to import the BMP textures for the terrain from the working folder instead of the DDS textures from the Textures folder.

There is also an option to export terrain you have modified. Note that the terrain height points will always be saved as an integer. For precise control of the terrain height use the TR3F editor described below.

8 AIRPORT EDITOR

This part of the plugin contains tools to help with airport conversion and creation.

8.1 IMPORT V2 AIRPORT

The airport editor is a special tool to convert flat V2 airports to V3 airports with grass. The V3 airports with grass require a 30 meter grid for the grass to show up correctly. This tool can import a V2 airport that has been converted with the landscape editor from .C3D to .OBJ. To use it, set the airport name in the “airport name” box at the top of the CondorOSM window. This must be the exact airport name. It will look for the .OBJ file in the “LandscapeName/Airports” folder. It will then import the file and convert the grass area to a 30 meter grid. It will also rename the grass to grass3D which is required for the grass to show up correctly.

You will have to manually UV map the grass surface to fit on the original texture. Adjust the transparency of the texture if you want to control the grass height. Refer to the Airport guide for more information on how to make V3 style airports.

8.2 TR3F-IMPORTER

Within the plugin there is also the option to import TR3F files. This is to help you with airport creation. It is important to create an .obj file in the TR3F format with the landscape editor first. How you can do that is described in the V3 airport guide. The TR3F importer can also be used to modify specific patches to fit large autogen objects.

Workflow for leveling terrain for autogen:

1. Import a patch with TR3F importer
2. Level the terrain for the autogen
3. Place the autogen buildings
4. Export the TR3F with the export TR3F button
5. Export the Autogen with the patchviewer export button
6. Convert the terrain to TR3F with the landscape editor
7. Convert the autogen to c3d with the landscape editor.

The “import from modified” checkbox allows you to re-import a previously modified TR3F patch. If this is left blank the importer will always look in the 22.5m folder for the patch. If the box is ticked it will import from the 22.5m/modified folder.

9 CLEAN FILE

When you are done with a specific patch you can use the “clean file” button to delete all the objects and remove any materials still present in the file. Normally using any of the export buttons also clean the file after the export operation is done. However, when you have manually deleted objects/terrain use this button to completely clean the file. This prevents objects from having problems with the texturing.

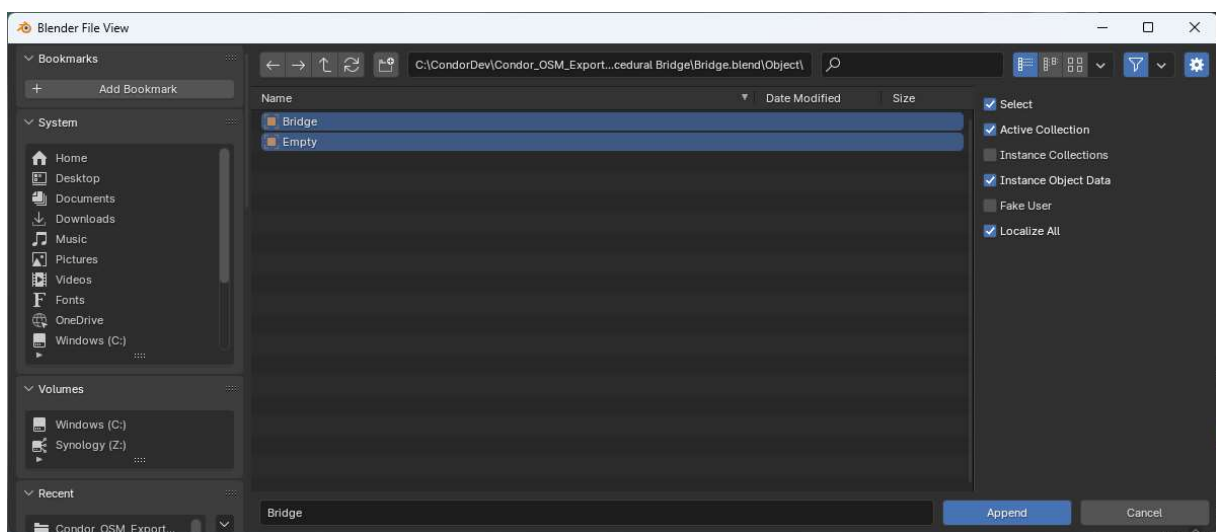
The remove autogen button can be used to erase all the automatically generated autogen on a specific patch. This will however leave any custom buildings you may have placed on the patch.

10 PROCEDURAL BRIDGES

In the zipfile there is a folder named “Procedural Bridge”. This contains a Blender file and textures to create a procedural generic concrete road bridge. If additional bridge styles are needed, ask on the Condor forum and the Condor team can assist you in creating additional bridge objects.

10.1 APPEND THE BLENDFILE

Open the patch you want to insert a bridge in with the patchviewer. You need to append the bridge asset. Go to the File – Append menu and browse to the Bridge.blend file. From the Object folder import “Bridge” and “Empty” by selecting them and clicking the append button:

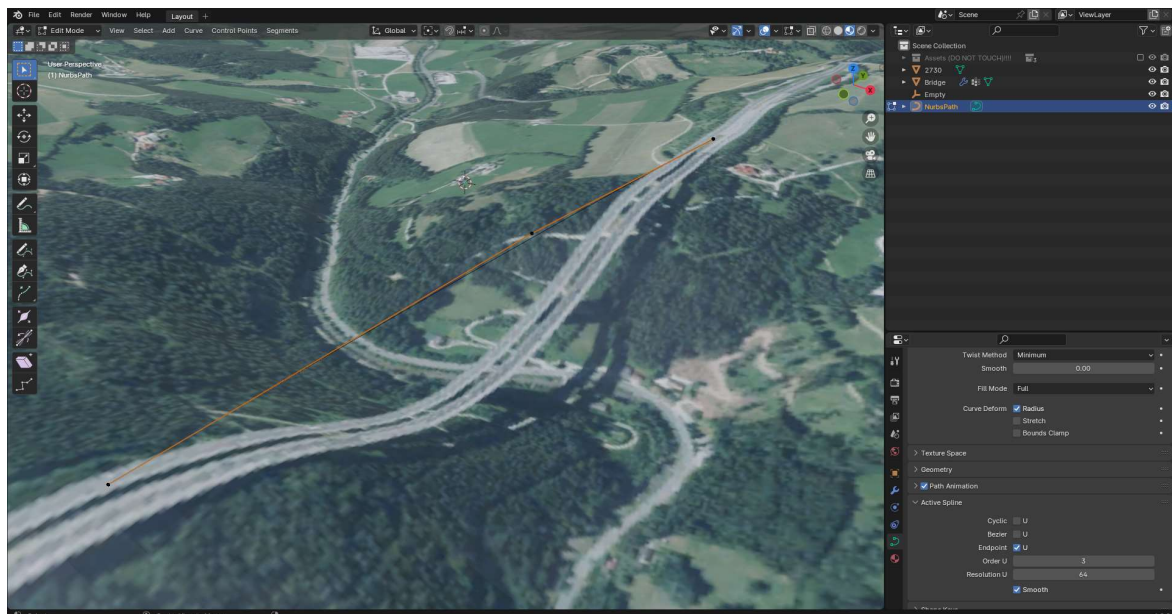


10.2 CREATE A PATH

Add a NurbsPath to the file. This will become the guide to create the bridge deck.

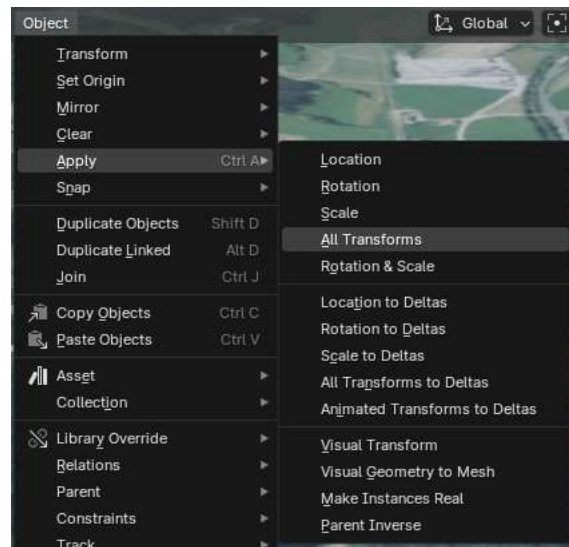


Edit the path so it follows the middle of where the bridge deck should be located:



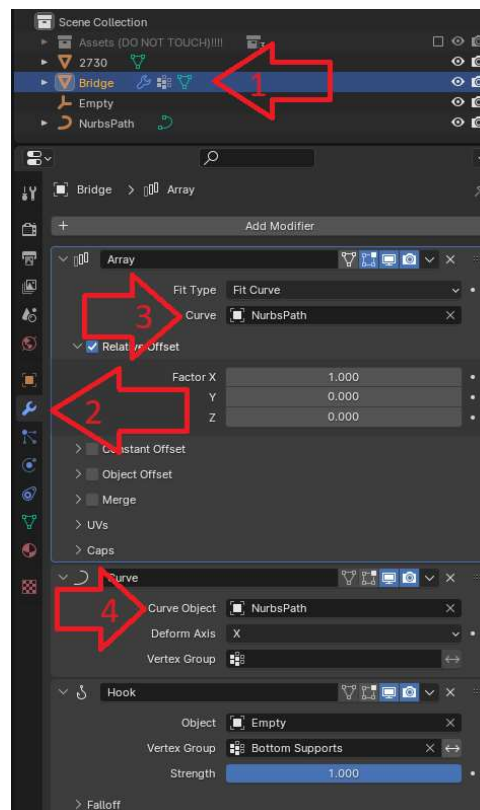
10.3 ASSIGN THE MODIFIERS

Once you have finished creating the path, make sure you apply all transforms by selecting the path and going to the below menu option:

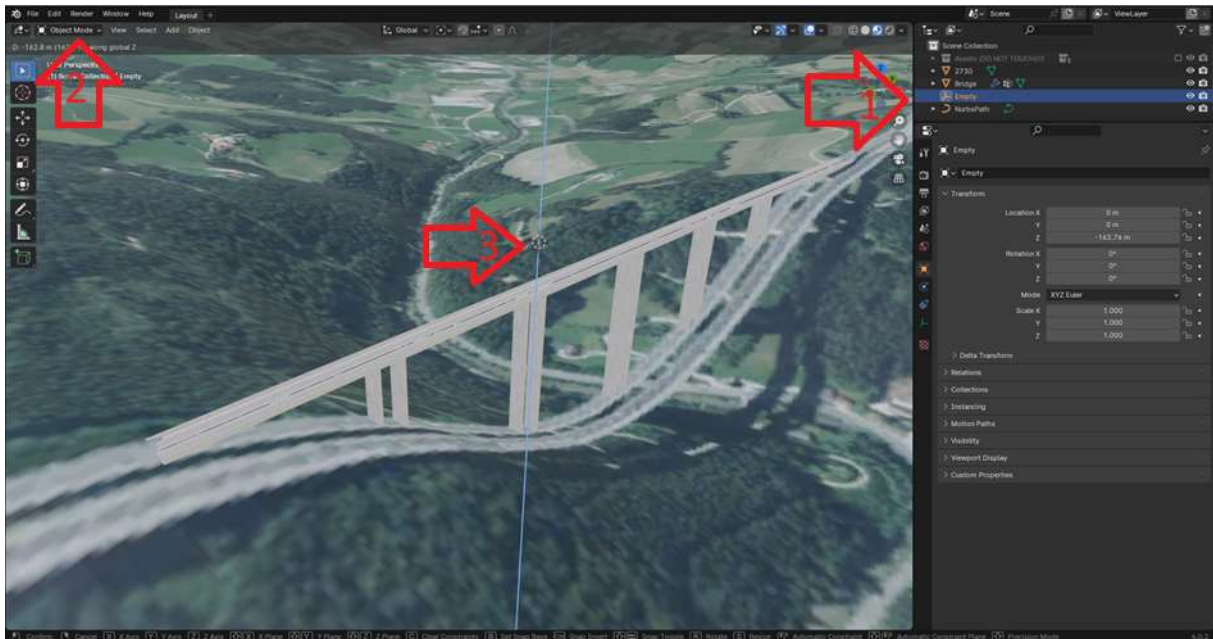


Now we can assign the modifiers to create the actual geometry of the bridge.

1. Select the bridge object
2. Go to the modifier menu
3. Add the curve you just created to the array modifier in the menu
4. Do the same in the curve menu

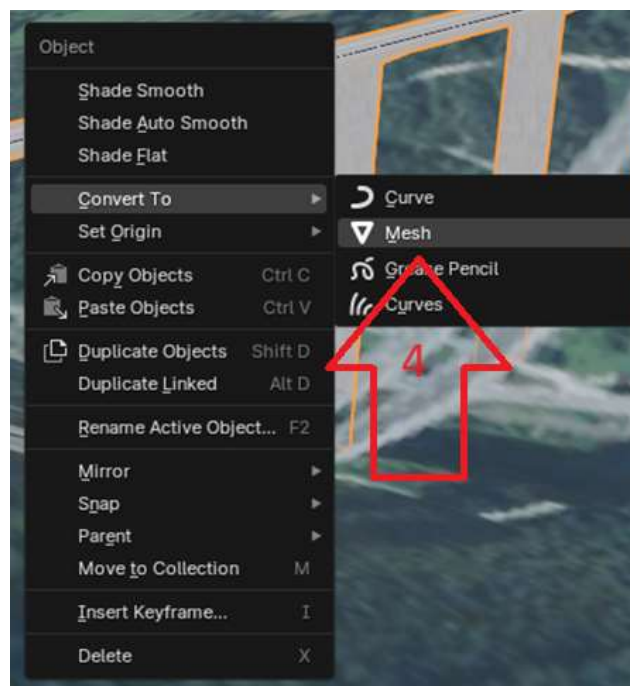


You should now see the bridge deck appear along the path you have created. You can now adjust the curve so the bridge lines up with the texture of the landscape if needed.



By selecting the “Empty” object you can manipulate the height of the bridge pylons.

1. Select the empty object.
2. Make sure you are in object mode.
3. Use “G” and “Z” to move the “Empty” object down. This extends the pylons from the bridge deck.
4. Once finished, select the bridge and convert the object to mesh



Once you are finished, you can append another bridge object to create multiple bridges in a patch. After you have finished, use the Patchviewer export to add the bridge to the autogen.