Shipwright

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Nov 14, 2021

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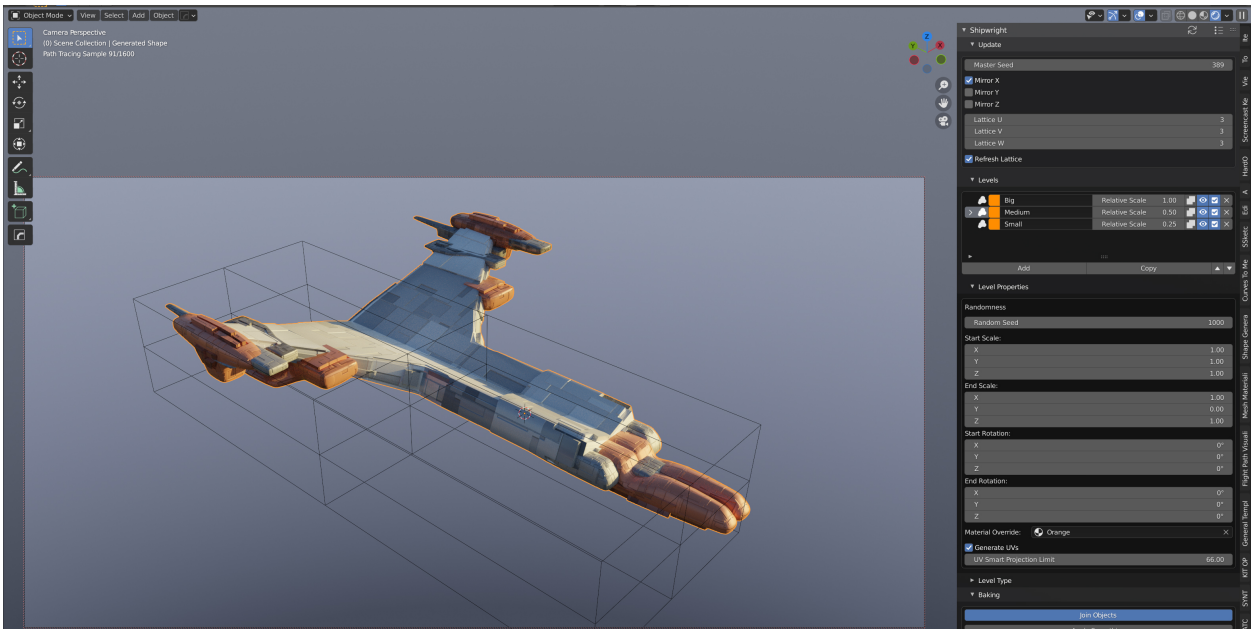


Automatically create sci fi objects with : a add-on that combines the and the add-ons into one customisable set up.

CHAPTER

ONE

FEATURES

- Create a wide range of objects just from a single number.
- Save set ups you like with the Presets feature.
- Dynamically change parameters and the objects will automatically update.
- Edit the objects using Blender's existing toolset.
- Customize the materials to suit your needs.
- Customize the shape with an editable lattice cage created around the object.
- All driven from one Panel based interface.
- Combine objects you already have with the new Levels System - not just generated ones.
- Export your object as a joined up Mesh with Smoothing and Baking options.
- Render out multiple variations with an 'Iterator' mode (inspired by Chipp's idea for)
- New Simpler installation - now no need for animation nodes.

1.1 Installation

1.1.1 Before you start

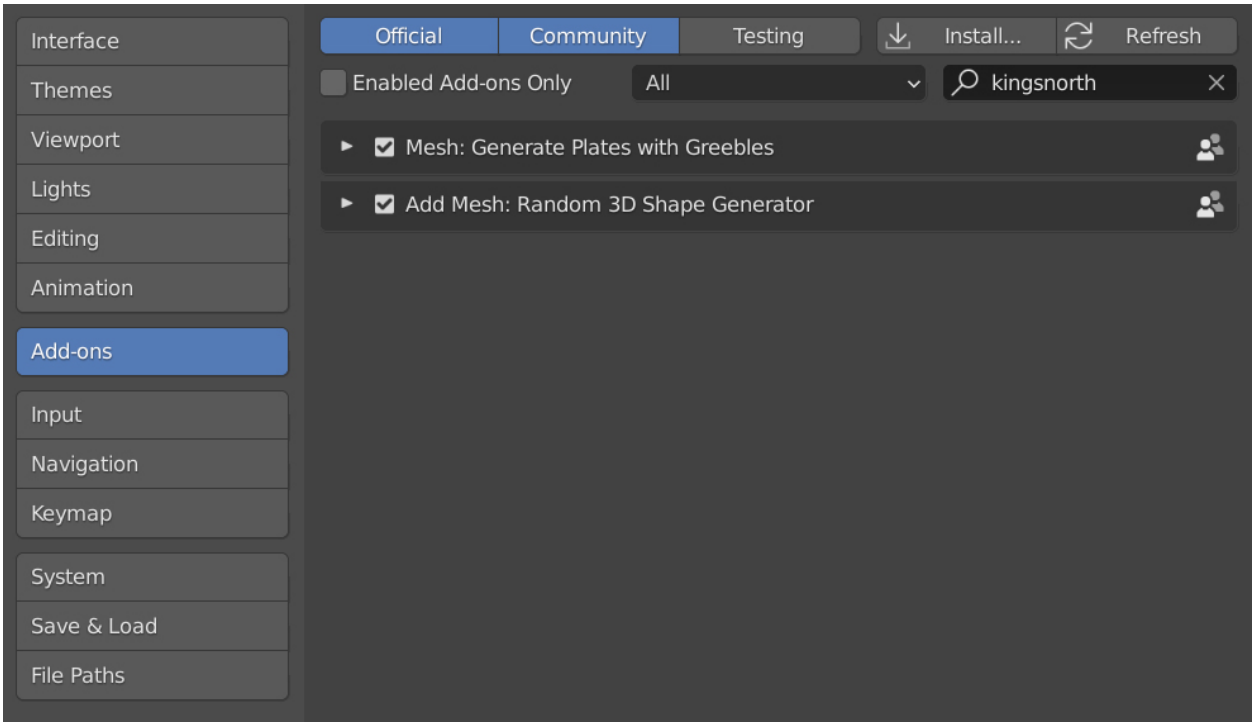
Before you install the Shipwright zip file into Blender, you'll need to install both the and add-ons.

You can do this by installing their latest Blender add-on zip files via the *Add-Ons* tab under the *Edit* -> *Preferences* menu in Blender 2.93 or above:

- : *plating_generator_greebles.zip*
- : *shape_generator.zip*

Detailed instructions on how to install is available from the links above.

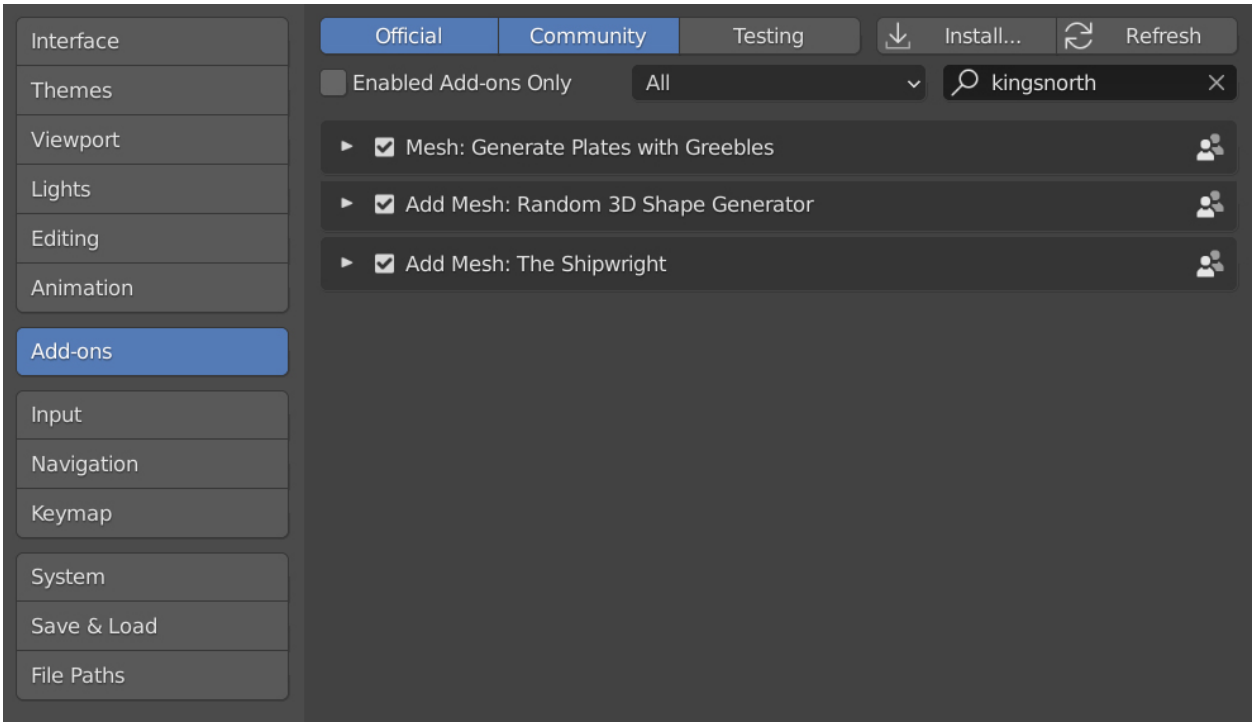
Your set up should be as follows:



1.1.2 Main Installation

1. Go to *Edit -> Preferences*.
2. Select the *Add-ons* tab on the left it is not already.
3. Select the *Install...* button along the top.
4. This will open a file dialog where you should navigate to where you have downloaded the **Shipwright** zip file. This file should not be unzipped.
5. Then, click the *Install add-on from file* button.
6. Search for the add-on by typing *Shipwright* in the search box if it does not already appear.
7. Make sure the checkbox next to the Add-on (*Add Mesh: Shipwright*) is ticked.

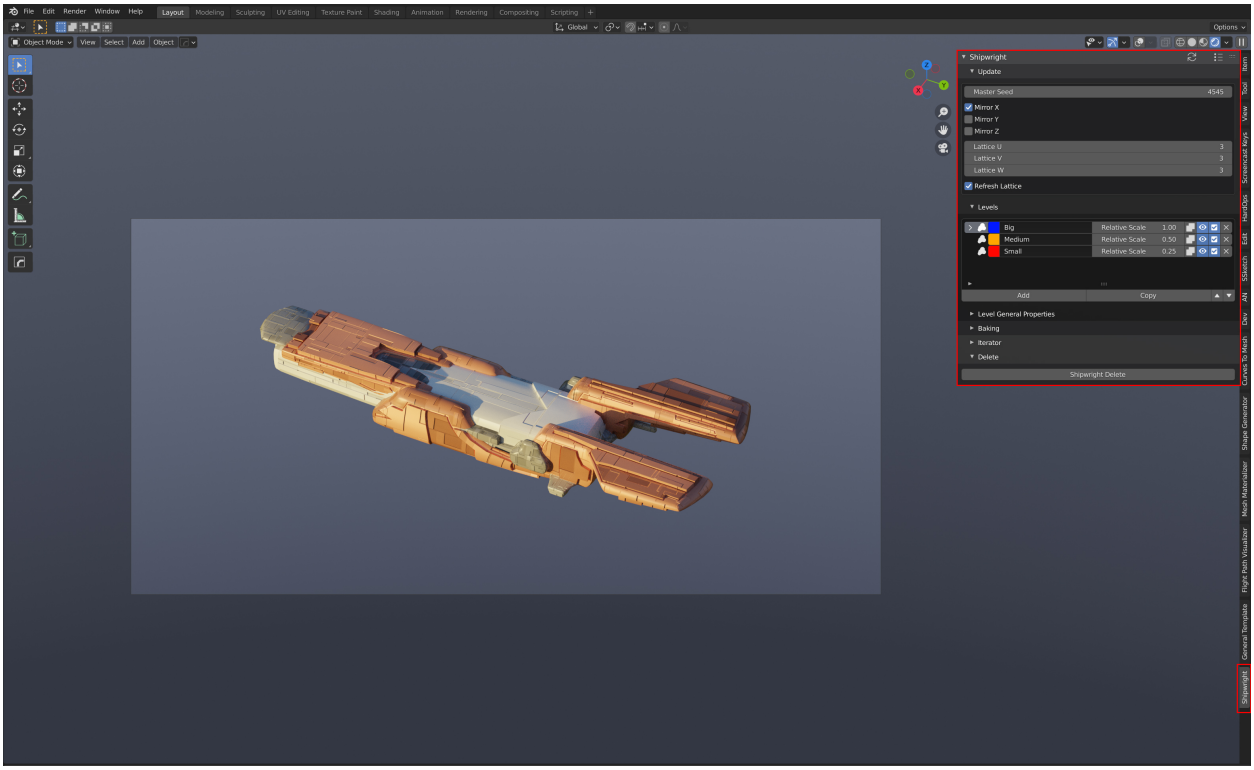
Your set up should be as follows so far:



1.2 Getting Started

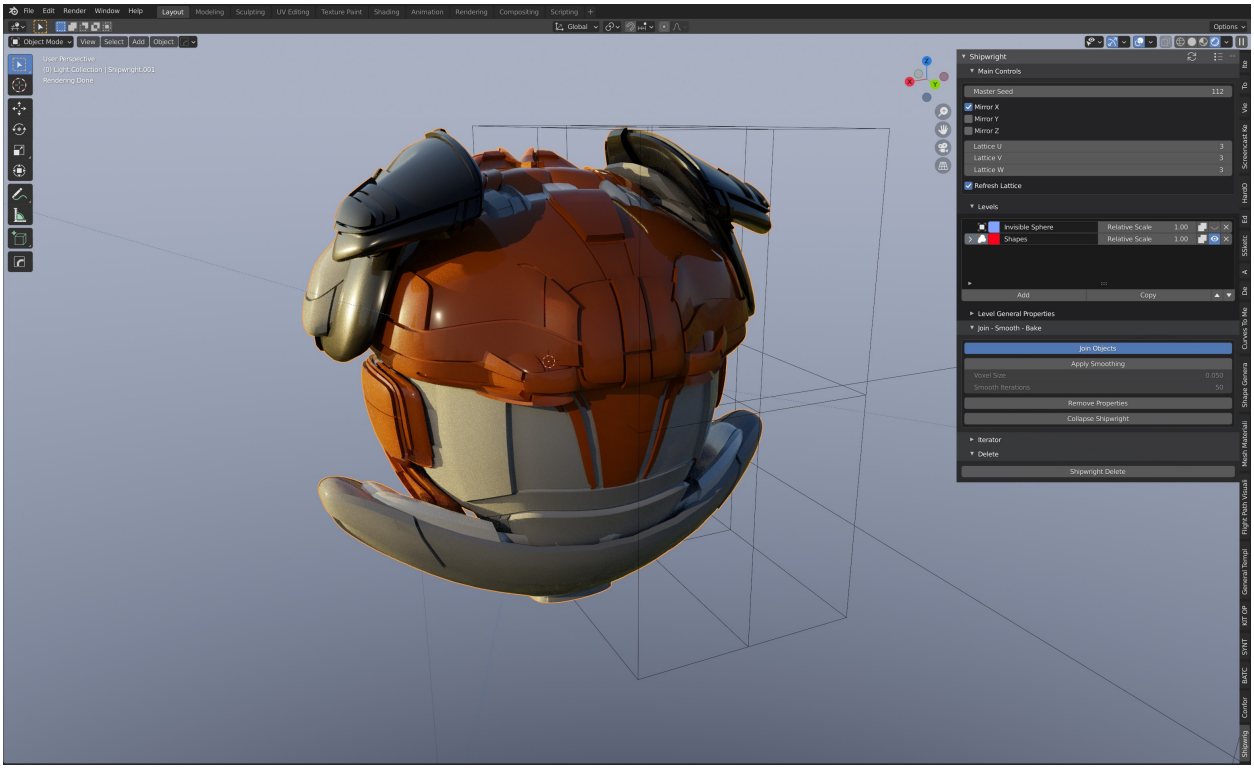
Once you have *installed* the add-on, you can get started by *loading the main sample file* or by *adding your own Shipwright object*. You can then *access the parameters* from the properties panel.

1.2.1 Load Main File



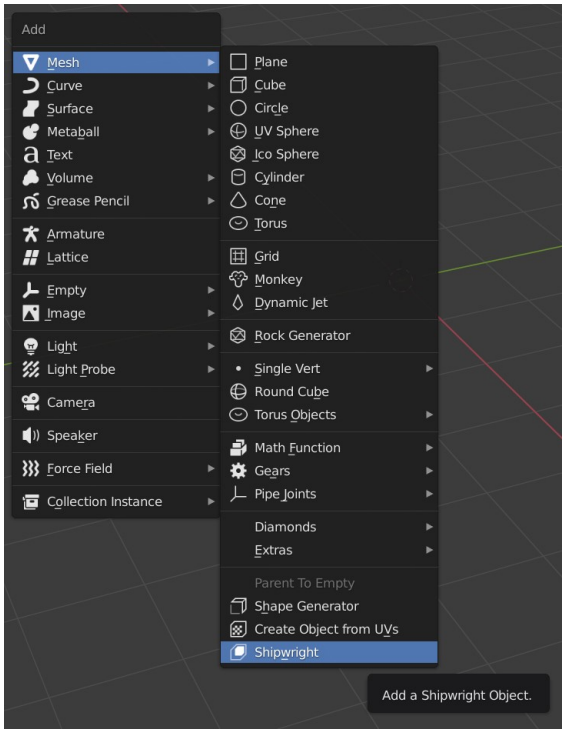
1. Load the **shipright.x.x.x.blend** file into Blender.
2. Make sure that the main object (‘Shipwright’) is selected.

Alternative file



An alternative file that uses the *Cast Feature* to create a more spherical shape is also supplied under **shipwright.head..x.x.x.blend**.

1.2.2 Create a new object



You can alternatively create a new *Shipwright* object through the *Add* menu in Blender. This menu is either accessible through the top of the 3D view or by pressing *Shift+A*.

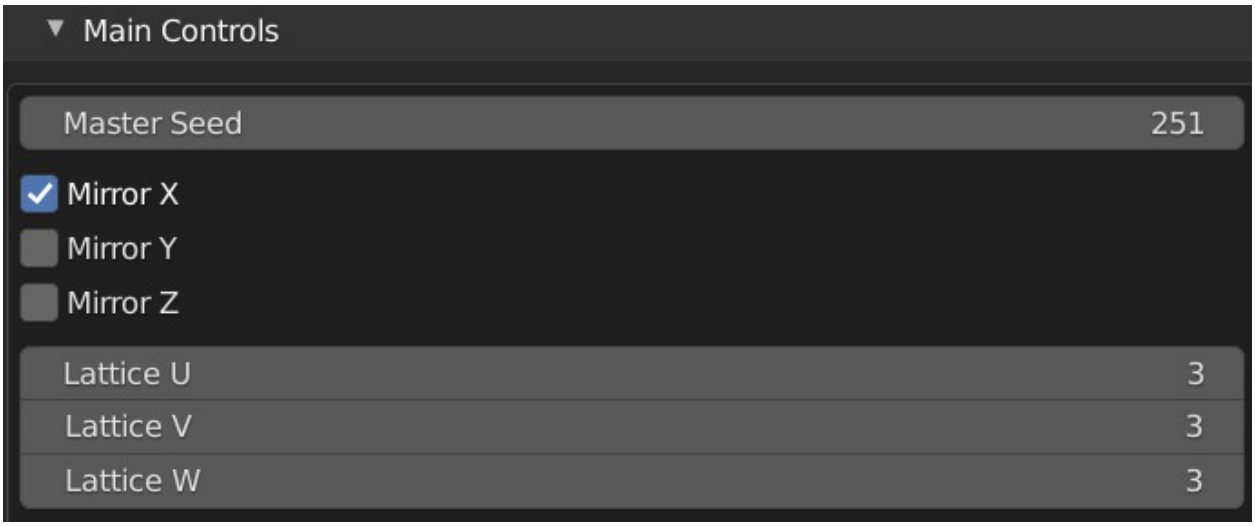
1.2.3 Accessing Parameters

1. Access the "Shipwright" tab on the right hand side of the viewport by pressing the *n* key in the viewport. This is the main panel that controls all the parameters for the object.
2. If the Shipwright object is selected, you should see all the parameters that make up the Shipwright object.
3. Try changing one of these parameters, such as the **Master Seed** value. You should see the object change shape to a new random configuration.

See the *Parameters* section for more.

1.3 Parameters

1.3.1 Main Controls



- **Master Seed**: This controls the overall randomisation of the generated objects.
- **Mirror X/Y/Z**: Mirror the overall object shape in different directions.
- **Lattice U/V/W**: The add-on creates a deformation "lattice" around the object. You can select this lattice object, move its points, and the overall shape will deform further. These parameters control the number of points in the deformation lattice.

1.3.2 Levels

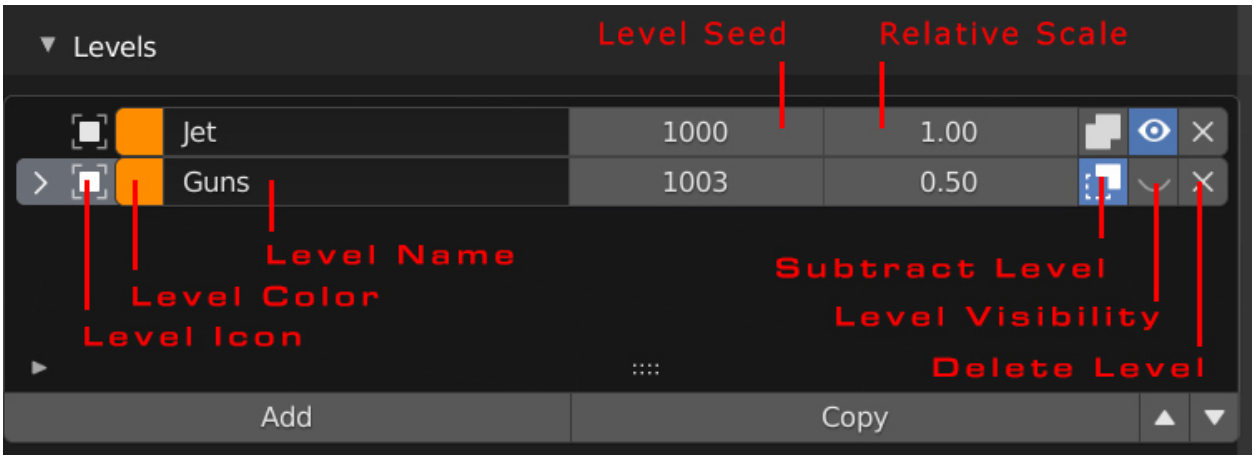


Fig. 1: Level Entry Settings

Levels are similar to layers in Photoshop or Gimp where each layer builds on top of the other. In the Shipwright, objects are first created on the base level and then subsequent levels will randomly scatter objects across the lower levels.

The top level display and controls are:

- **Level Icon**: The icon denoting what type of object this level is using (e.g. Object/Collection/Generated)
- **Level Color**: Change user interface color of the level for managing multiple levels.
- **Level Name**: Name of the level.
- **Level Seed**: The individual *random seed value* for this level.
- **Relative Scale**: The relative scale for each object in the level.
- **Subtract Level**: Use a Boolean *subtract* operation to use the objects on this level as boolean cutters.
- **Level Visibility**: Whether the level objects are visible in the scene.
- **Delete Level**: Delete this level entry.

You also have the options to:

- **Add**: Add a new Level.
- **Copy**: Copy a Level and its settings.
- **Move Up/Down**: Move the level positon with the up or down arrows.

By clicking on the level, this will display the specific properties for that level described below.

Level General Properties

These properties apply to any level type.

Randomness

- **Random Seed**: The random seed used to control the randomness of this specific level. This is used in combination with the *master seed* parameter.
- **Number**: This is the number of objects that are randomly scattered across the surface for this level.

Start/End Scale

This controls the range of different scales for each of the objects created on this level.

- **Start Scale**: This is the minimum range of the scale.
- **Start Scale**: This is the maximum range of the scale.

Start/End Rotation

This controls the range of different rotations for each of the objects created on this level.

- **Start Rotation**: This is the minimum range of the rotation.
- **Start Rotation**: This is the maximum range of the rotation.

Material Override

This will override the default material for the objects on this level.

Generate UVs

This will automatically create UVs for the objects using Blender's UV Smart Projection feature.

- **UV Smart Projection Limit**: This is used by the UV Smart Projection to determine how much of a bend on the surface will determine a UV island. The default setting is recommended.

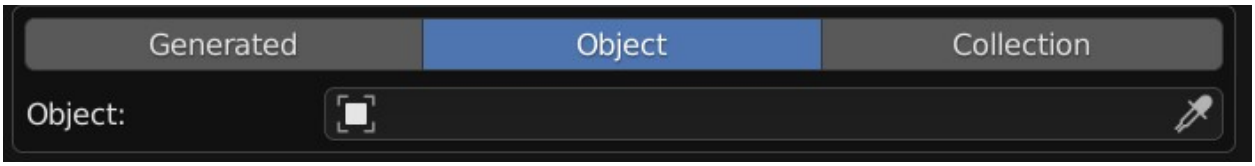
Level Types

Each Level has a different type of object you can scatter on the surface. You can choose from:

- *Custom Objects*.
- *Collection of Objects*.
- *Generated Objects*.

You can also optionally add a Plating effect to the shape with the add-on.

Custom Objects



You can add your own in-scene objects.

- **Object**: The object you wish to be used when scattering objects onto the levels below.

Collection of Objects

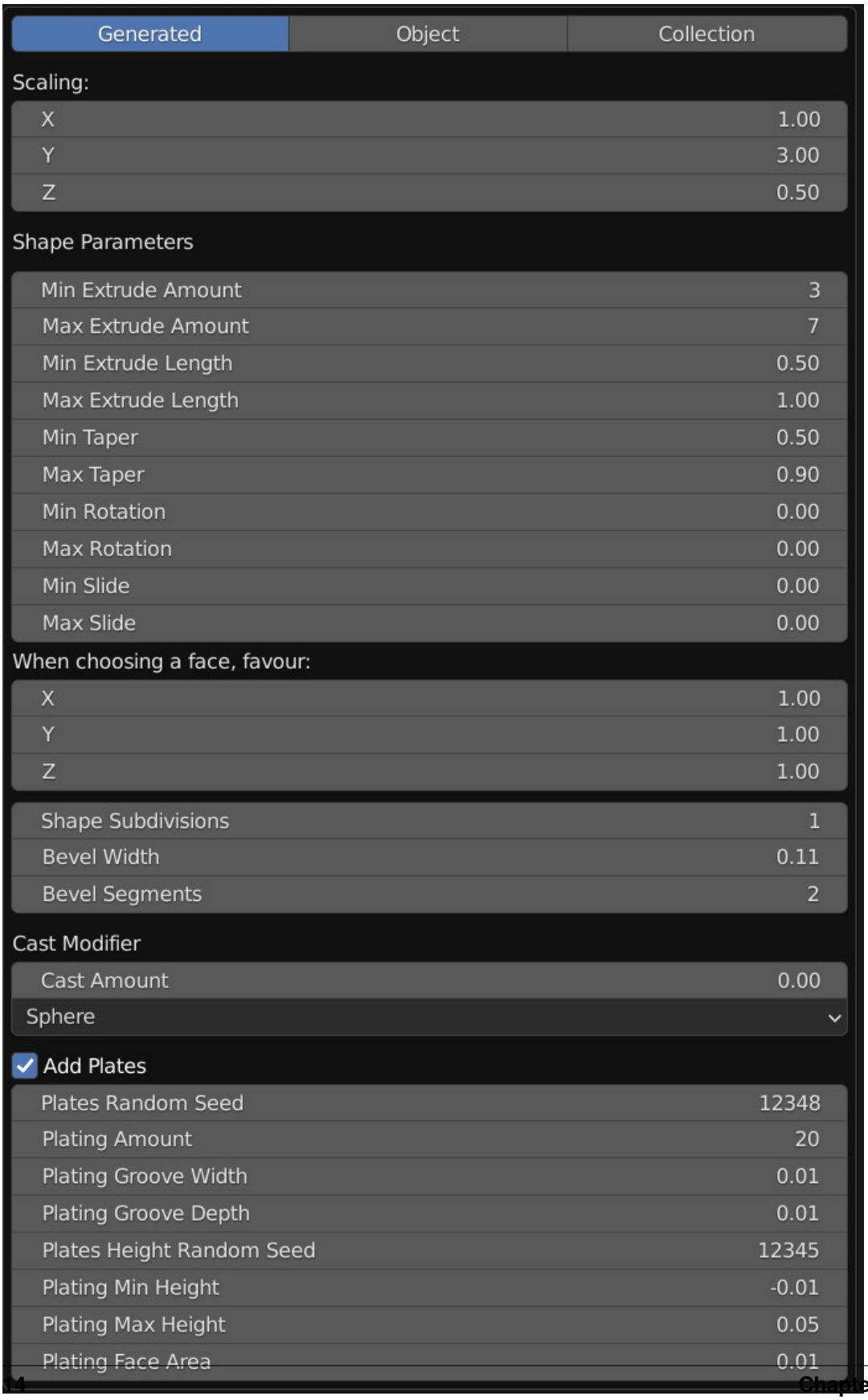
You can also use an in-scene collection of objects the scatter onto the surface.

- **Collection**: The collection of objects to be used for this level when scattering objects onto the surface of the lower levels.

You can sample the objects in two ways:

- **All**: This will use all the objects in the collection and scatter them onto the surface.
- **Samples**: This will use a specified number of objects from the collection specified by the *number* parameter in the General Parameters section.
  - **Allow Duplicates**: When picking objects from the collection, allow for picking the same object more than once.

Generated Objects



This uses the add-on to create randomly created objects across the surface. Each shape will be assigned a unique seed number to make it different.

Generated Object Parameters

Scaling

This controls the scale of each generated object. Useful for creating shapes of a consistent proportion, e.g. tall buildings or long spaceships.

Shape Parameters

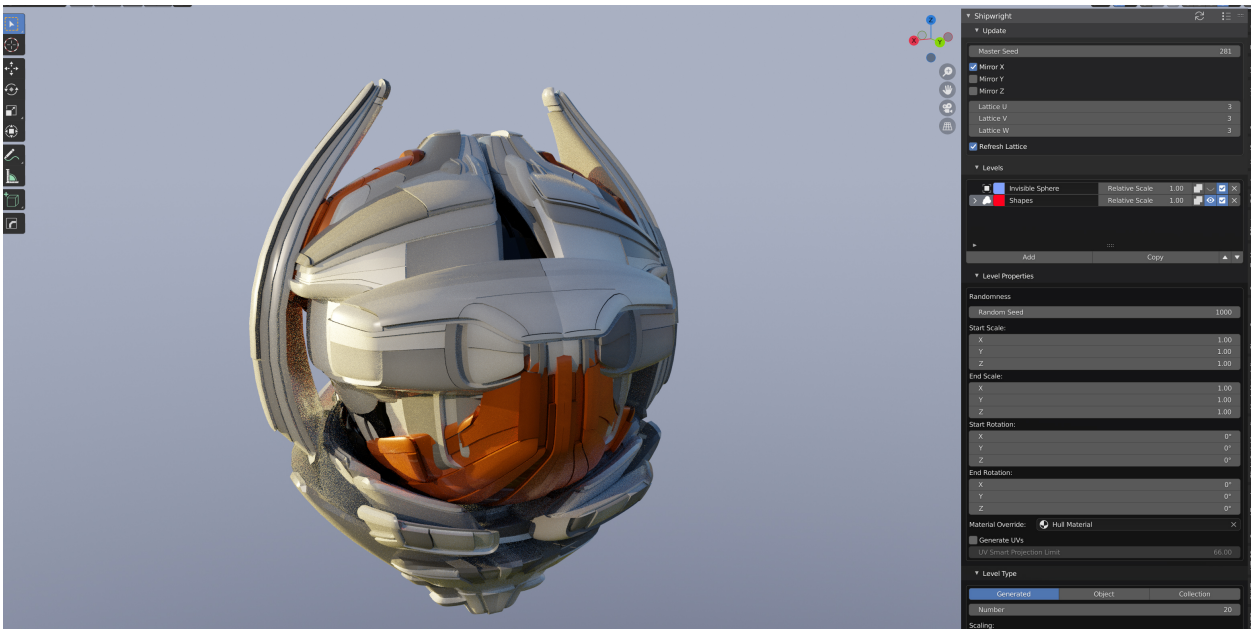
- **Min Extrude Amount**: The minimum number of face extrusions within a generated shape.
- **Max Extrude Amount**: The maxmum number of face extrusions within a generated shape.
- **Min Extrude Length**: The minimum length of a face extrusion.
- **Max Extrude Length**: The maximum length of a face extrusion.
- **Min Taper**: The minimum amount of taper for each extrusion. Smaller values will increase the amount of tapering.
- **Max Taper**: The maximum amount of taper for each extrusion. Larger values will decrease the amount of tapering.
- **Min Rotation**: The minimum amount of rotation applied to each extrusion.
- **Max Rotation**: The maximum amount of rotation applied to each extrusion.
- **Min Slide**: The minimum amount of sliding, or sloping, applied to each extrusion.
- **Max Slide**: The maximum amount of sliding, or sloping, applied to each extrusion.

When Choosing a face, favour...

When randomly choosing another face to extrude while creating the object, this will choose the prefered direction of the face that is chosen. For instance, a value of (1,0,0) will only favour a face pointing towards the X direction.

- **Shape Subdivisions**: How many sub-faces a face is divided into.
- **Bevel Width**: The width of the desired bevel effect on the overall generated object's edges.
- **Bevel Segments**: The number of segments in the bevel effect.

Cast Modifier



This is used to apply a Cast Modifier that will deform the overall shape of the objects being applied.

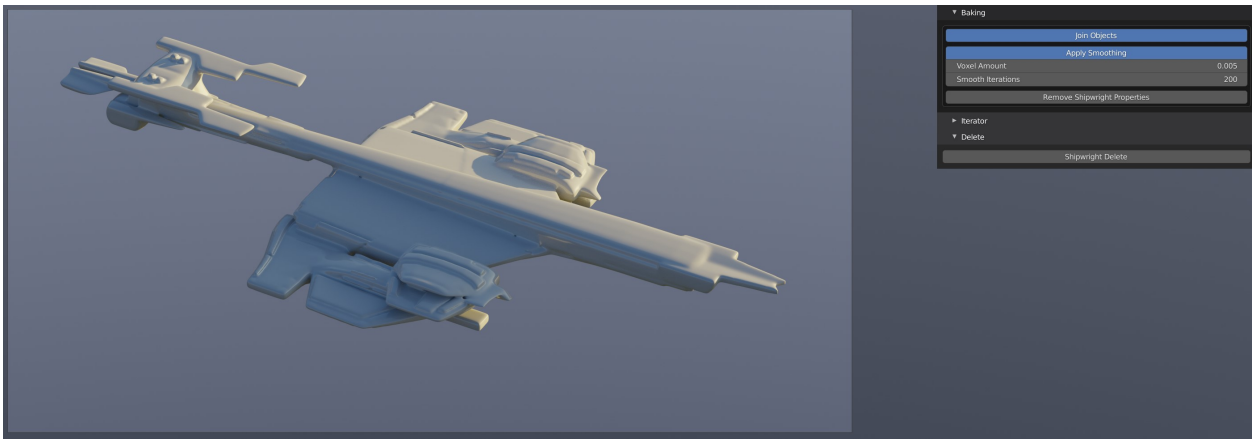
- **Cast Amount**: The amount of deformation the cast modifier applies.
- **Cast Type (Sphere/Cylinder/Coboid)**: This is the type of deformation shape that the cast modifier applies.

Adding Plates

You can optionally add a Plating effect to the objects using the Add-On. Note that faces on the original objects need to be selected and have quad (4-sided) edges.

- **Plates Random Seed**: The random number used to generated different plating patterns.
- **Plating Amount**: The percentage of cuts to make the plate.
- **Plating Groove Width**: The width of the grooves of the plates.
- **Plating Groove Depth**: The depth of the grooves.
- **Plating Height Random Seed**: The random number used to vary the heights of the plates.
- **Plating Min Height**: The minimum height of the plates.
- **Plating Max Height**: The maximum height of the plates.
- **Plating Face Area**: The minimum size of the faces for the plating effect to be applied to.

1.4 Joining, Smoothing, and Baking



Because the Shipwright creates multiple objects, the joining and baking operations are designed to help you merge all these objects into one mesh and to apply smoothing operations if you choose to further sculpt or deform the image in any way.

1.4.1 Joining

The *Join* button when activated will automatically combine all the objects created in the Shipwright into one.

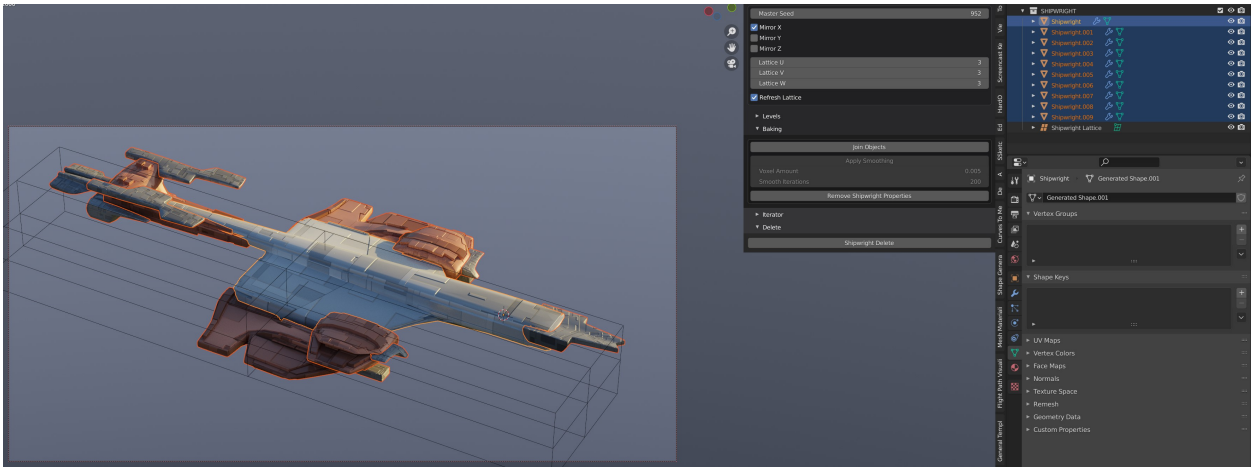


Fig. 2: The Shipwright unjoined with multiple objects.

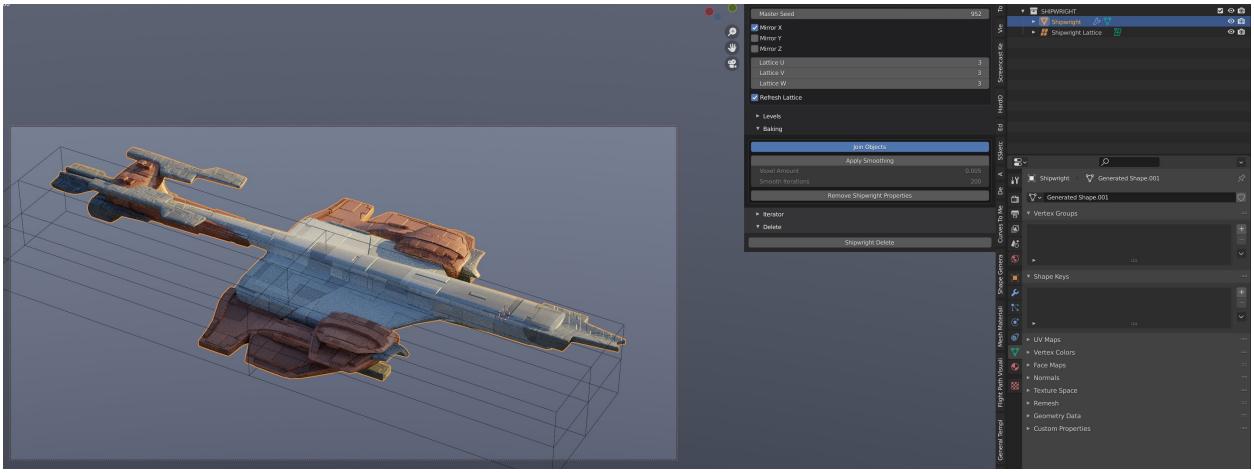


Fig. 3: The Shipwright merged together with the Join operation.

1.4.2 Smoothing

Warning: The Smoothing operation is a processor intensive operation at lower Voxel settings, and can cause Blender to freeze for a long period of time.

Materials are not carried over during the operation as the object's topology is completely remapped.

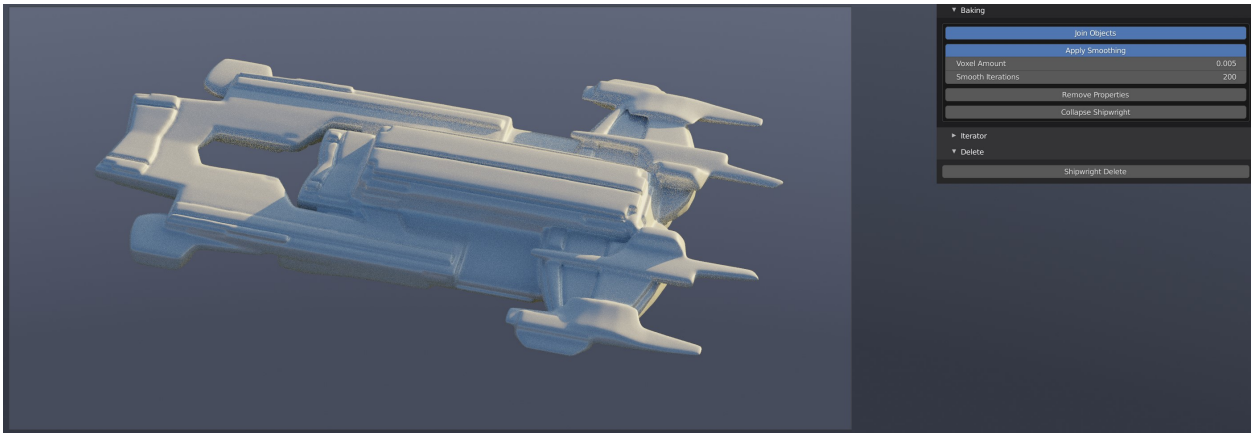
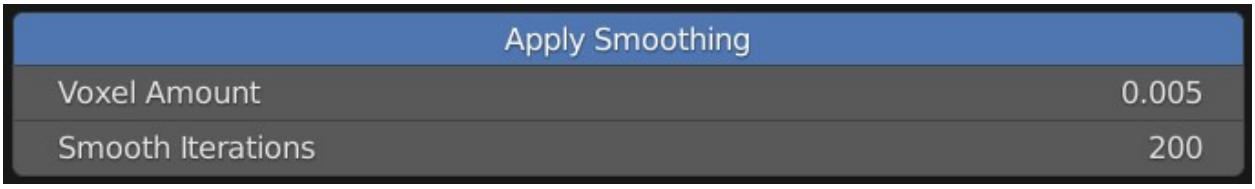


Fig. 4: A Shipwright object with Smoothing Operations applied.



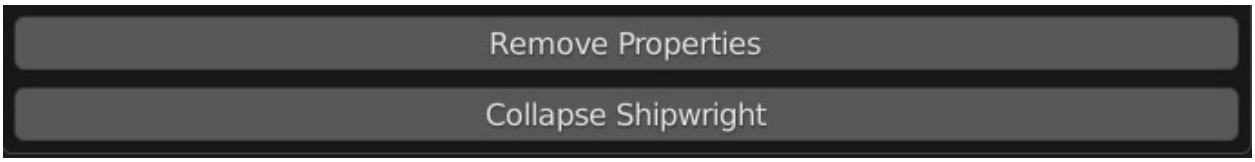
When *Joined* into one object, the Shipwright can automatically add the Remesh and Smooth modifiers to the object when the **Apply Smoothing** button is activated.

This creates smoothed mesh that can then be used for sculpting.

Parameters are as follows:

- **Voxel Size**: The *Remesh* modifier uses Voxels (3D Pixels) to determine how to alter the mesh topology. Smaller values will produce higher levels of detail but will take longer to process. Be careful not to make the values too low (e.g., less than 0.01).
- **Smooth Iterations**: This controls the number of times the *smooth* operation is applied to the retoplogised mesh. Higher levels will produce a smoother result.

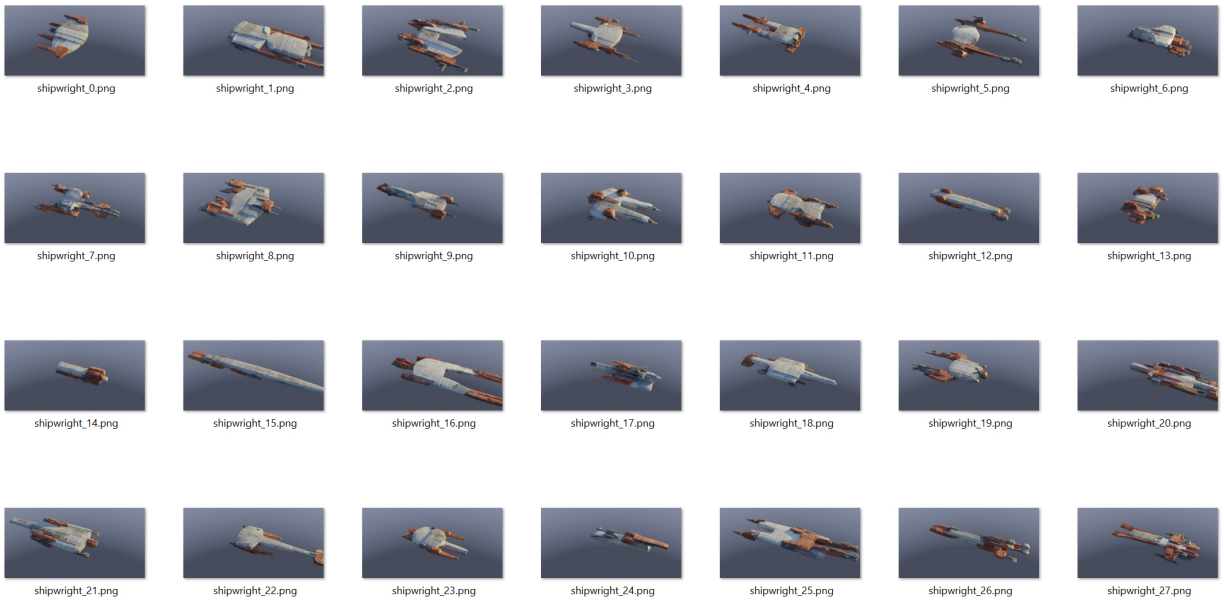
1.4.3 Baking



If you are ready for your Shipwright object to be taken to the next stage of editing in Blender and no longer wish for it to be changed through the panel, you can perform one of the following operations:

- **Remove Properties**: This wll remove the properties from the object or objects so that the panel will no longer change it, leaving the deform lattice and any mirroring or other modifiers intact.
- **Collapse Shipwright**: This will remove the properties and also collapse all modifiers for the Shipwright object.

1.5 Iterator



To assess many possible combinations, the Iterator feature can use the camera in your scene to automatically render a range of Shipwright master seed combinations to a directory of your choosing.

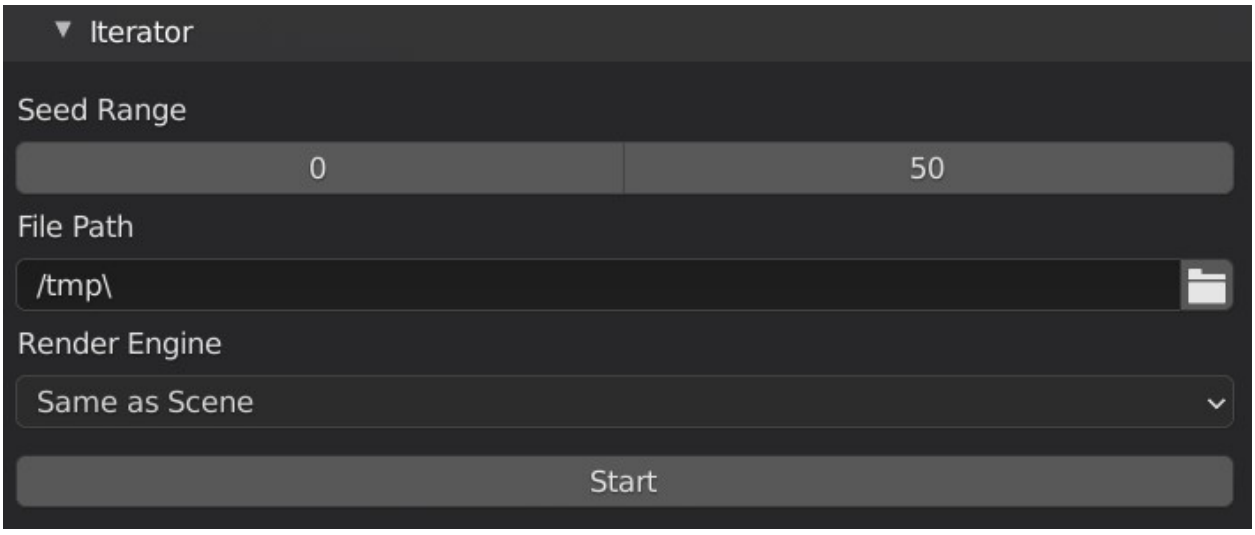


Fig. 5: Iterator Controls.

1.5.1 Using the Iterator

The iterator will produce a set of images, each image is a preview of the Shipwright when it is in that seed configuration.

The name of the filename will display the master seed value used.

- **Seed Range**: set the master seed range used to render out different combinations.
- **File Path**: The output directory for the file images.
- **Render Engine**: Optionally choose a render engine different to the main scene. The Iterator will then use the settings of the alternative renderer.
- **Start**: start an iterator process. Whilst the images are rendering, Blender may appear to freeze. You can check whether the images are being output by navigating to the output directory to see if the images are being created.

1.5.2 Cancelling the operation

Whilst running, there is a file called **running.ack** that you can use to stop the iterator and unfreeze Blender. Remove running.ack, and after rendering an image Blender will check for the presence of this file. If this file no longer exists, it will cancel the operation.

This is similar to the iterator function in KIT OPS SYNTH.

1.6 Actions

1.6.1 Delete

When a Shipwright object is selected, you can delete it and all related objects by pressing the *delete* button. This will remove all objects associated with the shipwright from your scene.

1.7 Contact

If you have a question, issue, or new feature do not hesitate to get in touch via info@configurate.net.

CHAPTER

TWO

INDICES AND TABLES

- genindex
- modindex
- search