User manual addons

Addons are completely separated from the main asset Spline Architect. You can delete them from the addons folder if you so want to. But remember that all the data they had will be lost.

Terrain Tools

The terrain tools addon has 3 main features.

- Deform terrain.
- Paint terrain.
- Instantiate objects along a spline.

Terrain deformation and object instantiation has an indestructible work flow. Meaning you can always revert back to how it was before.

You can easily create whole worlds by creating mountains, rivers and path in this indestructible workflow. You do that by combining different noise layers and applying that to your terrain deformation, terrain painting and object instantiation.

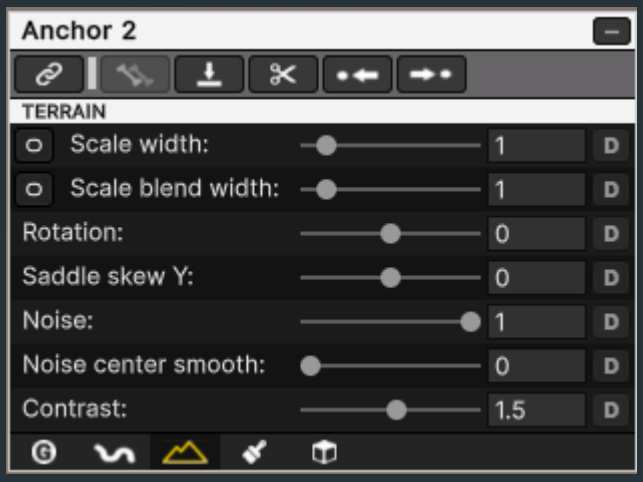
Menus

When you install the Terrain tools addon you will get access to 3 sub menus for the spline.

Terrain deformation

- **Range** | The range of the spline that should deform the terrain. You can have up to 8 range values on the same spline.
- **Width** | Width for the terrain deformation.
- **Blend width** | Determines the horizontal extent of terrain deformation, defining the transition area where the terrain shifts from its original to its deformed state. You can also change its curvature by setting different easings.
- **Height offset** | Extra height added between the spline and terrain (can be negative).
- **Noise group** | The noise group you want to be applied to the terrain deformation.
- **Noise space** | What space the noise should originate from.
- **Noise erosion** | Warps the noise in an erosion-like way, either to the right (positive values) or to the left (negative values). This is not a true erosion simulation, but it can produce visually similar results with virtually none of the performance cost of a real calculation.
- **Terrain resolution** | Increase the quality of terrain deformations. Try increasing this value if you get unwanted behaviours when deforming terrain.

Terrain deformation effects

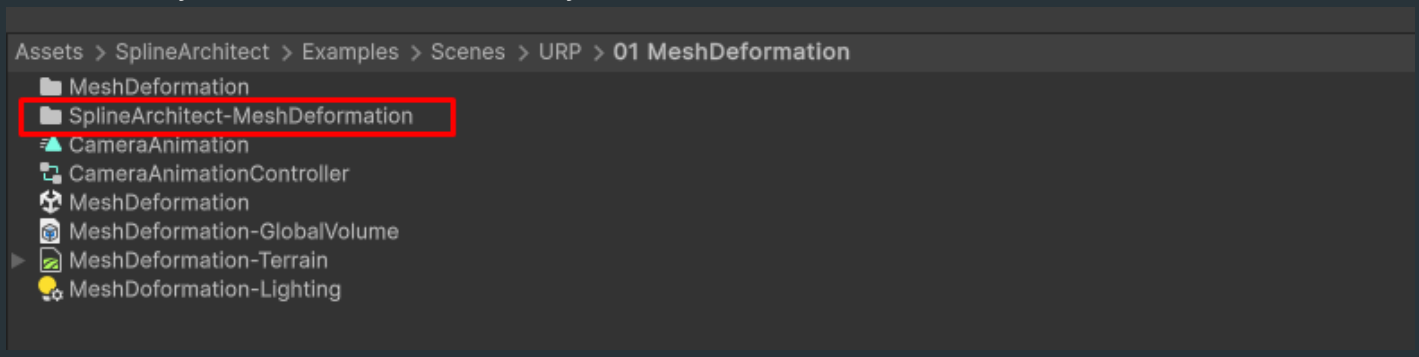


Selecting control points give you access to the menu above, where you can apply different behaviours for each control point on how you want to deform the terrain.

Terrain data

Spline Architect generates binary files during terrain deformation. These binary files store terrain data, enabling you to revert the terrain back to its original state at any time. If you delete this data, you may experience unwanted 'build-up' of the terrain, and the 'Revert Terrain' button will cease to function.

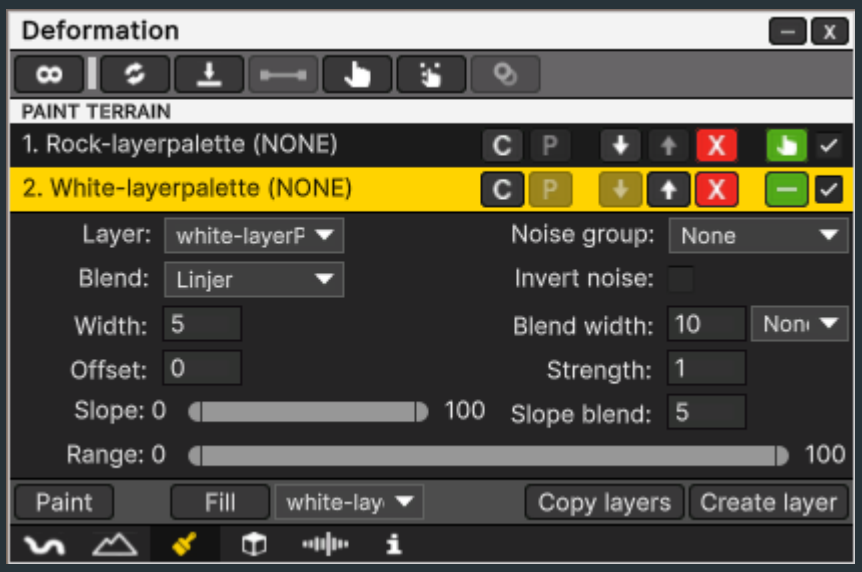
These binary files are located inside the 'SplineArchitect-YourSceneName' folder. This folder will automatically be created when necessary.



> If you rename your scene file you need to rename the SplineArchitect data folder to 'SplineArchitect-YourNewSceneName'.

Terrain painting

You can have up to 16 paint layers for each spline. The order of each layer matters where the layer 1 will be painted first, 2 will be painted second and so on. You can order them by pressing any of the arrow keys on the specific layer. You need to have one or more layer palettes assigned to the terrain for creating layers.



- **Layer** | The terrain layer pallet you want to paint with.
- **Noise group** | The noise group you want to have effect when painting.
- **Blend** | The curvature of the blend width.
- **Invert noise** | Inverts the noise group.
- **Width** | The painted width that originates from the spline.
- **Blend width** | The painted blend width that originate from the spline. Can also have a noise group assigned to it.
- **Offset** | Offset the painting to the left or right by adding a negative or positive value (the offset is in Unity meters).

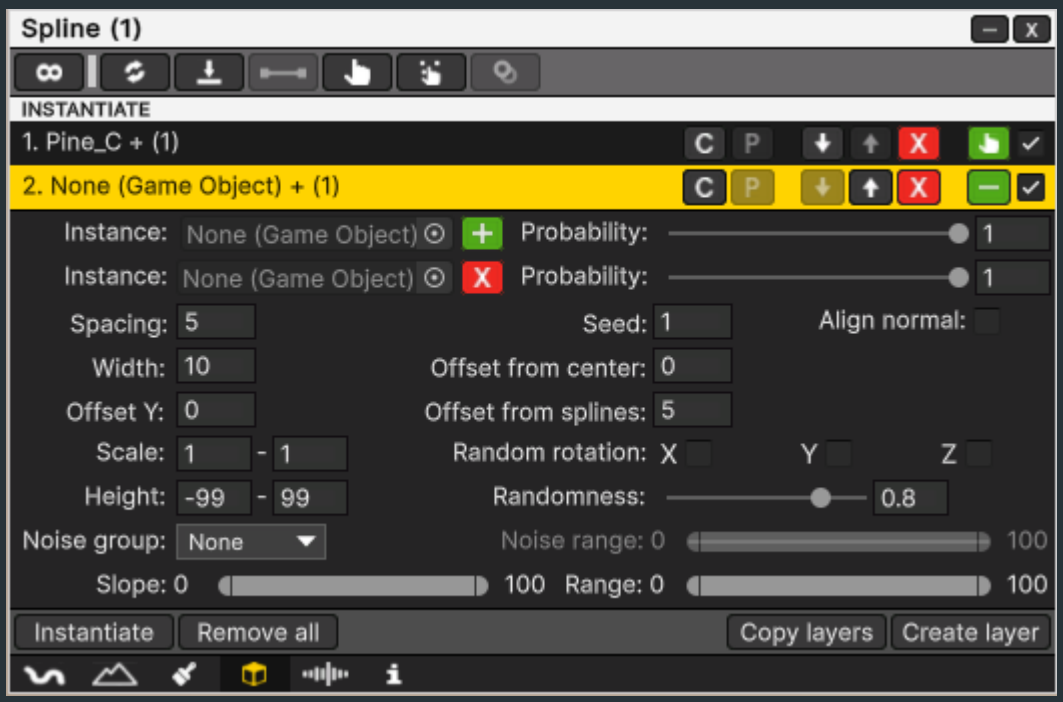
- **Strength** | The strength of the layer palette related to other palettes. The value can be above 1 and some times this is preferable.
- **Slope** | Will only paint within this slope value.
- **Slope blend** | How strong the blending of the slope painting will be.
- **Range** | The range of the spline that should be painted.

Terrain painting effects

Selecting control points give you access to the menu above, where you can apply different behaviours for each control point on how you want to paint the terrain.

Object instantiation

You can have up to 16 instantiate layers for each spline. The order of each layer does not matter. But you can change order if you want.



- **Instance** | Drag a prefab or any GameObject in the hierarchy you want to instantiate. You can create up to 16 instance fields in each layer.
- **Probability** | The probability setting for each instance field. 1 is the highest, if you set it to 0 it will never be instantiated.
- **Spacing** | The spacing between each instance.

- **Seed** | A number that controls all randomness. Using the same seed will always generate the same result. Changing the seed produces a different random arrangement.
- **Align normals** | Will align the instance transform with the terrain or whatever the GameObjecet should be instantiated on.
- **Width** | The width of the instantiate are. Originates from the spline.
- **Offset from center** | Skip instancing in a set distance from the center of the spline. Can be useful if you want to deform a path in the terrain, but only want to instantiate trees (for example) on the side of the path.
- **Offset from splines** | Of close instances can be other other splines (not the one your instancing from) in the scene.
- **Scale** | Random scale for instances.
- **Random rotation** | Random rotation for specific axels.
- **Height** | The height range instances can spawn within. Originates form the spline.
- **Randomness** | The randomness factor.
- **Noise group** | The noise group you want to use for all instances.
- **Noise range** | The range of the noise value where instances can spawn.
- **Slope** | What slope value instances can be spawned on. Having for example 0 to 20, will only spawn instances on nearly flat to flat ground.
- **Range** | The range of the spline, instances can be spawned from.

Object instantiation effects

Selecting control points give you access to the menu above, where you can apply different behaviours for each control point on how you want to instantiate objects along the spline.

Object Cloning

The Object Cloning menu can be accessed from a selected SplineObject, and the SplineObject must be of type "Deformation".

You can clone any deformation or follower, either to the end of the spline or by specifying a fixed number of clones. You can also clone a sequence of deformations and/or followers. When not cloning a specific amount, the cloning continues to the end of the spline, and the number of clones will automatically update.

If you enable the “Snap End” feature, the last clone will snap to the end of the spline and completely fill it, as long as the first deformation is aligned with the start of the spline.

To clone, start by creating an empty GameObject and parent it to a spline. Then parent any followers or deformations to this empty GameObject. Next, open the Object Cloning submenu for the empty GameObject and press "Clone Children".