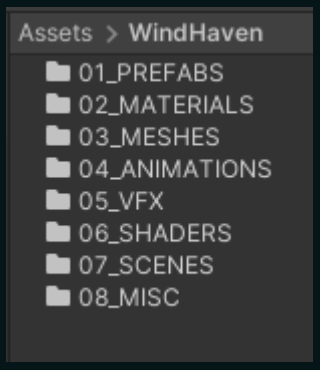
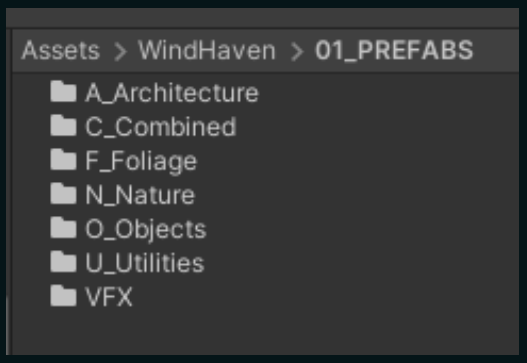
Windhaven

1) Pipeline Compatibility

WindHaven is a package made specifically for the Universal Render Pipeline.

2) Package Architecture





Prefabs : this is where anything you might want to use is. It is divided in categories such as Architecture or Foliage.

- ***C_Combined :*** *examples of how the houses can be built using the architecture prefabs.*
- ***U_Utilities :*** *prefabs of simple objects like bricks or wood planks to ease the junctions between elements or get creative. Examples of how they are used can be seen in the demo scene.*

Materials : divided in folder per material, each one containing its textures.

Meshes : divided the same way prefabs are.

Animations : Contains the animations for the windmills.

VFX : Contains de materials and textures for the VFX.

Shaders : Contains the shaders the package uses (can be found in the material drop list under “WindHaven”)

Scenes : The Demo Scene and its components.

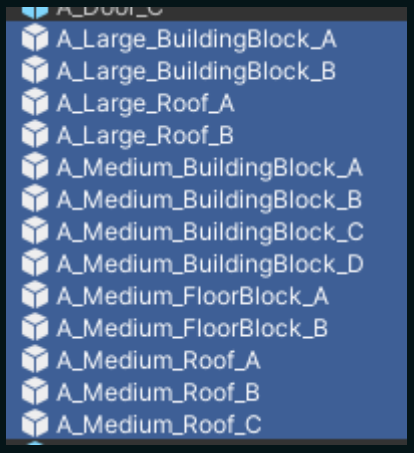
Misc : Lighting settings, post processing.

3) How to use this package

WindHaven helps you create a fantasy medieval town and its surrounding nature in a semi-realistic style.

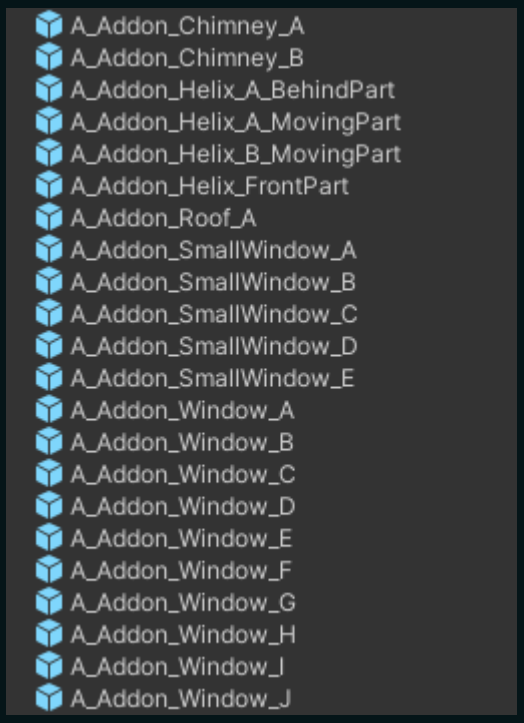
A) Create Houses :

In the 01_PREFABS/A_Architecture, you will find the building blocks to use to create houses.



- create an empty game object at the floor level
- drag and drop a medium or large building blockin in it in 0-0-0
- drop another one and adjust its Y value to be put on top
- finish with a roof.

Once you have the core building built, time to add some addons.



Add any of those addons on the walls of the building to make it more complex and interesting.

You can find examples of this being made in 01_PREFABS/C_Combined

B) The Standard Shader

The Mask texture is organised this way :

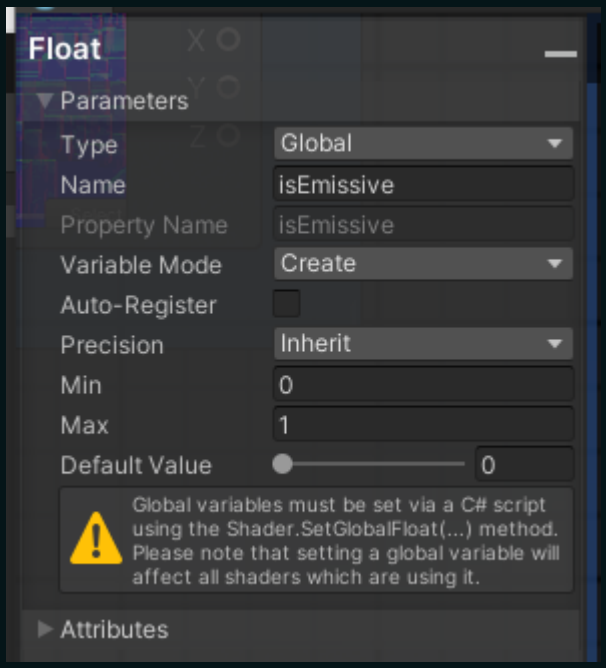
R - Ambient Occlusion
G - Roughness
B - Metallic

You can tweak the intensity of the Ambient Occlusion map with the AO_strength slider.

The Detail Albedo can be tweaked according to the intensity of detail you desire in the final result.

The Emissive is masked by a texture. In this package it is mapped to the windows and lanterns, so that you can create a night atmosphere by illuminating the inside of the houses.

Just raise the emissive Color to a high value (by tweaking its HDR range) and see the result. If you want to turn it on by code, you can check the “is using Emissive” checkbox and use the global variable “isEmissive” (float from 0 to 1), while still having your color on a high value.



C) The Ground

The ground material uses Vertex Color to blend between 3 materials : grass, dirt and pavement.

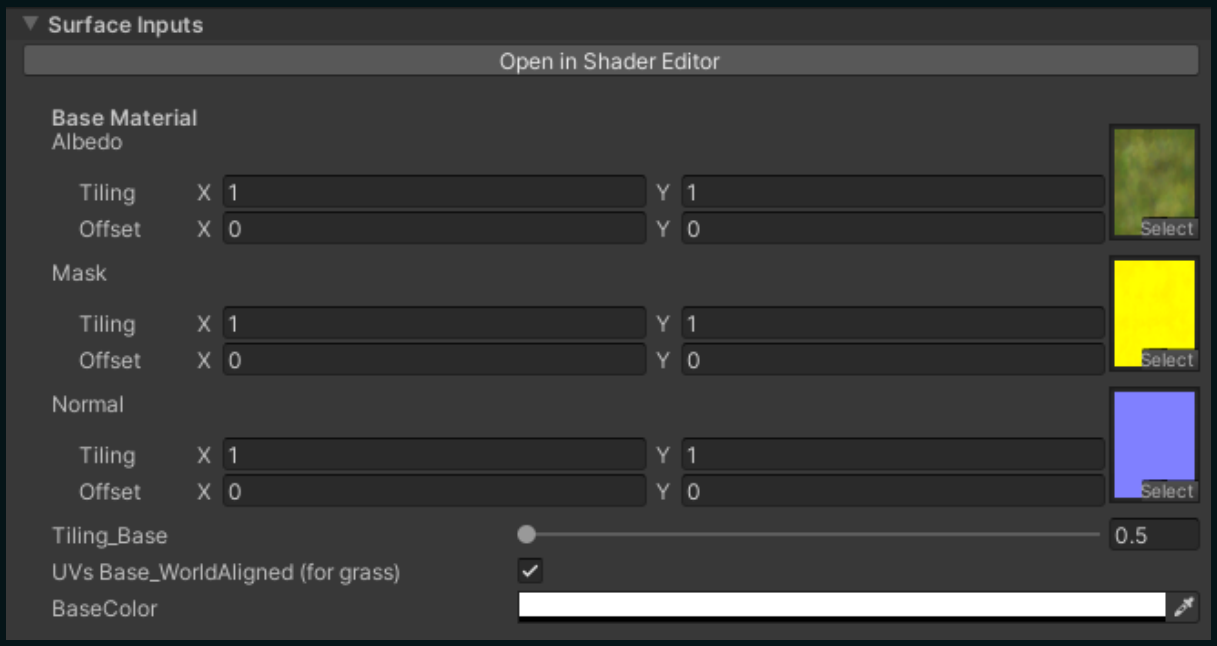
If you don’t know how to use Vertex Color, you can download the polybrush asset from the Asset store and test it on a plane on which you have assigned the ground material.

How it works :

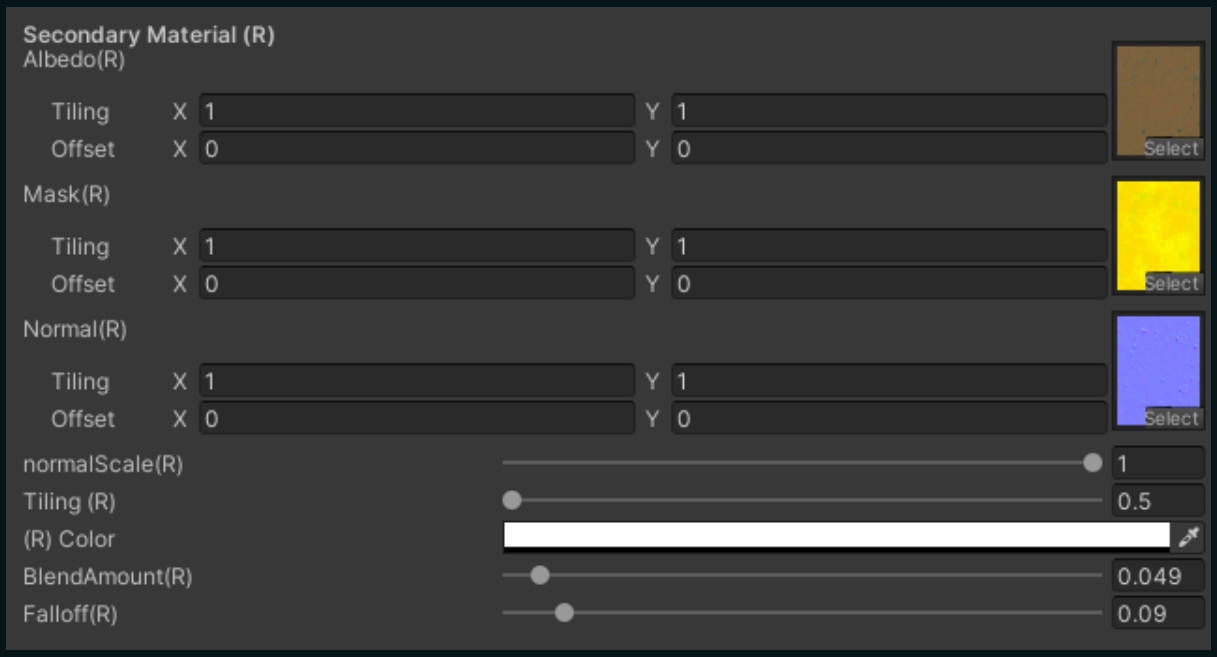
The base material is assigned to the black (0.0.0) vertex color.
On top of that, you can paint red (1,0,0) to blend some dirt material, and then green (0,1,0) to blend the pavement.

By default, a plane's vertices are white, so if you apply the material on a new mesh you created it should only show pavement.

Specifics of the shader :

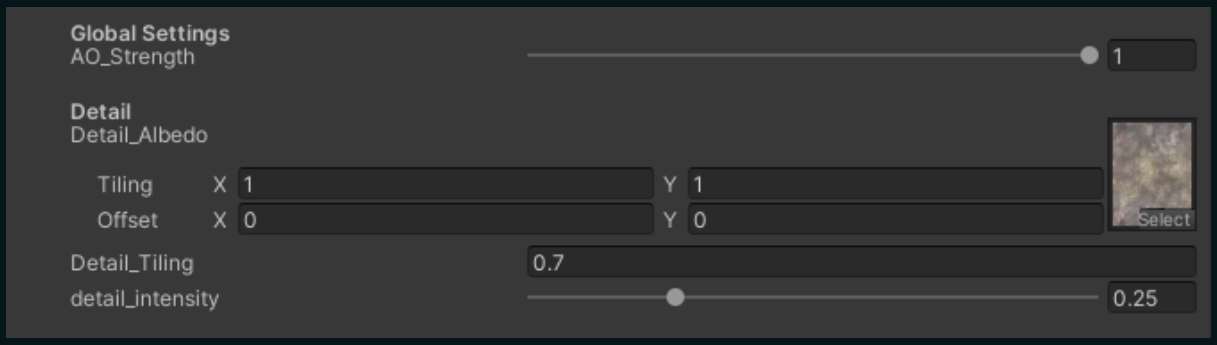


For the base material (the grass), you have the checkbox option for "UVs Base_WorldAligned". It means that the texture will be aligned to the world position instead of the mesh's UVs. It is useful for grass so that the grass meshes on top of the ground use the same texture coordinates for their color, and therefore blend well with the ground.



For the dirt and Pavement, there are some settings you can adjust as well :

- normal Scale : intensity of the normal map (bump).
- Tiling
- Color
- blend Amount : How much the vertex Color influences the apparition of this material.
- Falloff : The softness of the transition. A small number will mean a very sharp transition.

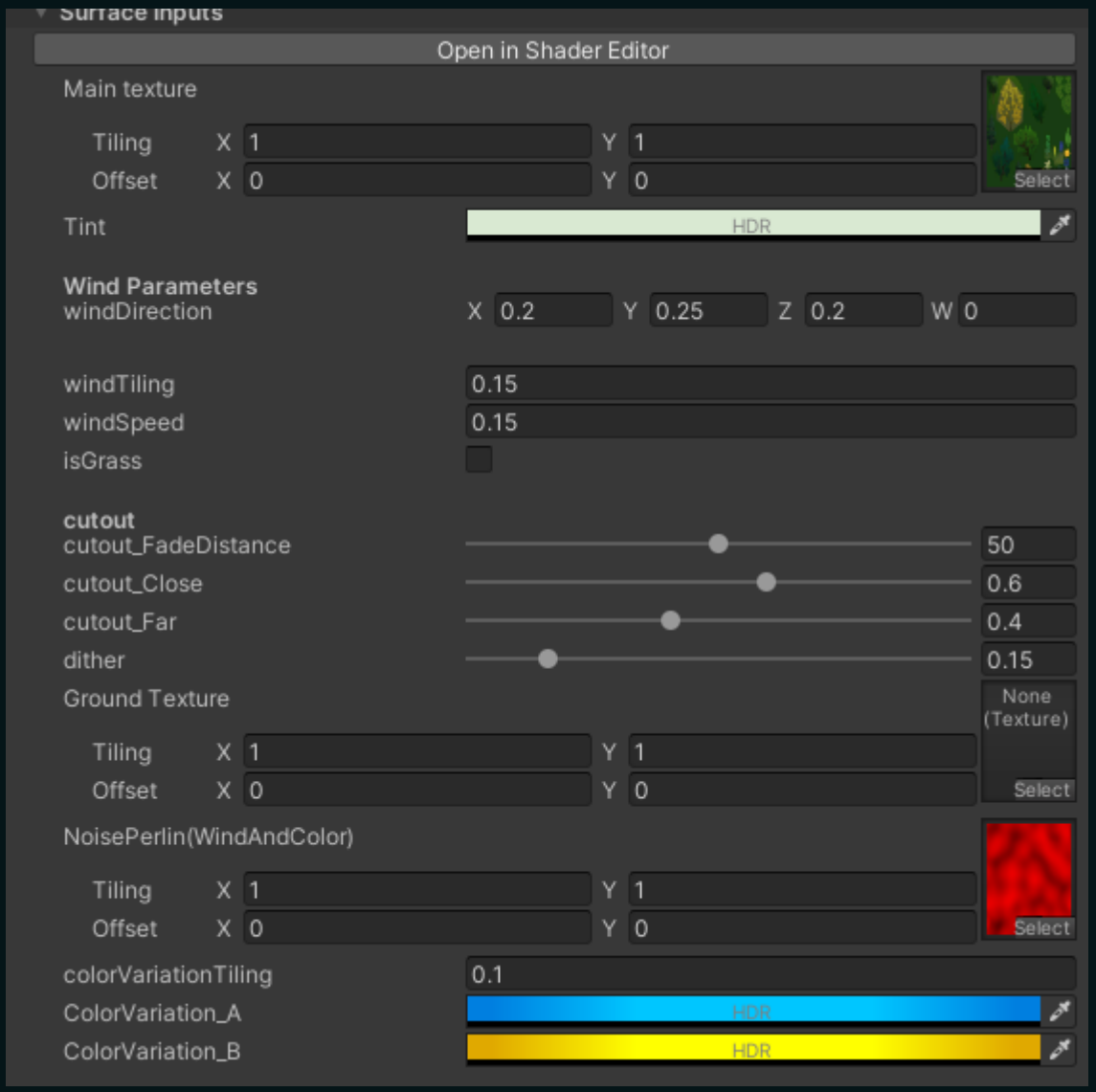


The Global settings will affect all 3 of the materials.

The AO strength is the intensity of the Ambient Occlusion Maps. A lower value will get a lower contrasted, softer, usually more stylised result.

The Detail Albedo adds a sort of painterly quality and some finer details to the final result.

D) Foliage



The Foliage works as followed :

The Main texture uses the alpha Channel for transparency.

The Wind uses a panning noise texture that you can tweak with “windTiling” and “windSpeed”. you can then change the direction by tweaking the values in “windDirection” (vector 3)

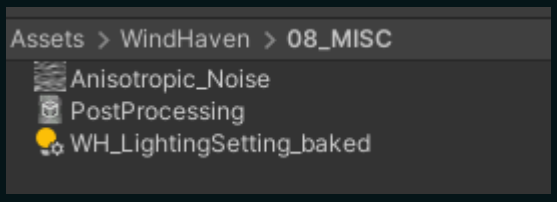
The cutout options are designed to avoid noisy foliage when they are far from the camera : the idea is to change the cutout value along with the distance so that we get dense foliage when they are far.
the dither value assigns the use of dithering on the foliage. This creates the illusion of soft transparency without using actual transparent shader. a value of 0 will use no dithering.

The “isGrass” checkbox and the “Ground Texture” are used for grass. If checked, the material will use the ground texture aligned to the ground UVs for its color.

The Color variations parameters use the Noise texture in triplanar mode to apply touches of color to the foliage and add overall variations.

E) Lighting

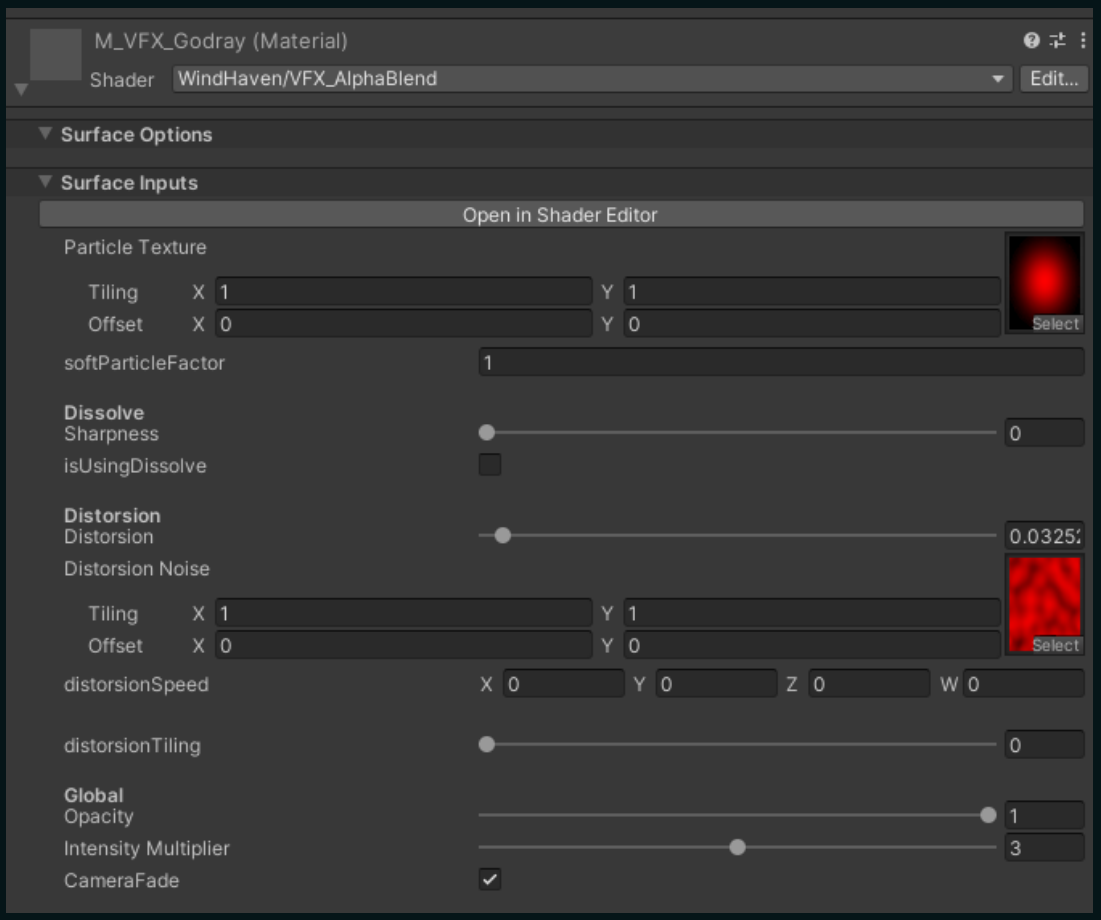
If your project allows it, you can bake the lightmaps according to the lighting settings in 08/MISC. You will also find a Post processing Profile that you can adjust according to your preferences.



If you just downloaded the project, you might want to build the lights in the Demo Scene to achieve the best result possible.

F) VFX

All the particle systems use the same Shader, that works as follows :



particle texture : Uses the Red Channel to define Alpha.

softParticleFactor : distance from a surface from which the particle fades out. 0 means no fading

sharpness and isUsing Dissolve : This is a bit advanced and is used for the fire and the smoke material. This uses a Custom vertex stream to dissolve the particle while still keeping control over the general alpha of the particle via the vertex color. You can see how its made in the fire VFX prefab for example.

Distorsion : Pans a noise texture to distort the particle. Useful for smoke or clouds.

Intensity Multiplier : useful for very bright particles like fire.

CameraFade : Fade the particle near the camera, useful for Big environment particles like godrays or CloudCards.

4) Possible issues

The scene is overly bright :
The scene was built in Linear Color Space, and your project is probably in Gamma. you can either change to linear or just reduce the directional light intensity to something like 1-1.5.