CITYGEN3D®

Vegetation Studio Pro Integration

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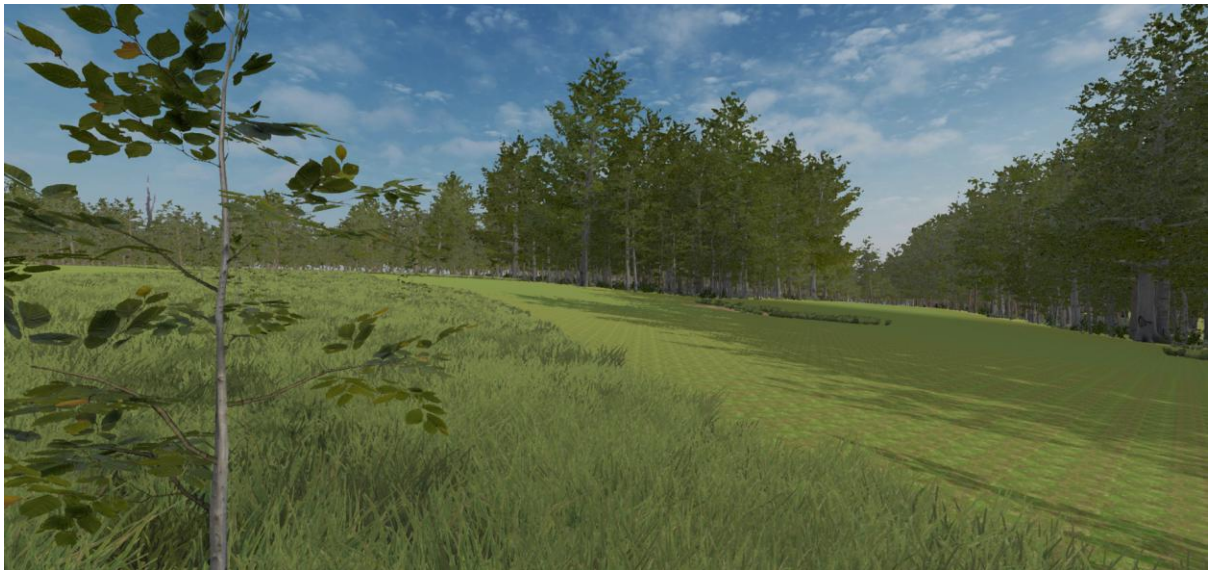
💡 *Some screenshots in this document include images of third party assets from NatureManufacture to show how you can use CityGen3D's Vegetation Studio Pro Integration with other prefabs and textures.*

1. Introduction

Vegetation Studio Pro by Awesome Technologies is a vegetation placement and rendering system designed to replace the standard tree and detail system in the Unity terrain component.

This integration for CityGen3D allows you to automatically create biomes for your environment by simply defining how different CityGen3D map surfaces are matched up with different Vegetation Studio Pro biome types.

At the click of a button, Biome Masks are generated for you to cover your terrains with foliage based on the biomes inferred from the 2D map.

It all works with your existing Vegetation Packages and biomes you have already set up, whether they are custom biome definitions, or third-party biome packs from artists such as the Forest Environment package by NatureManufacture.

If you are new to Vegetation Studio Pro it is worth spending some time learning how to use it before attempting to use this integration with CityGen3D. This is because the CityGen3D integration is not intended to replace the Vegetation Studio Pro workflow, but work alongside it.

You will still want to be able to setup and modify your Vegetation Studio Pro biomes using that asset and all the options it provides to you. So you can think of the integration as just a bridge that links the two assets together.

Please ensure you have an up to date backup of your work before adding the integration into an existing project.
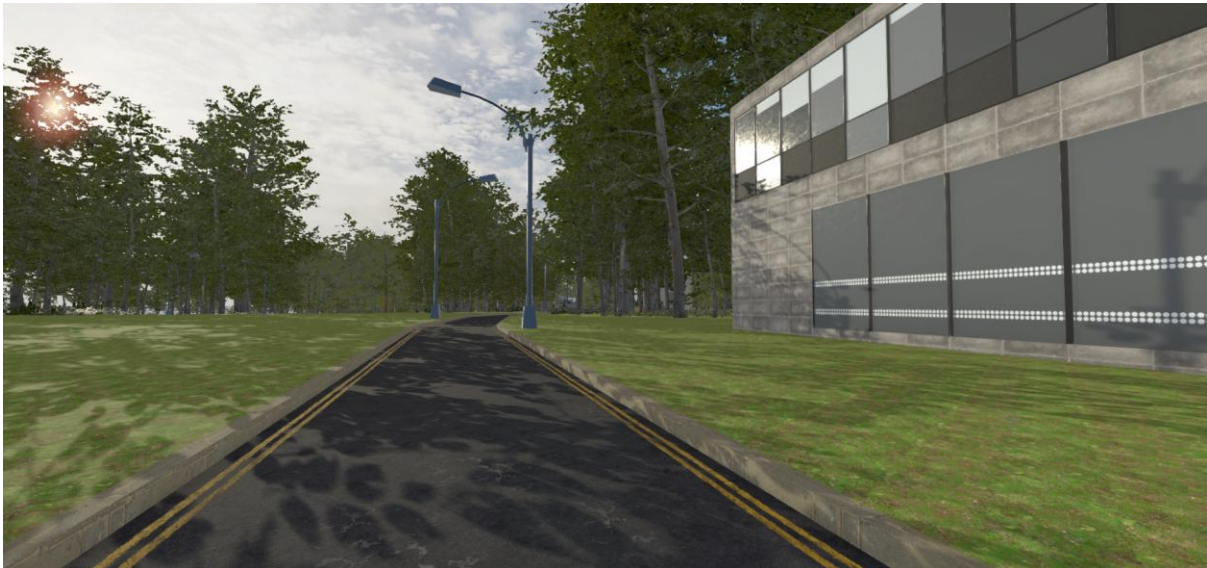
2. Installation

- Install CityGen3D and it's dependencies as normal (Burst, Editor Coroutines, and Post Processing for Built-In Pipeline).

- Install Vegetation Studio Pro with dependencies (Jobs, Collections) via the Package Manager. Remember to unhide Preview Packages in Package Manager if you can't find these additional packages. The Collections package should be installed when you install the Jobs package.
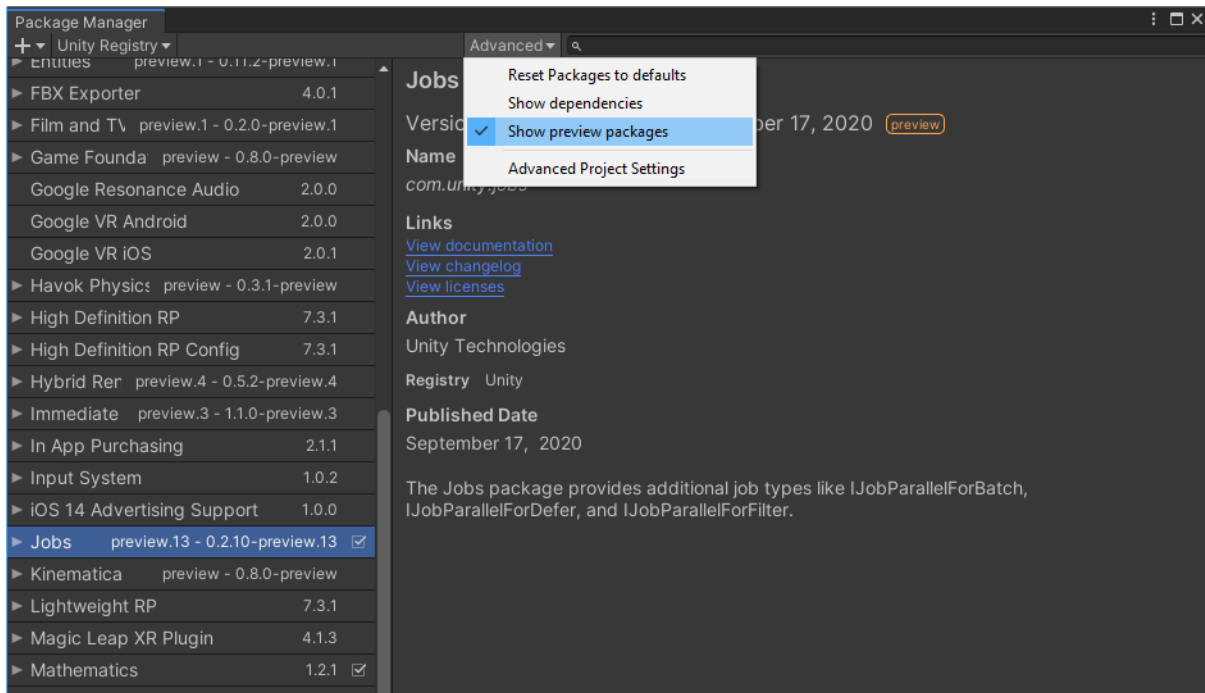
- Install the CityGen3D Vegetation Studio Pro Integration package via the menu bar in Unity.

Assets → Import Package → Custom Package...

Line Masks are automatically created along roads to prevent unwanted foliage from appearing on highways.

3. Quick Start

- Click New City scene (or New City HDRP / New City URP as appropriate) to start your CityGen3D environment, just as you would normally, or load an existing project.

- The Biomes integration expects to see both CityGen3D and Generator gameobjects in your scene. So if starting a new project you should work through the Location tab of the Data window in CityGen3D as normal to Download and Process your location and add a generator instance to your scene with the Load Generator button.

- Show the Biomes interface via the Unity menu (Tools -> CityGen3D -> Integrations -> Vegetation Studio Pro).

> Tools ⟩ CityGen3D ⟩ Integrations ⟩ Vegetation Studio Pro

Note that this adds a Biomes child object to your Generator, so you will be prompted to add a Generator to your scene if one isn't already there.

Clicking this menu item will also add a Vegetation Studio Pro prefab instance to your active scene if one isn't already present, which will contain sample biomes set up with the default CityGen3D foliage assets.

Experienced Vegetation Studio Pro users may prefer to add their own Vegetation Studio Pro instance having already set it up with their own biomes, or alternatively add a default template (Window -> Awesome Technologies -> Add Vegetation Studio Pro to scene) and set it up from scratch.

Either way, the integration won't attempt to add a Vegetation Studio Pro instance if one is already present.
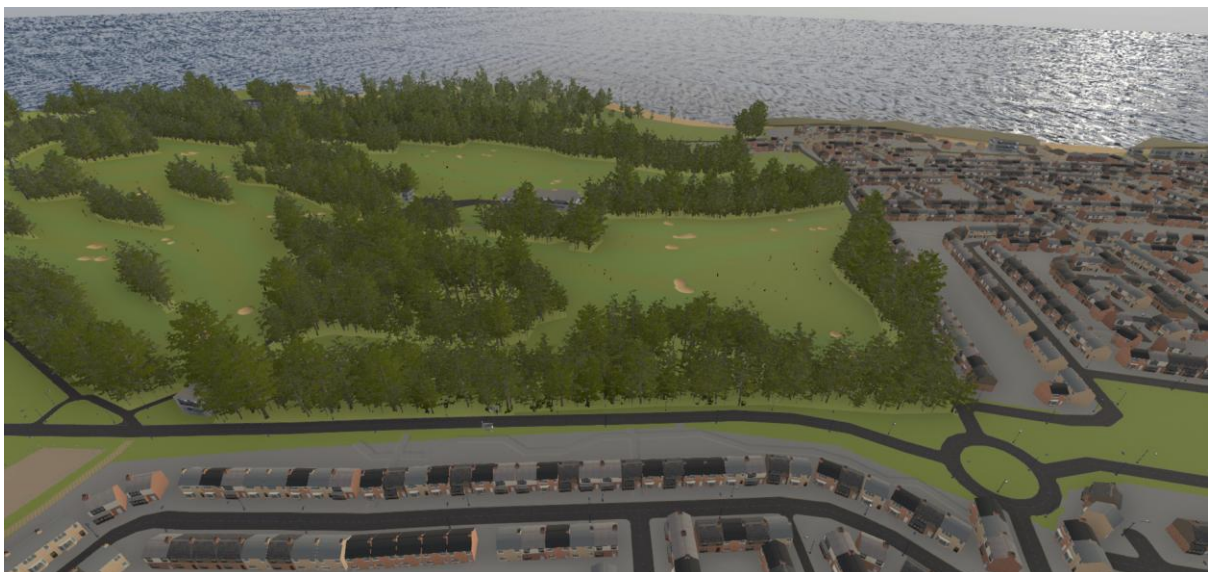
- Take a look at the new Biomes window that should now be visible on screen and dock it somewhere appropriate to your Editor layout.
  You can see how you can assign a CityGen3D surface type to a Vegetation Studio Pro biome using the listboxes.
  Clicking the [+] button adds a new rule, clicking the [x] button removes a rule, and you can reorder the rules as you see fit using the up/down arrow buttons.
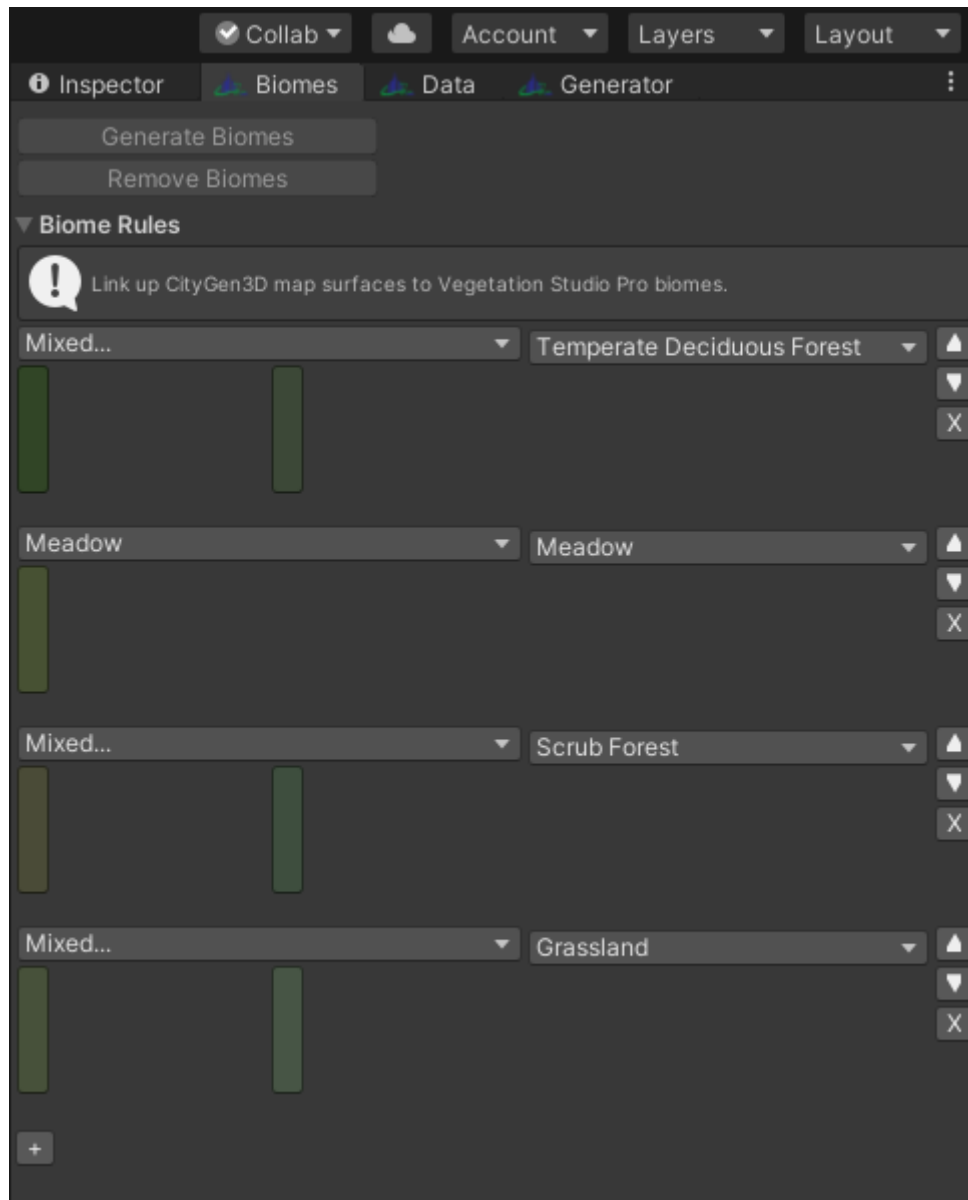
- Generate your CityGen3D scene as normal, using the Run Generator action or using the Generator window actions in turn.

- Click the Generate Biomes button via the Biomes window to automatically add biome masks to selected Landscapes. The biome masks will be child objects of the Biomes gameobject of the Generator.

4. Additional Information

- You should use normal Vegetation Studio Pro workflow to edit the VegetationSystemPro component on the VegetationStudioPro gameobject to assign Vegetation Packages to biome types via the Biomes button. Please see the Vegetation Studio Pro documentation for more information on how to create Vegetation Packages.

- Vegetation Studio Pro actions (Generate Biomes & Remove Biomes) are also available to schedule via the Generator Actions on the Location tab of the Data window for automatic creation when the Run Generator button is pressed. This allows you to easily integrate biome generation into your normal CityGen3D workflow should you be using the Run Generator system.
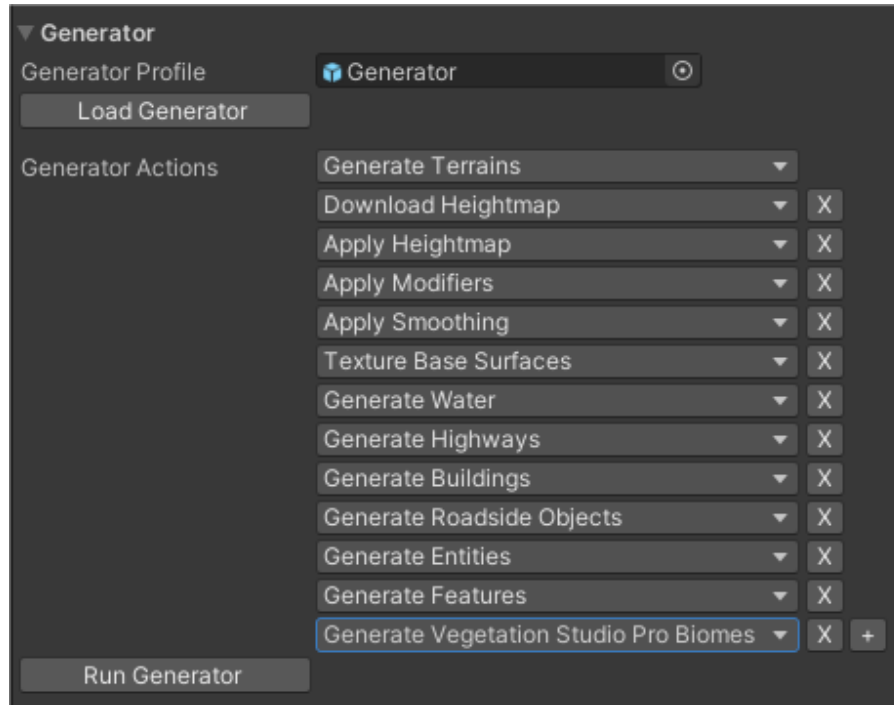

- Note that the integration scripts are open source so you can modify this core system to your needs. The code provides a useful example of how you can interface CityGen3D data with other assets via a custom Editor window.

5. Troubleshooting

If you don't get Vegetation Studio Pro foliage in your scenes, make sure your terrains are registered with the asset by clicking the Add All Unity Terrains button on the VegetationSystemPro component in Vegetation Studio Pro.
The Generate Biomes action in the integration will also attempt to do this for you.
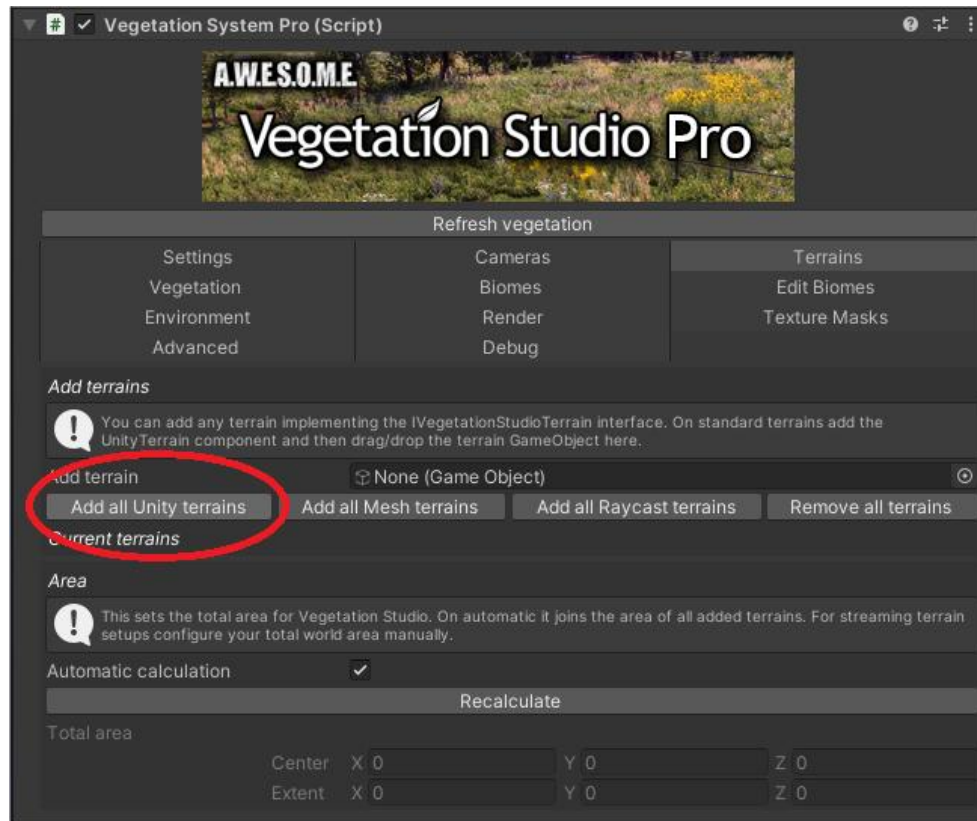
Please seek further support and give feedback in the Discord room for this integration here:
https://discord.gg/qzzzFNvW