

# Intro to V-Ray for Unreal QuickStart

This page provides a step-by-step introduction to V-Ray for Unreal.

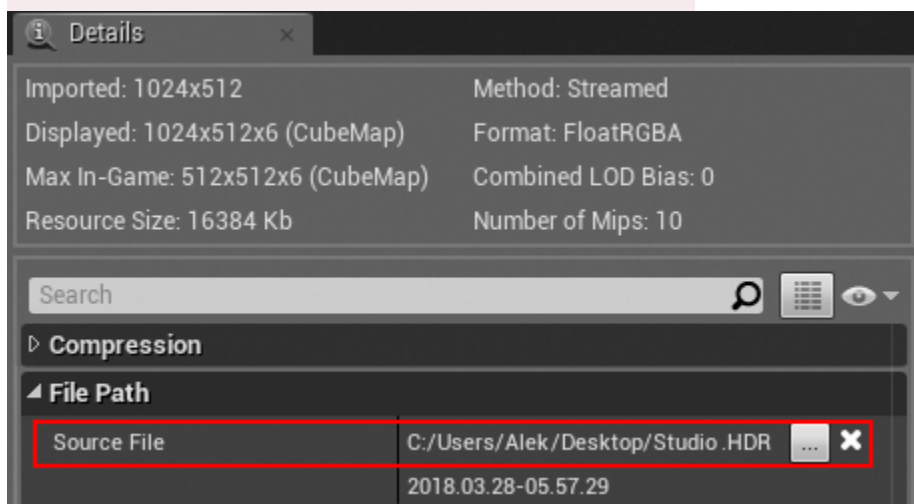
## Overview

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This tutorial covers the basic workflow for rendering a simple scene with V-Ray for Unreal. By the end of it, you will have a better understanding of V-Ray for Unreal and how to render your own scenes.

To follow this tutorial, you will need to have the [V-Ray for Unreal plugin installed](#). This page is to add a written version of the QuickStart video.

For your materials to work properly at render time make sure your textures have a valid file path (**Source File** in the texture **Details** panel). V-Ray loads the textures from that directory during rendering. If the textures are not found at the specified location they will not be loaded and will render with their assigned color.



## Tutorial Assets

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To download the files used in this tutorial, please click on the button below.

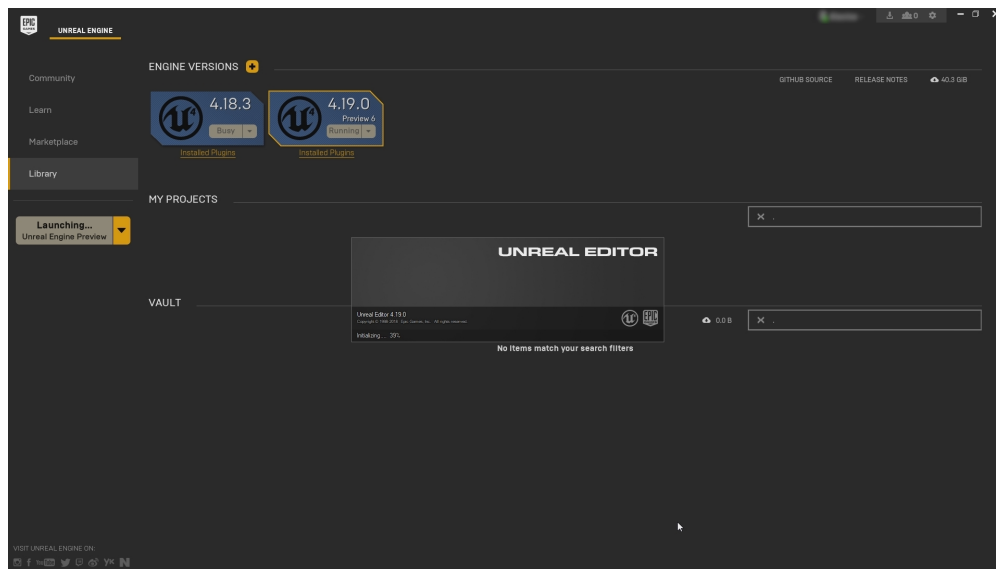


## Part I - Opening Unreal project and initial setup

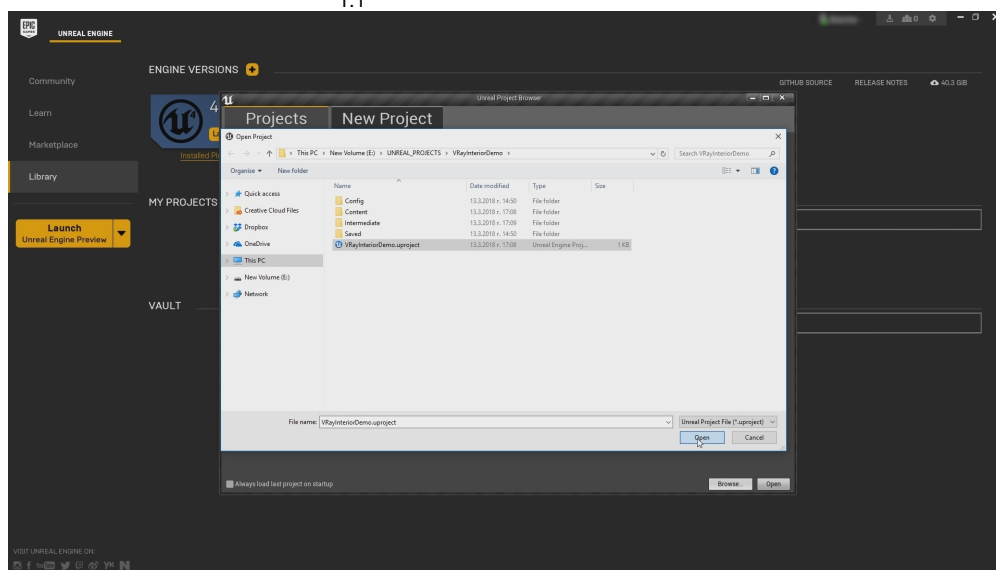
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### Step 1. Launch Unreal Engine 4

**Launch your version of Unreal from the Epic Games Launcher** (V-Ray currently supports versions 4.18.3 and 4.19) (1.1). Click the **Browse** button and navigate to the project you wish to open. In this case, the project is called **VRayInteriorDemo.uproject**. (1.2)



1.1

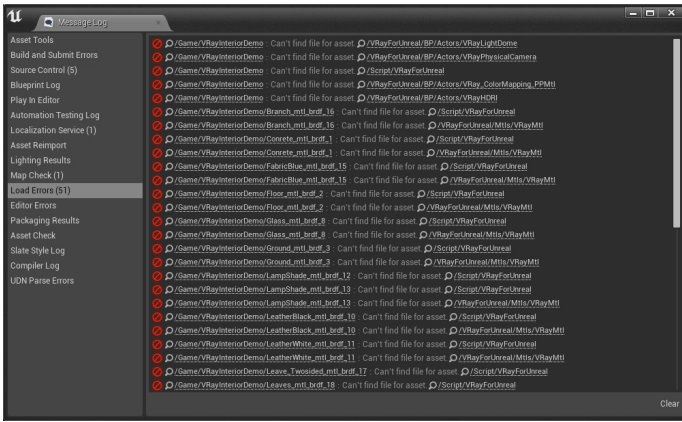


1.2

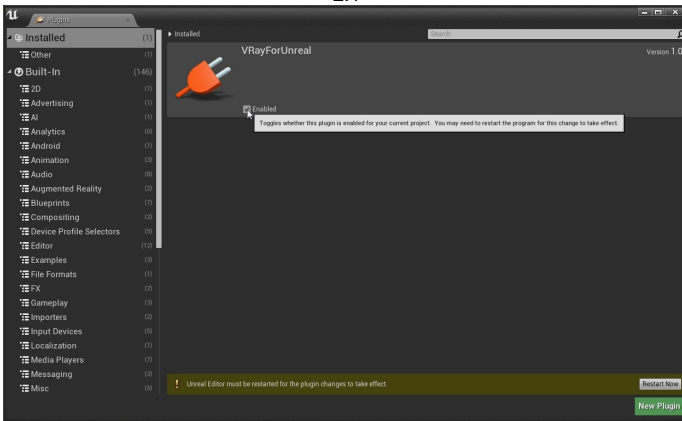
Be advised that when opening a project for the first time all materials have to be compiled by the Unreal editor (shader compiling message in bottom right hand corner of the screen). This means all materials will not look properly until all shader compilations are finished. This process is part of the standard workflow in Unreal Engine.

## Step 2. Enable The V-Ray Plugin

When you open a project created with V-Ray for Unreal and you get a warning message (2.1) that means that the V-Ray plugin is not enabled. From **Edit /Plugins** enable the **VRayForUnreal** plugin. You will need to restart Unreal for this to take effect. (2.2)



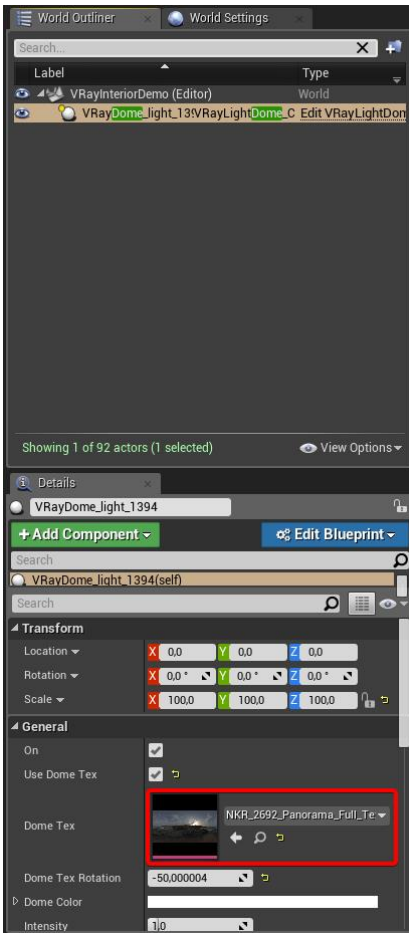
2.1



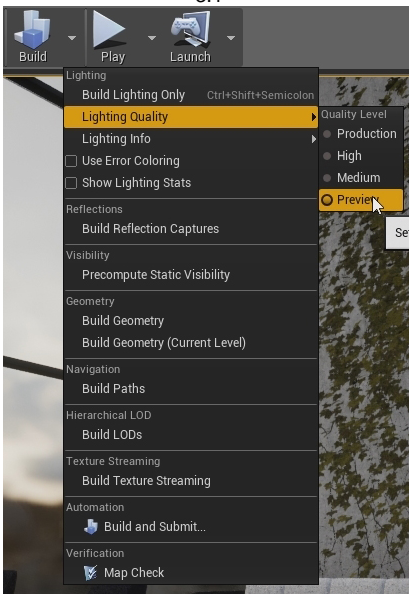
2.2

## Step 3. Test Light bake

After Unreal is restarted and the project opened, do a test light bake to get a feel of the lighting in the scene. The scene contains one **V-Ray Light Dome** with an HDRI image plugged into the **Dome Tex** slot (3.1). Make sure to be on **Preview** in the **Lighting** quality to speedup the baking process (3.2). To do a test light bake go to **Build options menu > Build Lighting Only** (3.3).

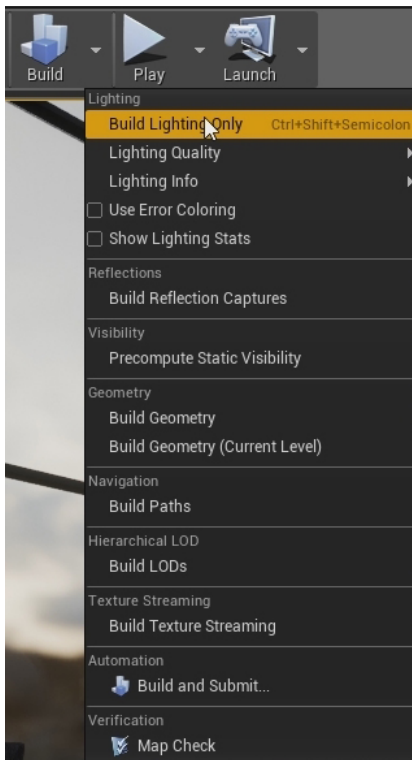


3.1



3.2





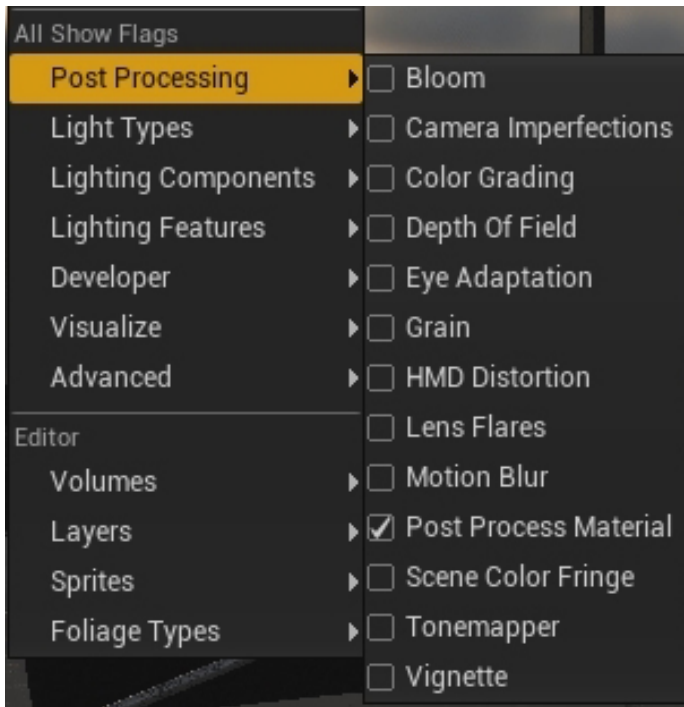
3.3

## Part II - Camera, materials and Lightmass settings

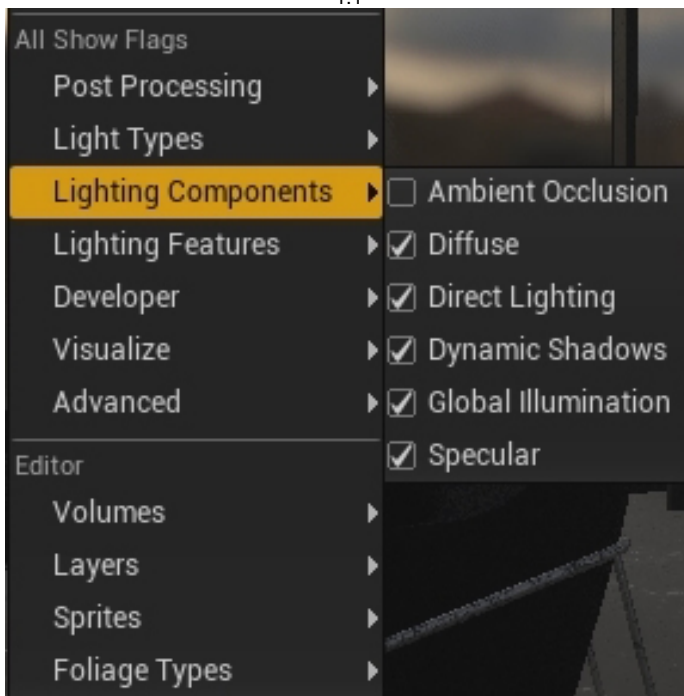
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### Step 1. Post Process Settings

In order to have maximum visual parity between viewport and final render you have to disable some of the Unreal postprocess and lighting components. You can do so from in viewport **Show > Post Processing** and leave only **Postprocess Material (1.1)** . From **Show > Lighting Component** uncheck **Ambient Occlusion (1.2)**.



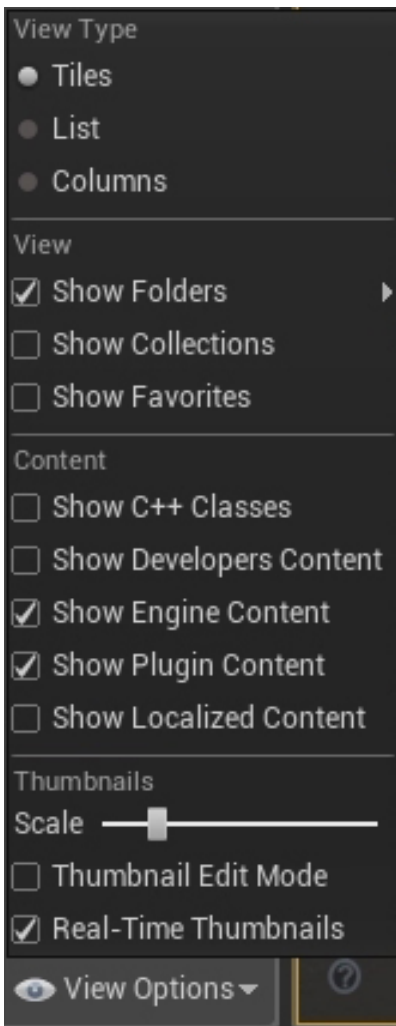
1.1



1.2

## Step 2. Enabling VRayPlugin in Content Browser

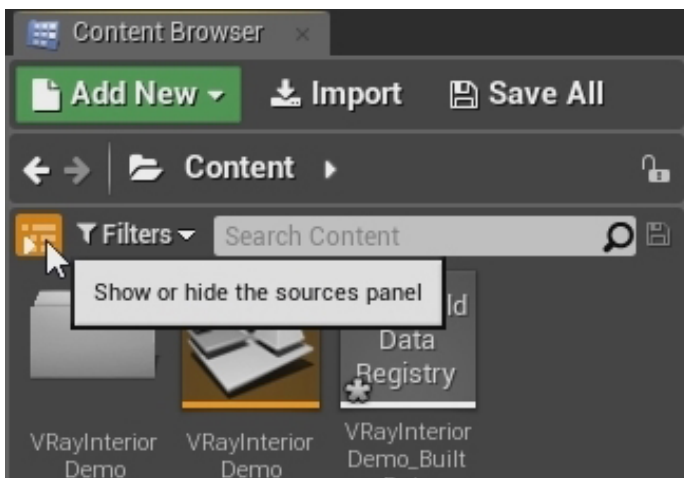
To create a V-Ray supported content such as lights and cameras you will have to enable its visibility in the **Content Browser**. Go to **View Options** and enable **Show Engine Content** and **Show Plugin Content** (2.1).



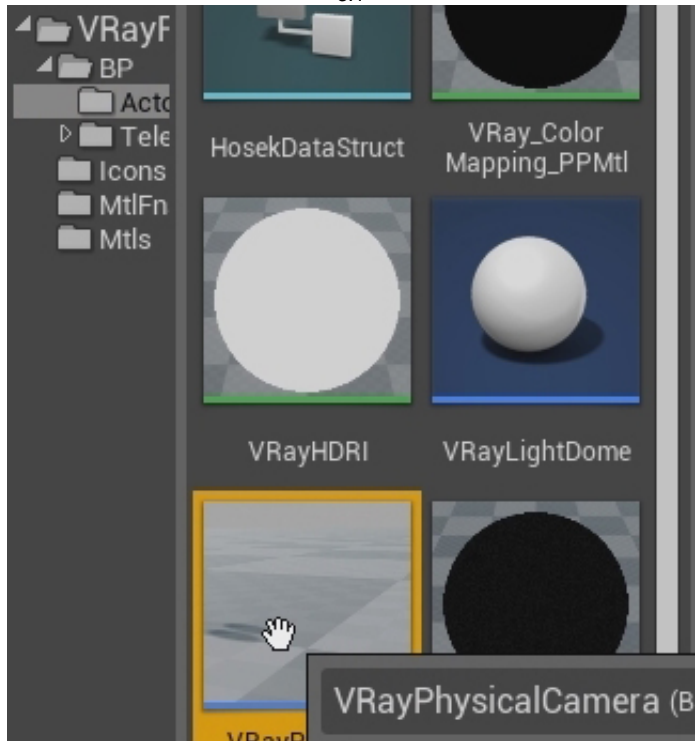
2.1

### Step 3. Set up Camera

Let's now create a camera. Click on the **Show or hide the source panel** button to see the tree structure of the **Content Browser** (3.1). From there go to **VRayForUnreal > Content > BP > Actors** and drag and drop in the viewport the **VRayPhysicalCamera** (3.2).



3.1



3.2

After you've placed the **VRayPhysicalCamera** in the level you can look through it by going to the **Viewport Types** and select **VRayPhysicalCamera** from the dropdown menu (3.3). After that you can position the camera by holding down the **Right Mouse Button** and using the **WASD** keys for translation and the mouse for rotation (3.4).

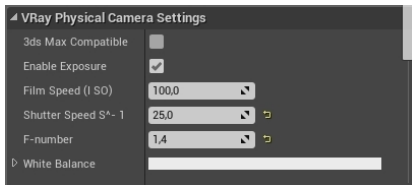


3.3

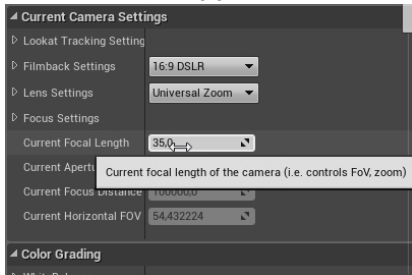


3.4

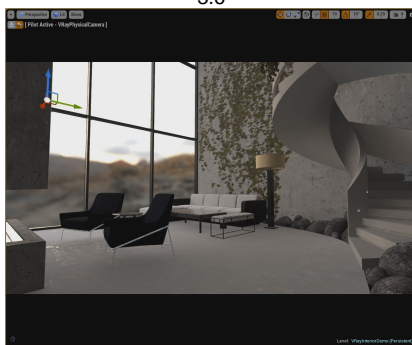
The view looks dark due to the fact that the camera's exposure is not set correctly for this lighting scenario. To change the exposure parameters select the **VRayPhysicalCamera** and go **VRayPhysical Camera Settings** category and adjust the **Shutter Speed=25** and **F-number=1.4** (3.5). Next adjust the **Current Focal Length** value by going to **Current Camera Settings** category to make the camera more panoramic. Set **Current Focal Length=20** (3.6). Then make any additional changes to the camera's position to make the final composition (3.7). For more details see documentation on [VRayPhysicalCamera](#).



3.5



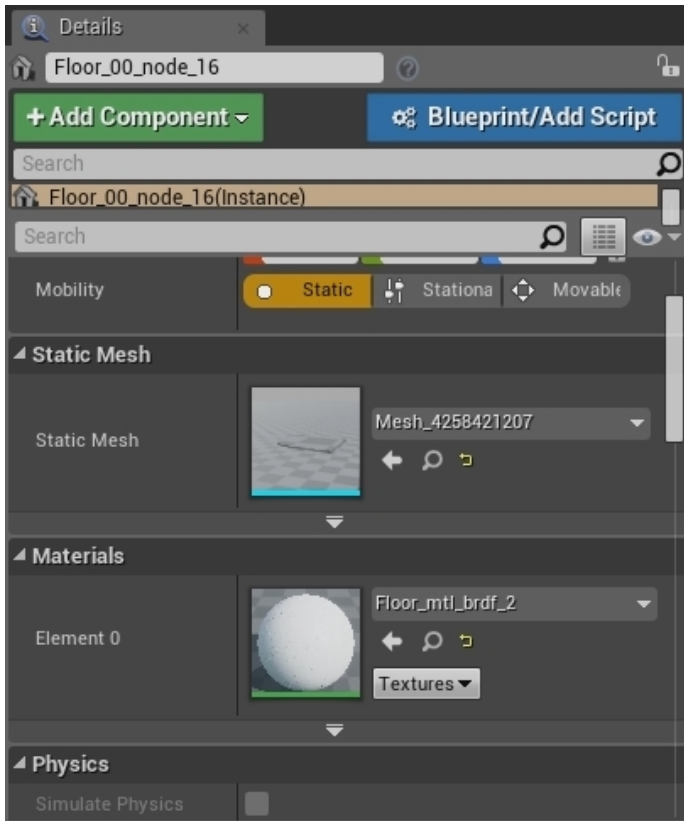
3.6



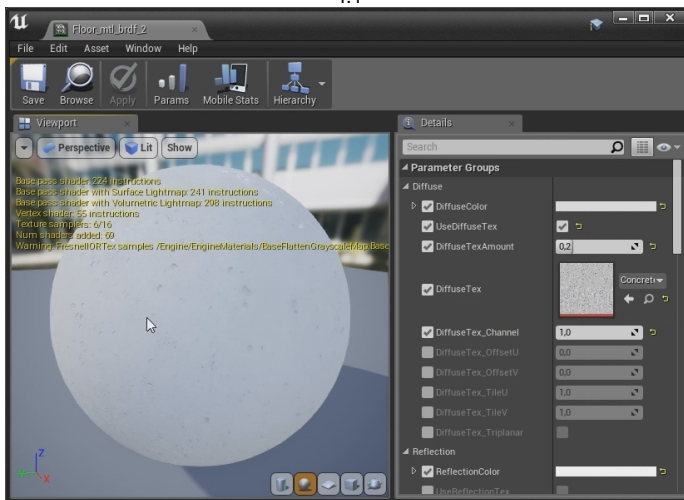
3.7

## Step 4. Adjust Materials

Let's now edit the materials. To edit materials you select the mesh whose material you wish to modify, go to the **Materials** category in the **Details panel** and double click the assigned material in the **Element** slot (4.1). A window appears with a preview of the material and a **Details** tab with all the parameters for the material (4.2).

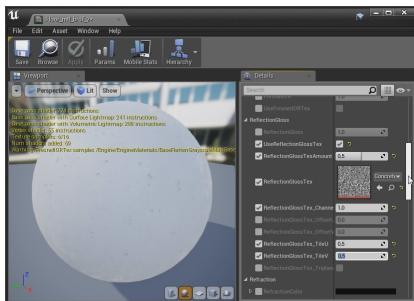


4.1

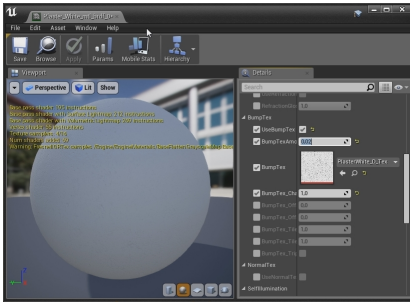


4.2

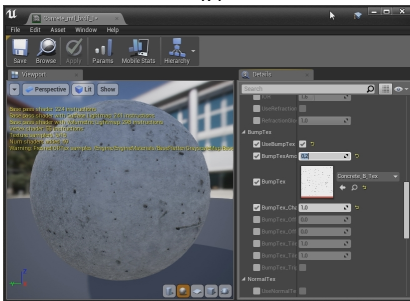
Make any changes to the material and you will see them update in the viewport. In this scenario we will be modifying the Floor (4.3), Plaster (4.4) and Concrete (4.5) materials. For more details see documentation on [Materials](#).



4.3



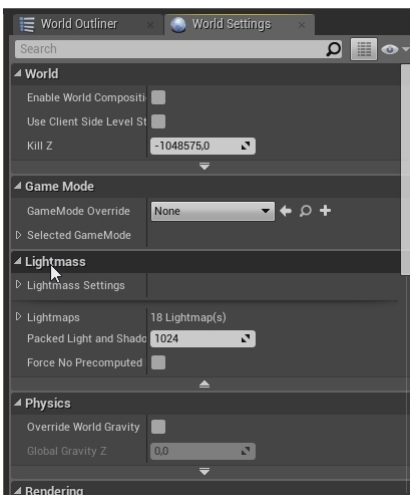
4.4



4.5

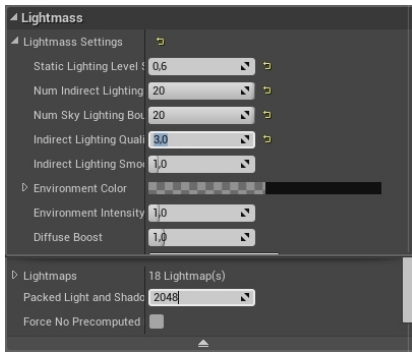
## Step 5. Increase Lightmass Settings

Let's now increase the Lightmass settings for a better lighting quality. Go to **World Settings** tab (Window>World Settings) and look for **Lightmass** category and open **Lightmass Settings** (5.1). We will increase the **Static Lighting Level Scale**=0.5; **Num Indirect Lighting Bounces** = 20; **Num Sky Lighting Bounces** = 20; **Indirect Lighting Quality** = 3. Also change the **Packed Light and Shadows Map Texture Size** = 2048 (5.2). For more information on what these parameters do see [Unreal's Lightmass documentation](#). Next increase the **Lighting Quality** to **High** and hit the **Build Lighting Only** button(5.3).

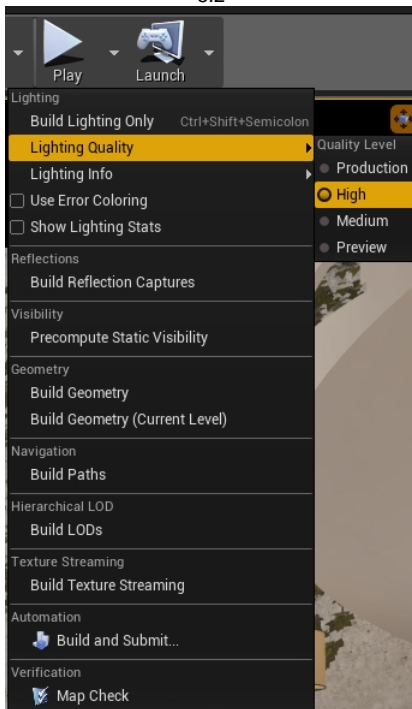


5.1



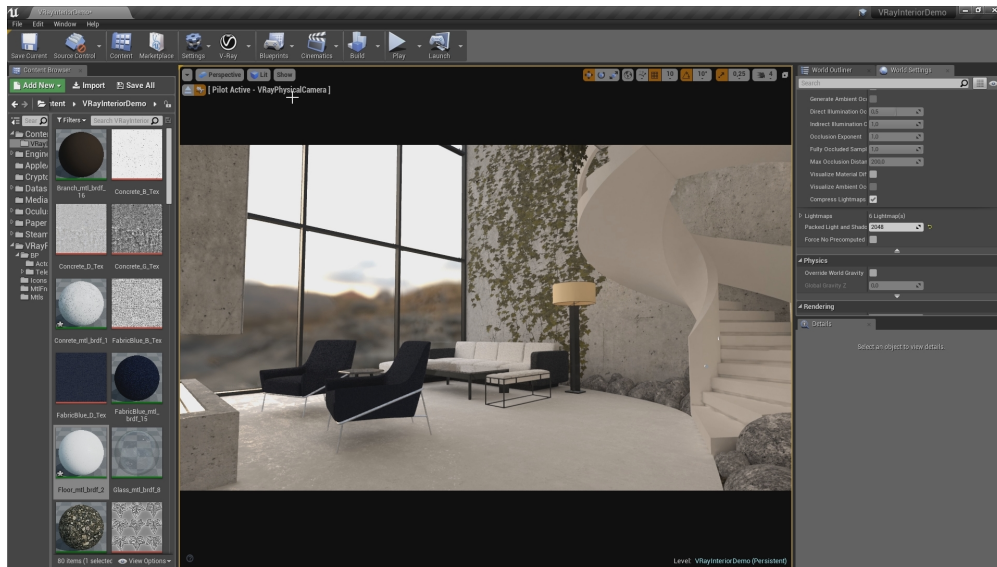


5.2



5.3

After a few minutes the final light bake is complete and we are ready for the final render (5.4).

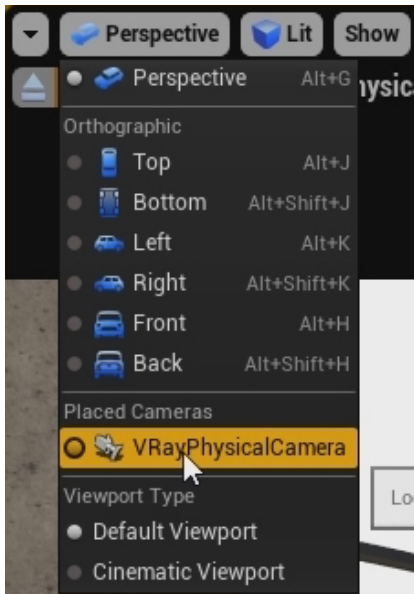


5.4

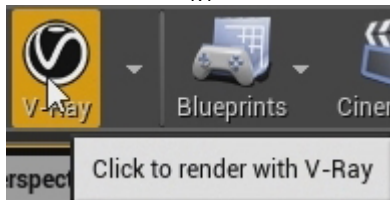
## Part III - Rendering the final image

### Step 1. Render Image

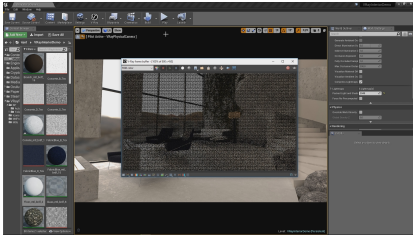
To render an image from Unreal using V-Ray make sure in the viewport you are looking from the camera (1.1) To render the image click the V-Ray button in the toolbar (1.2) (1.3).



1.1



1.2

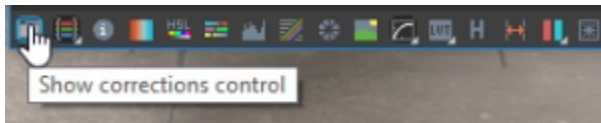


1.3

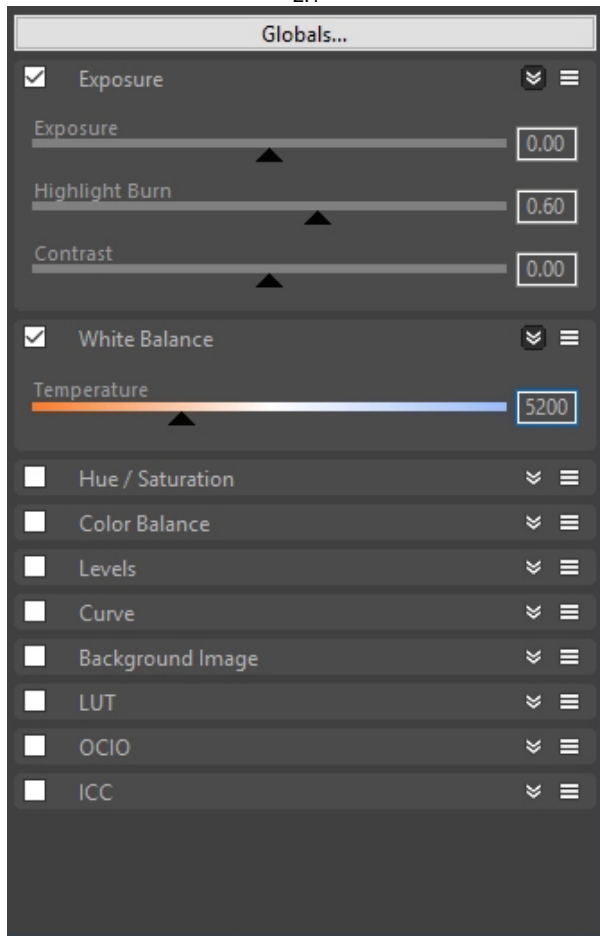
## Step 2. Refine the Render inside the VFB

As you can see the render begins filling in over time. Once we get past the earlier passes, we can fine tune the render without the need for external photo editing applications while the render continues to a cleaner and cleaner result.

In the VFB, open up the **Show Corrections Control** panel by clicking on the icon at the bottom right of the window (2.1). Here you'll be able to fine-tune the render by turning on and manipulating the parameters. Tune down the Highlight Burn in the Exposure tab. Adjust the White Balance to turn down the warmth in the image (2.2). For more details see documentation on [V-Ray Frame Buffer](#).



2.1



2.2

Check the final result with and without to see the difference (2.3).

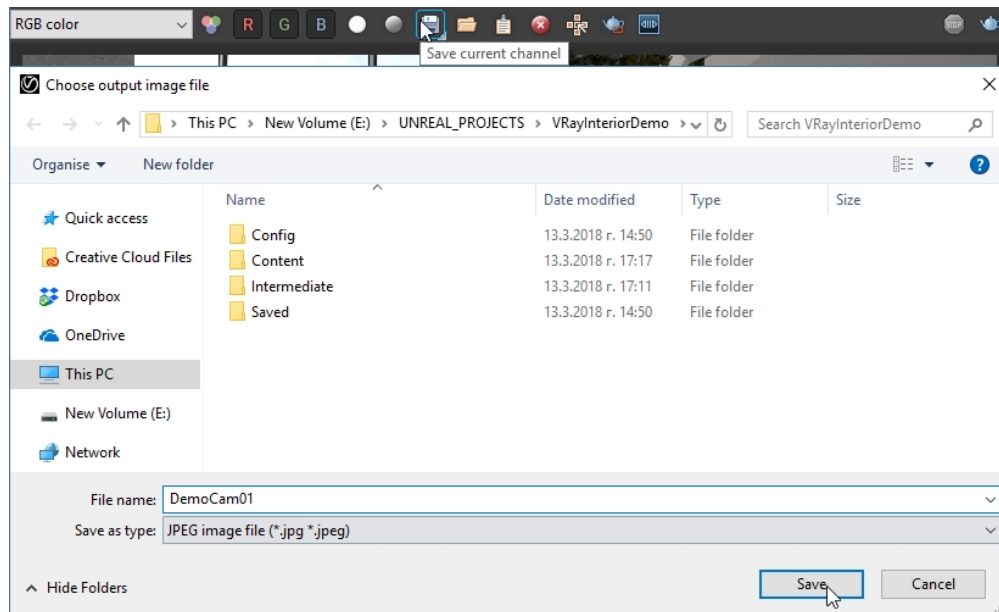
Raw  
Corrected



2.3

### Step 3. Save the Render

Now that the render's done, from the VFB by click the **Save** button and select any of these image formats. We'll select JPG here.



3.1

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