

'2023 A' PRODUCTION: TECHNICAL SPECIFICATION

vrbn studios; January 2024

GENERAL TECHNICAL SPECIFICATION

GENERAL

- Our Swiss Made buildings and assets provide simple, drag-and-drop, high quality architectural models for use in large urban environments.
- Our buildings and assets are made to be consistent and compatible with each other.
- Content ships as native file formats per platform (per tool).

MAIN FEATURES

- Consistent and detailed realism
- Full PBR
- Parallax occlusion interiors
- Our assets and buildings are made for direct use in games, XR, VFX, Simulation.

MODEL SPECIFICATION

- File format: Tool native (Unity, Unreal etc.)
- Production units: [cm]
- Production geo. coord. system: Left-handed (DirectX), yUp
- LODs: 1 for offline rendering, 4 for real-time rendering (5 total)

MATERIAL & TEXTURE SPECIFICATION

- Textures: PBR: metal / roughness; up to 8k/atlasses; optimized
- Channels: albedo, emission, metal, roughness, normal, opacity, alpha, geometry-AO, material-AO, dirt
- Texel density: ~400 tx/m for offline rendering, ~200 tx/m for real-time rendering
- Game Engines: Merged grayscale textures into RGBA TGA.
- Normals: Tangent space, left handed (DirectX)
- File format: TIF / TGA / PNG, 8bit, RGB, RGBA
- Interpreted color space: sRGB: albedo/emission. Linear: metal, roughness, normal, opacity, alpha, geometry-AO, material-AO
- vrbn studios based naming convention

QUALITY

- All our 3D content is manually tested. If you find anything out of order or you have questions, please contact us*.

DEMO CONTENT

- For demo content, please check our free content bundles on the shop or contact us*.

FURTHER

- Plants, cars, 3D people, the environment system, turntables and image effects in our marketing materials are for demonstration / visualization / documentation purposes only and are not part of our delivery.
- For feedback or suggestions for additional asset or building types, please contact us*.
- For questions about older format versions / compatibility or needed support for integrations in custom game engines or renderers, please contact us*.

PLATFORM SPECIFIC DETAILS

UNREAL ENGINE FEATURES

- Supported Unreal versions: 4.27.2+, 5.3.x (5.1 and 5.2 upon request)
- Supported rendering paths: Deferred and Forward
- Unreal 4.27.2+ Ray tracing is not supported.
- Each building consists of 4 optimized LOD meshes, incl. setup.
- The buildings ship with a functional, custom-made collision mesh.
- Materials are instanced for better performance.
- Draw call optimized by using texture atlases.
- Building Blueprint location: Content/vrbn_studios/<production_name>/<country>/Buildings/Blueprints
- Asset Blueprint location: Content/vrbn_studios/<production_name>/<country>/Assets/Blueprints
- Dirt intensity: If you bought the dirt option for your buildings then there is a dirt slider inside the building's blueprint that allows you to alter the dirt intensity in real-time. Each building instance will have its own dirt slider, meaning you can adjust each building with different dirt values.
- Emission intensity: Inside the buildings or assets blueprint there is an emission intensity value that allows you to alter the emission intensity in real-time. Each building or asset instance will have its own emission intensity value, meaning you can adjust each building or asset with different emission values.
- Interior mapping: If you bought the interior mapping option for your buildings then there is an interior mapping toggle inside the building's blueprint with which you can enable/disable the parallax occlusion effect in real-time. Each building instance will have its own interior mapping toggle, meaning you can have this feature in some buildings but not in others.
- Unreal 5.x+: Nanites for our assets and buildings is disabled by default. You can however enable it if you so desire. To do so go to Content/vrbn_studios/<production_name>/<country>/<Buildings or Assets>/<building or asset name>/Meshes and select all the meshes for which you wish to enable nanites, right click on one of the selected meshes, in the pop-up menu select 'Nanite' and then click 'Enable Nanite'.
- Some of our meshes have materials assigned that use blend mode Translucent, thus enabling Nanites for those meshes won't have any effect, as this blend mode is not yet supported by Nanites.

- Unreal 5.x+: To get higher quality reflections in the windows, open the project settings and set the GBuffer format to High Precision Normals.
- Unreal 5.x+: We recommend using DirectX 12 and Shader Model 6

UNITY 3D FEATURES

- Supported Unity Versions: 2021.1.9f1 to 2022.3.0.f1
- Supported render pipelines: URP and HDRP
- Supported rendering paths: Deferred and Forward
- Ray tracing is currently not supported. We're working on it.
- Each building consists of 4 optimized LOD meshes, incl. setup.
- The buildings ship with a functional, custom-made collision mesh.
- Draw call optimized by using texture atlases.
- Building Prefab location: Assets/vrbn_studios/<production_name>/<country>/buildings/prefabs
- Asset Prefab location: Assets/vrbn_studios/<production_name>/<country>/assets/prefabs
- Dirt intensity: If you bought the dirt option for your buildings then there is a dirt slider on the building's prefab that allows you to alter the dirt intensity in real-time. At runtime each building instance will have its own dirt slider, meaning you can adjust each building with different dirt values.
- Emission intensity: On the buildings or assets prefab there is an emission intensity float that allows you to alter the emission intensity in real-time. At runtime each building or asset instance will have its own emission intensity float, meaning you can adjust each building or asset with different emission values.
- Interior mapping: If you bought the interior mapping option for your buildings then there is an interior mapping toggle on the building's prefab with which you can enable/disable the parallax occlusion effect in real-time. At runtime each building instance will have its own interior mapping toggle, meaning you can have this feature in some buildings but not in others.
- In deferred rendering the glass normals might have small compression artefacts. See info here:
[Forward and Deferred rendering | High Definition RP | 16.0.1 \(unity3d.com\)](#)
[Deferred Rendering Path in URP | Universal RP | 16.0.1 \(unity3d.com\)](#)

BLENDER FEATURES

- Supported Blender version: 3.6.4+, 4.0+
- Supported renderer for buildings with interior mapping: Cycles CPU (with OSL enabled)
- Supported renderer for buildings without interior mapping: Cycles CPU/GPU
- Supported renderer for assets: Cycles CPU/GPU
- All textures are located in the subfolder "vrbn_textures" inside the folder containing the blender scene file.
- The compiled OSL (if interior mapping version is available) is in the subfolder "OSL" inside the folder containing the blender scene file.
- Dirt Intensity: If you bought the dirt option for your buildings then there is a dirt intensity slider in the custom properties of the object properties panel

for each building that allows you to alter the dirt intensity. To reach the slider click on the appropriate building name in the scene collection and navigate to the object properties panel. From there, you can adjust the dirt slider located in the custom properties. Each building has its own dirt slider, meaning you can adjust each building with different dirt values.

- Emission Intensity: You can adjust the emission intensity for all emissive materials by clicking on the building or asset name in the scene collection and navigate to object properties panel. From there, if there are materials that are emissive, you can set the emission values of the material in the custom properties. The emission handle will have the name "Emission_material_name" where "material_name" is the full name of the emissive material. Each building or asset has its own set of emissive material value handles meaning you can adjust the emission for each building or asset with different values.

***) CONTACT**

- General inquiries: studios@vrbn.io (24 hours reaction time, Mo-Fr)
- Technical support: support@vrbn.io (24 hours reaction time, Mo-Fr)