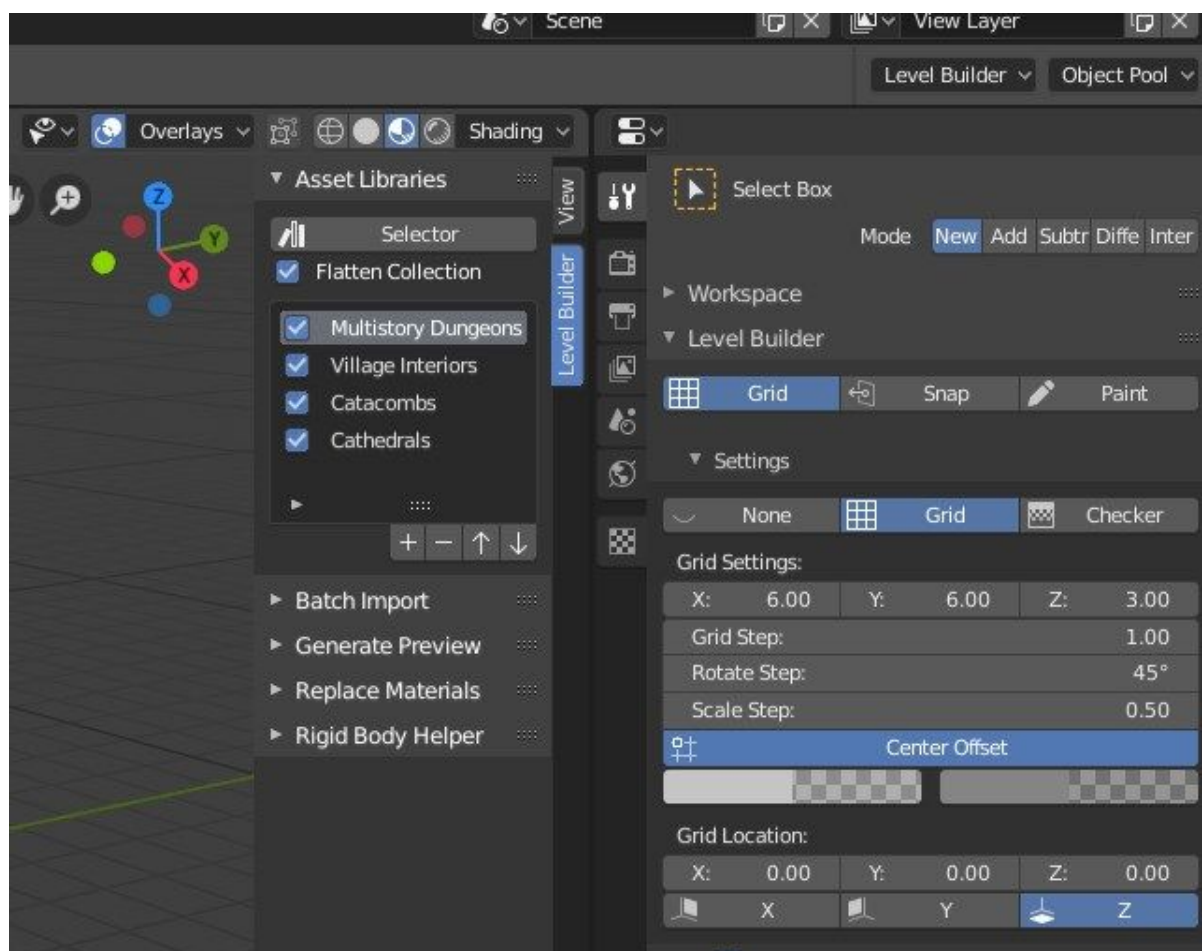# Install

To install the Level Builder, you can do this by going to File > User Preferences > Add-ons > Install from File then choose the level_builder.zip. (No need to unpack it)


After install and enable the addon, a new "Level Builder" tab is added to N-panel in 3D view, and a new "Level Builder" panel is added to "Active Tool" tab in Properties.

You can use the +/- button to add / remove blend file to the libraries list. Press the Selector button to open the asset selector. You can also use default hotkey Shift + Enter.

Batch Import

You can batch import all assets (fbx, obj, 3ds, blend) in a folder with "Batch Import" panel. All subfolders is also imported to sub collections.
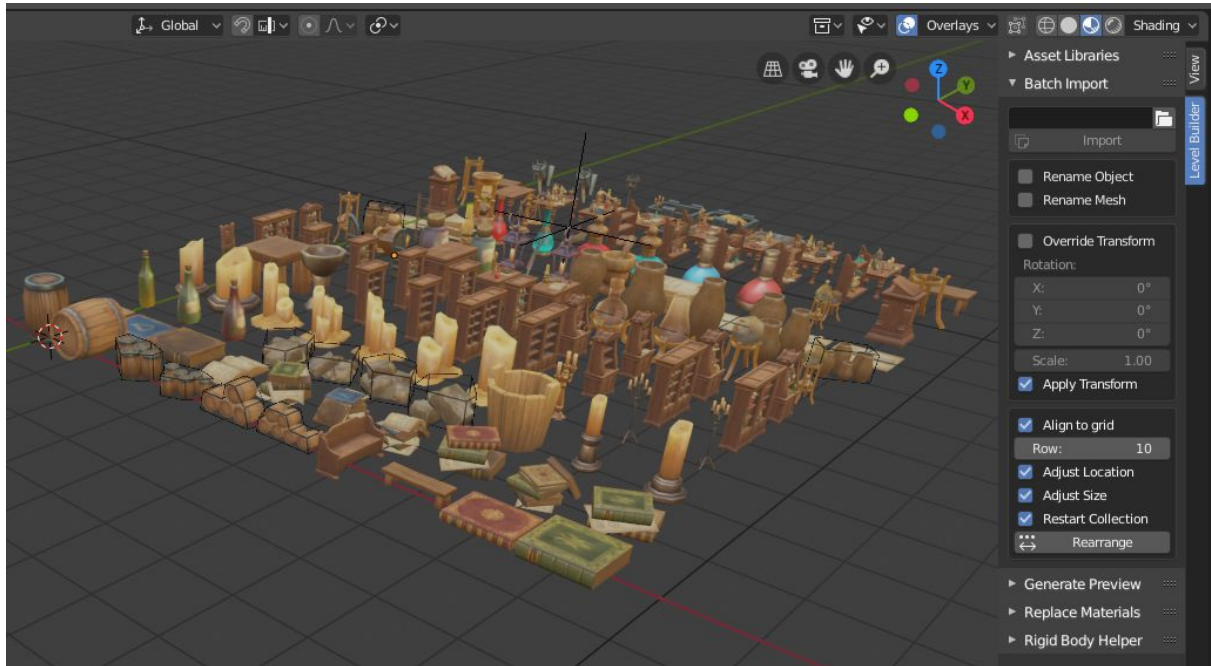
Rename Object	Rename the object with the file name.
Rename Mesh	Rename the mesh data with the object name.
Override Transform	Change the rotation and scale after import.
Apply Transform	Apply rotation and scale after import.
Align to grid	Align each asset row by row and column by column.
Row	Asset number for each column.
Adjust Location	Place the asset using bounds center.
Adjust Size	Resize the asset to fit one unit cube.
Restart Collection	Restart on each collection.
Rearrange	Rearrange exist assets in active collection.

Generate Preview

To has preview in asset selector, you need to generate preview in the blend library. The image is saved with the same name as the object and packed in blend file.

| PNG / JPG	The image file format.
Size	The size of image.
Use scene world	Use the world in current scene; otherwise, a simple world with single color is used.
Use Alpha	Save with alpha in image.

Replace Materials

Help you batch replace materials assigned to objects. Select the material you want to replace to. Enter pattern (Regex) of materials name to replace with. All materials name match the pattern is replaced to the selected material.

Rigid Body Helper

Help you to create the rigid body proxy objects and settings. Most game assets pivot point is not in the center, and may contain children objects. Using that object with physics has wield result. "Rigid Body Helper" creates a proxy object join with all children and set the origin to center of mass. After simulation, the proxy data is transferred back to original objects.

Asset Selector

Asset Selector allows you to select asset and place the asset to the scene. Only objects without parent is shown in selector, all children of object is grouped as a single asset. The image with the same name as the object is shown as preview.
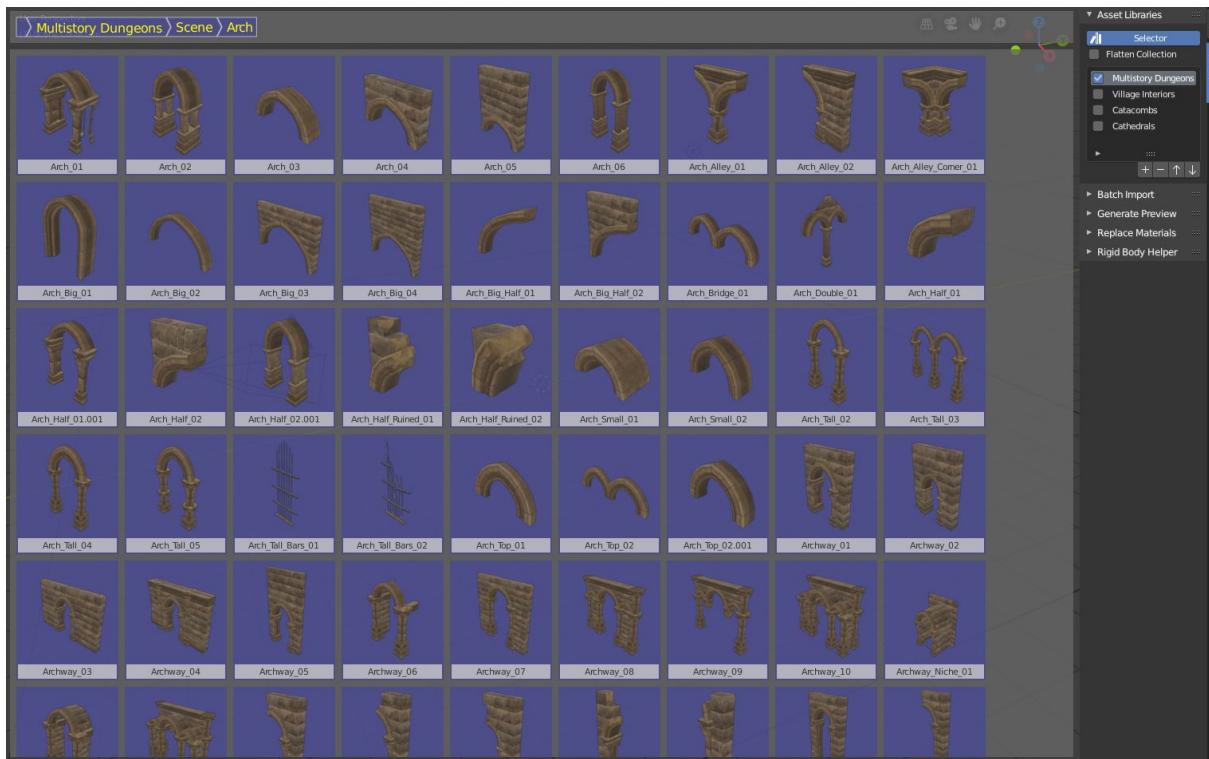
| Flattened Collection	Show all collections and sub collections together.

Flattened Collection Off

Flattened Collection On

Click	Select the asset and enter placement mode.
Shift + Click	Select multiple assets.
Shift + Mouse Wheel	Scroll up / down faster.
Ctrl + Mouse Wheel	Increase / decrease preview size.

Grid Mode

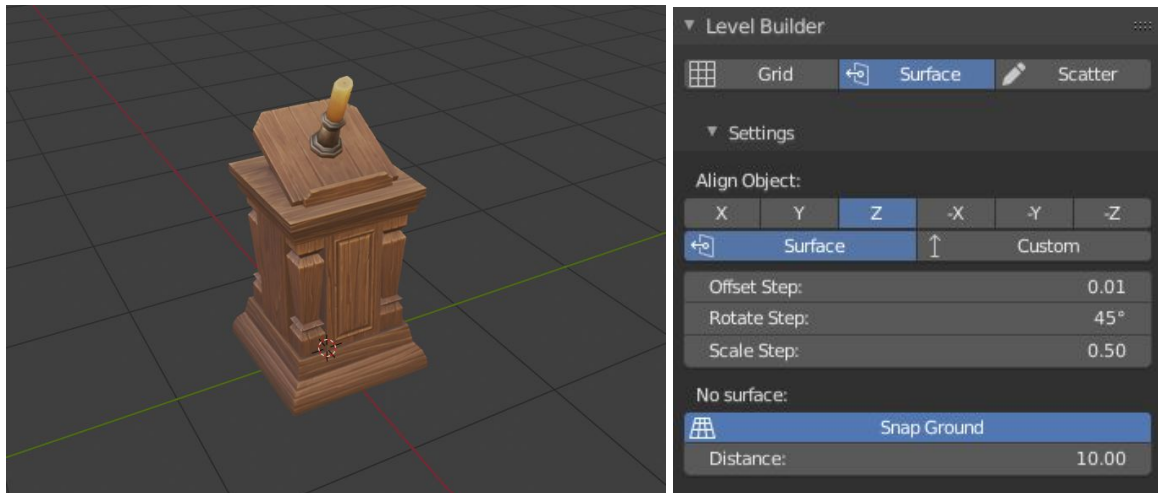Place the asset using grid snapping. Press 1 to activate.
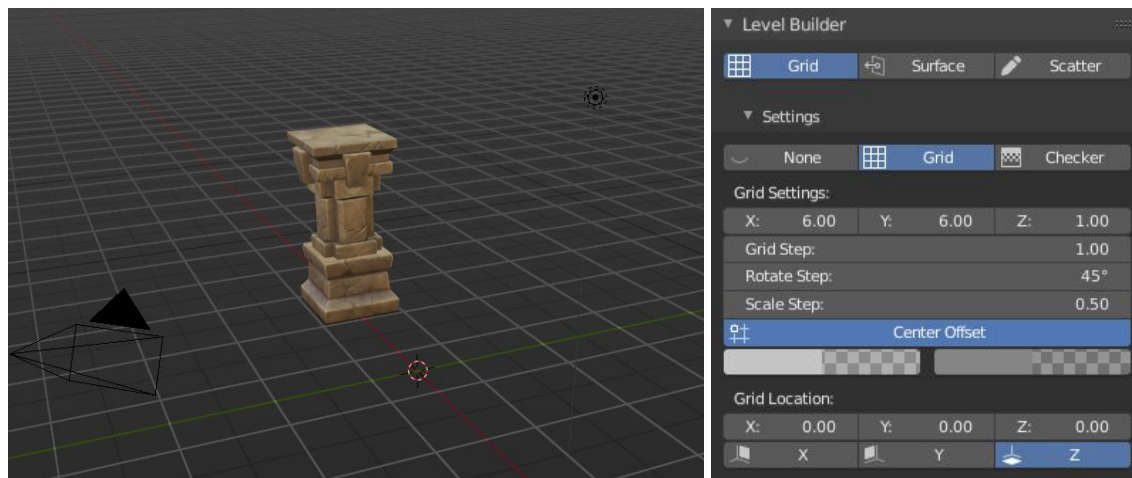
Grid Step	The step to change the grid size when using hotkey.
Rotate Step	The step to rotate the object when using hotkey.
Scale Step	The step to scale the object when using hotkey.
Center Offset	Add half size offset to grid.
Grid Location	The grid plane origin location.
Grid Orientation	The grid plane normal direction.

X / Y / Z	Select the grid orientation.
Up / Down	Move the origin location of grid plane.
Left / Right	Rotate the object with rotate step. Hold Shift / Ctrl to rotate on other two axis.
Insert / Delete	Scale the object with scale step.
Numpad + / -	Change the grid size with grid step. Hold Shift / Ctrl / Alt to change X / Y / Z axis only.
Shift	Hold Shift and move mouse to fill object within the grid area.
Ctrl	Hold Ctrl to place object at half offset.

Surface Mode

Place the asset using surface snapping. Press 2 to activate.

Align Object	Select how the object align to the target. Align object local direction to target normal or custom direction.
Offset Step	The step to change offset when using hotkey.
Rotate Step	The step to rotate the object when using hotkey.
Scale Step	The step to scale the object when using hotkey.
Snap Ground	Snap to ground if no surface detected.
Distance	The distance to place object if no surface and ground detected.

X / Y / Z	Select the object align vector. Hold Shift to use -X / -Y / -Z
Up / Down	Change the offset with offset step.
Left / Right	Rotate the object with rotate step.
Insert / Delete	Scale the object with scale step.
Shift	Hold Shift and move mouse to change offset.
Alt	Hold Alt and move mouse to rotate object.
Ctrl	Hold Ctrl and move mouse to scale object.

Scatter Mode

Place the asset using scatter mode. Press 3 to activate.
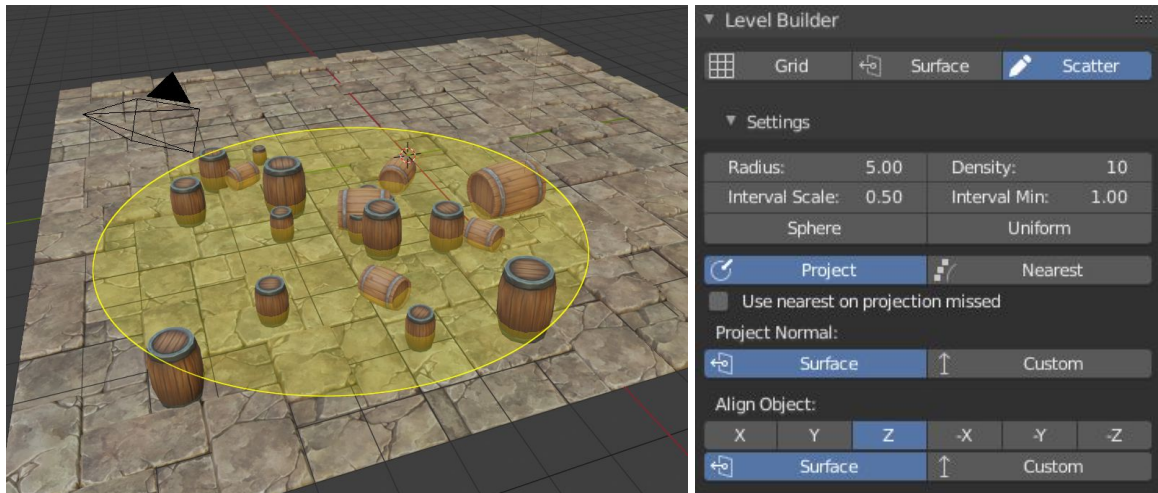
Radius	The radius to scatter objects.
Density	The number of object to scatter.
Interval Scale	The ratio of radius that the minimum distance to scatter new objects.
Interval Min	The minimum distance to scatter new objects.
Sphere	Spawn objects in sphere before projection, otherwise in circle.
Uniform	Spawn objects uniformly.
Project	Scatter objects using projection.
Nearest	Scatter objects on nearest surface.
Project Normal	The projection direction when using project method.
Align Object	Select how the object align to the target. Align object local direction to target normal or custom direction.

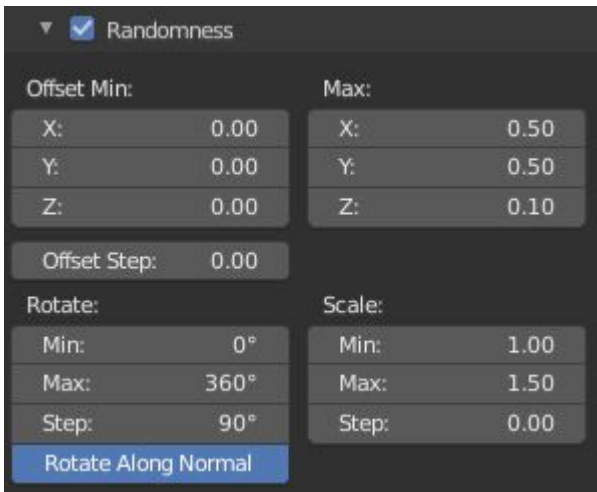| Mouse Wheel	Change the radius.
Shift + Wheel	Change the density.
X / Y / Z	Select the object align vector. Hold Shift to use -X / -Y / -Z
S	Toggle sphere.
U	Toggle uniform.

Object Pool

All selected objects are shown in object pool.
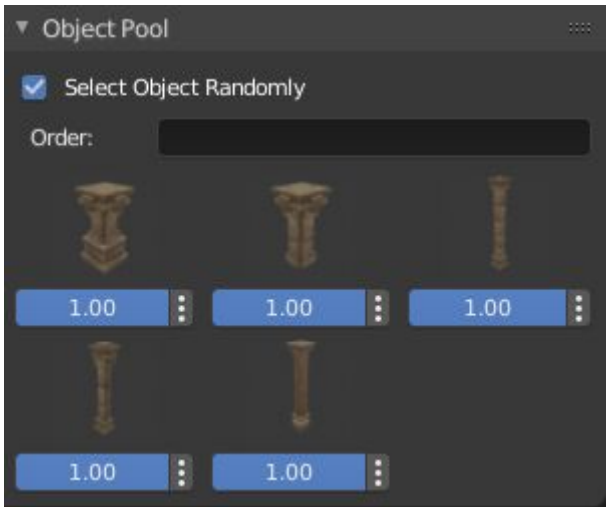
Select Object Randomly	Spawn object randomly or sequentially.
Order	Custom order when using sequential, fill with the index with comma. You can use -1 to skip one step.
Slider	The weight of the object when choose randomly.
Three Dots	Press it to override object randomness.

Randomness

There are three randomness settings for grid mode, surface mode and scatter mode.

Global Hotkeys

Enter / Left Click	Place object.
Esc / Right Click	Exit Level Builder.
Space	Reselect object.
R	Reset offset / rotation / scale.
N	Use new randomness to spawn objects.
Mouse Wheel	Reselect object randomly or next object for sequential.
P	Hold P to select custom pivot point. Alt P to restore original pivot point. Shift P to apply custom pivot point to all object pool objects.
\	Hold \ to suspend Level Builder ui. You can change camera location and angle.

Custom Pivot Point

When selecting custom pivot point, you can use mouse wheel to change different selection mode. 1) edge / face center of the bounds. 2) project original pivot point to bounds. 3) same as 1 but exclude (0,0,0) in bounds. 4) same as 2 but exclude (0,0,0) in bounds.