

Modular Wall Tool Manual

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Preparing your prefabs

To use this tool, I encourage you to prepare prefabs appropriately so that this tool can be used correctly. There are example prefabs included in the asset package which is the [Low Poly Pack - Environment Lite by Solum Night](#), in case you'd want to try the tool straight away. The inclusion of this asset also allows me to showcase what you can do if you already have made your prefabs prior to using this tool or if your prefabs need to be created a specific way.

What is a prefab?

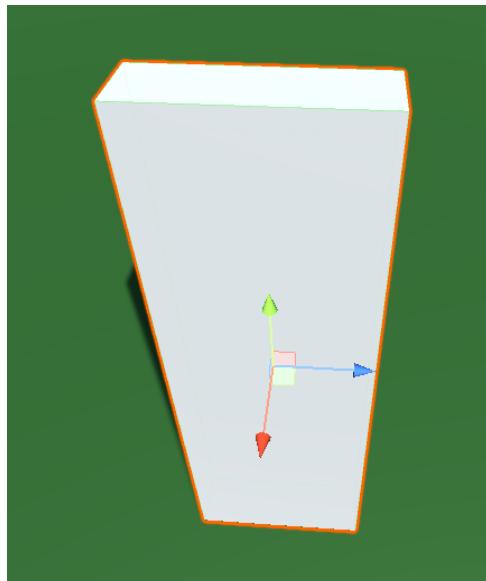
Prefabs are a special type of component that allows fully configured GameObjects to be saved in the Project for reuse. These assets can then be shared between scenes, or even other projects without having to be configured again. -Unity Learn

How to make a prefab?

Simply by dragging your gameObject from the hierarchy into the project window, or, by importing 3D objects into unity.

How Modular Wall tool assume your prefab set up

The tool assumes that the side faces the z-axis, and that the local pivot is in the center of the object. If your prefab is set up differently, don't fret, there is a troubleshooting page to work around it.



In unity, it will be:

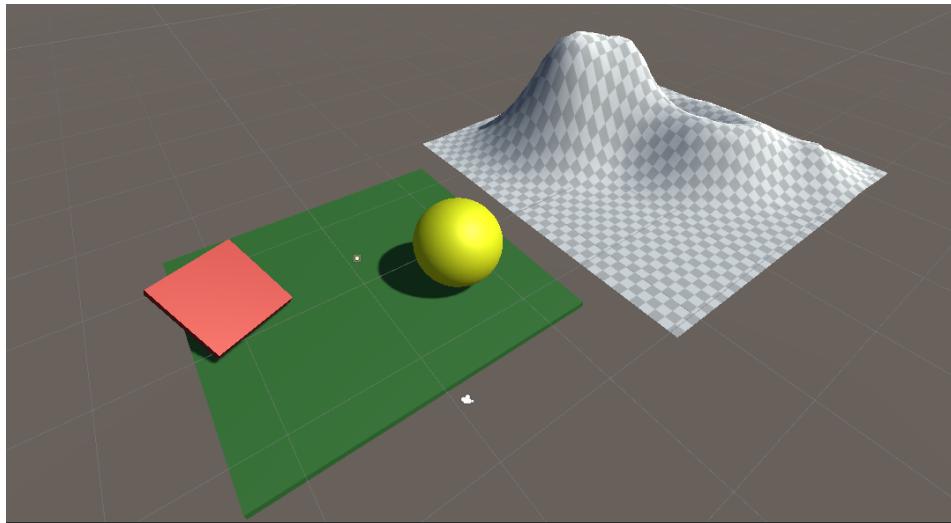
- Z-axis (blue) = length
- X-axis (red) = width
- Y-axis (green) = height

Preparing your scene

Prepare your scene first

You would need to create a gameobject or a terrain in the scene, this will act as the ground. To create a gameObject or Terrain:

- Right click on the hierarchy window > 3D Object > *Pick any shapes or choose terrain*

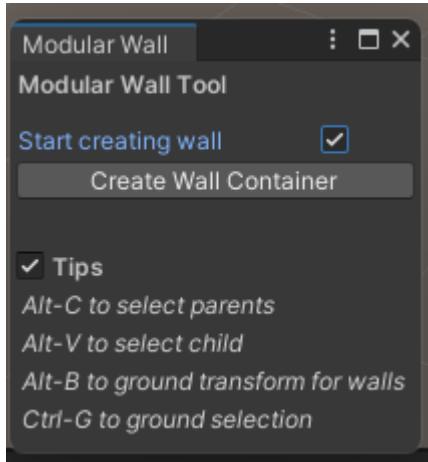


Using the Modular Wall Tool

Open the Modular Wall window

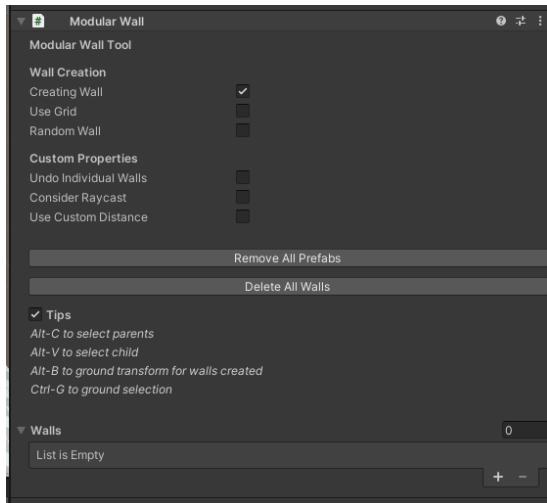
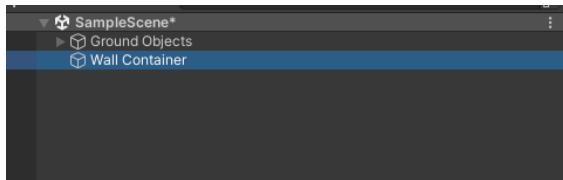
Head to tools > Modular wall

A window will pop up, this can be docked anywhere.



When 'start creating wall' is enabled, this will enable creating a wall after clicking the 'Create Wall Container' button. This will disable any other selection in the scene view.

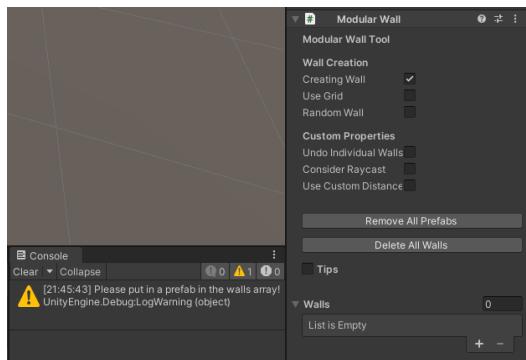
Click the 'Create Wall Container' button, this will create a wall container in the scene, it will be automatically selected and shown in your inspector.



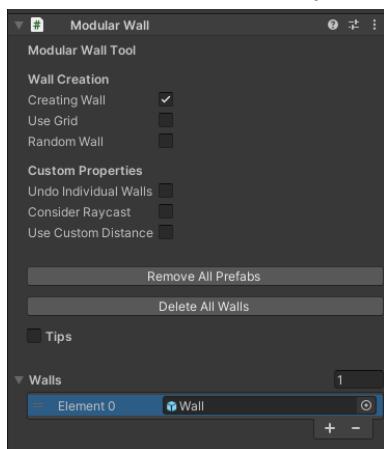
Put in a prefab in the walls array

Before you can start creating a wall, you need to put in a prefab in the walls array. You can do this by dragging and dropping prefab into the word ‘walls’. It will give you a warning as a reminder if you try to create a wall without any prefabs.

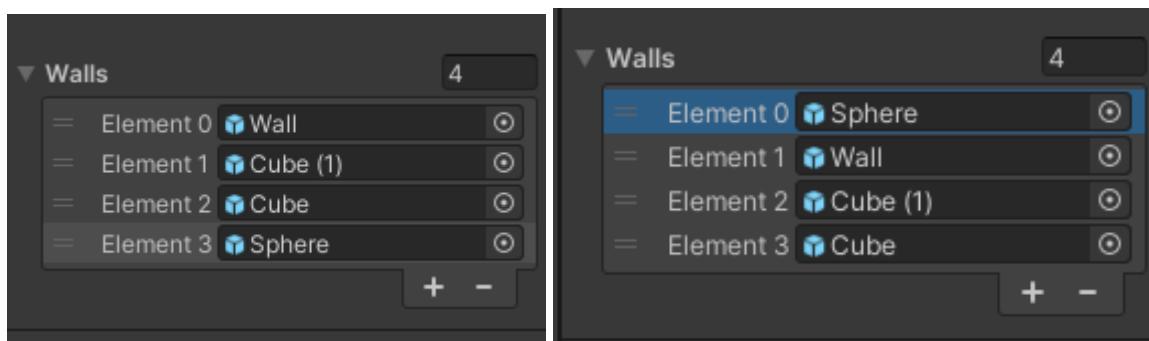
No prefabs in the walls array:



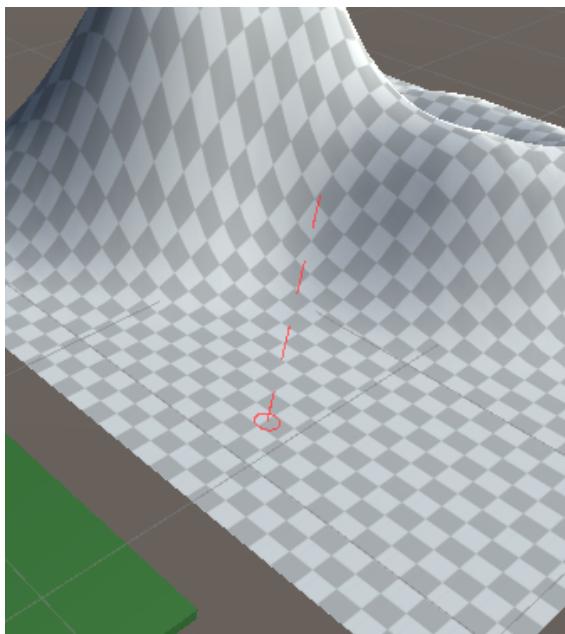
A prefab in the wall array



You can have multiple prefabs in the walls array, however only the prefab in element 0 will be drawn as a wall, unless ‘random wall’ is enabled. You can reorder the array by swapping the elements.



Draw your wall



With the 'creating wall' enabled, you will see a red gizmo(the dotted line and circle) if your cursor is over an object in the scene.

NOTE THAT WITH THIS ENABLED AND YOUR WALL CONTAINER SELECTED IN THE HIERARCHY, YOU WILL NOT BE ABLE TO SELECT ANYTHING ELSE IN THE SCENE; IT'S NOT BROKEN, I PROMISE.

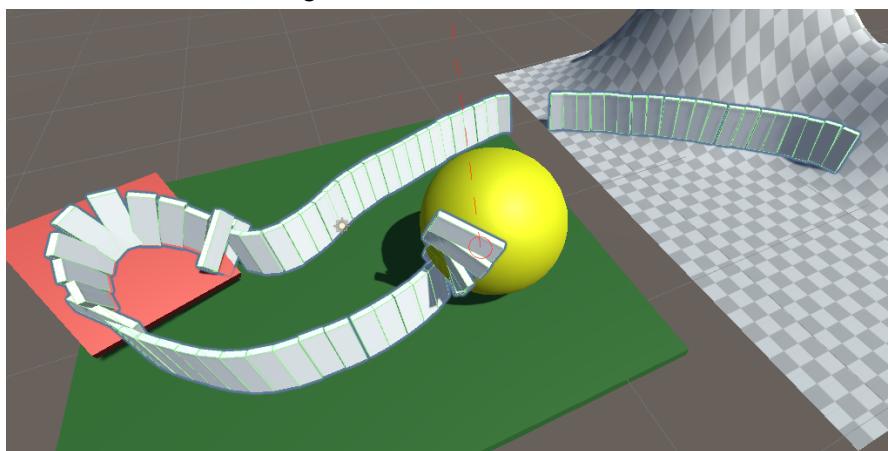
When you want to **draw a wall**:

- select the wall container > enable 'creating wall'

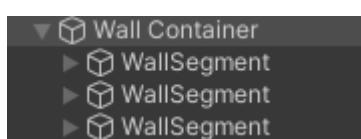
To **select other objects in the scene**:

- deselect wall container in the hierarchy or
- by disabling 'creating wall'.

After that, click and drag the left mouse button in the scene view to create your wall



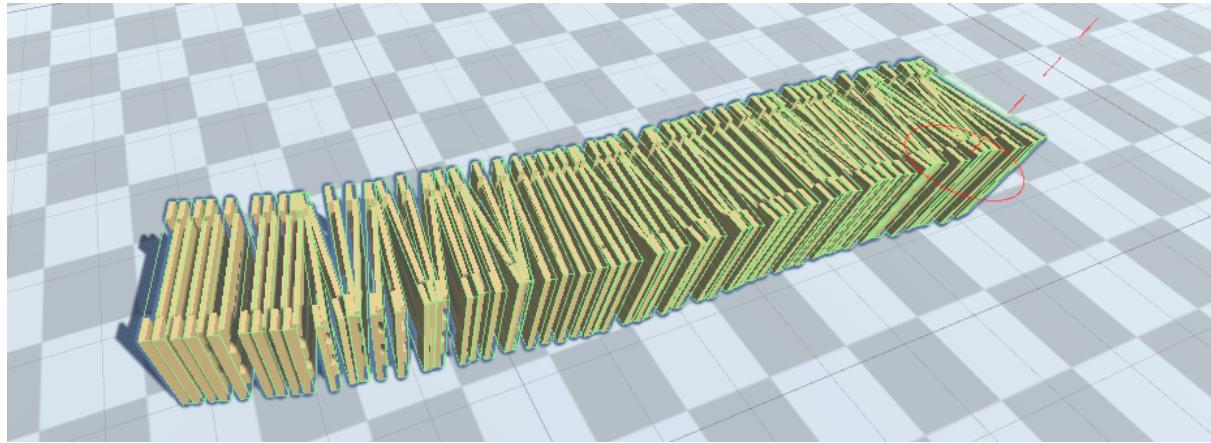
This will create wall segments in your scene and hierarchy



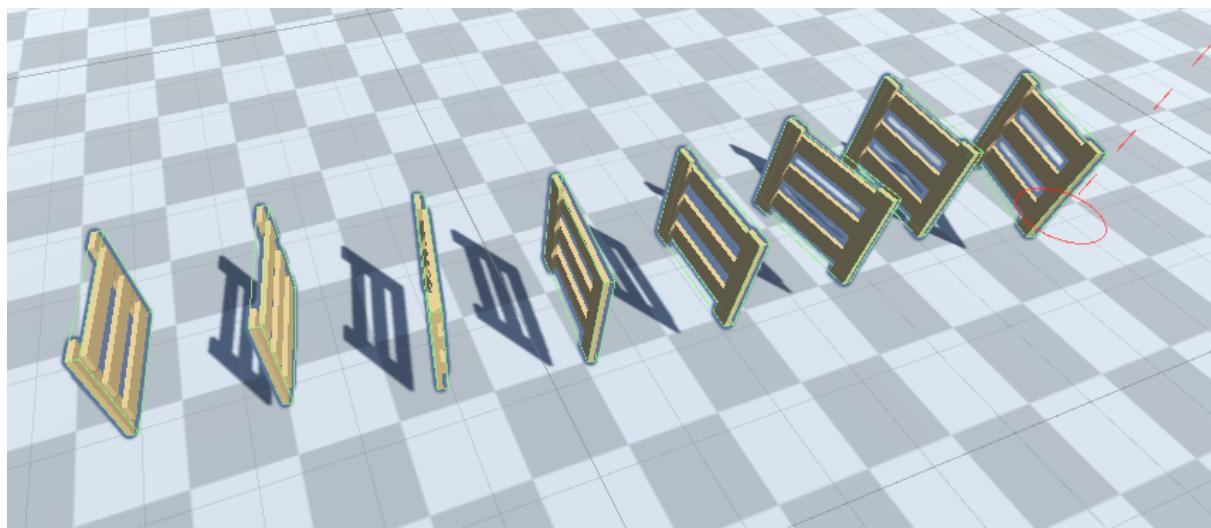
Modular Wall Tool Features

Use X Size

If ‘use X Size’ is enabled, the tool will use your prefab’s x-axis size for the distance between walls.



^ Use X axis off

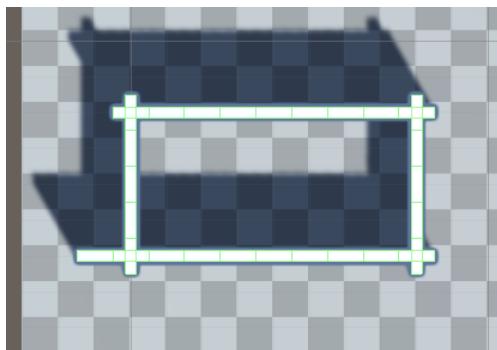
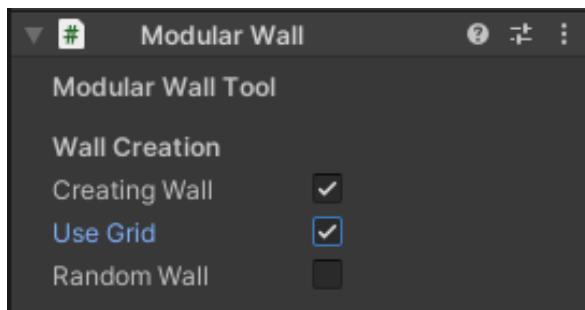


^ Use X axis on

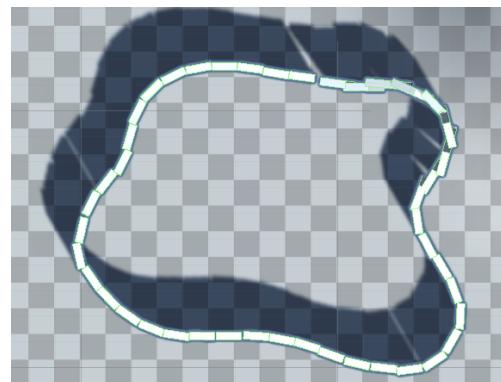
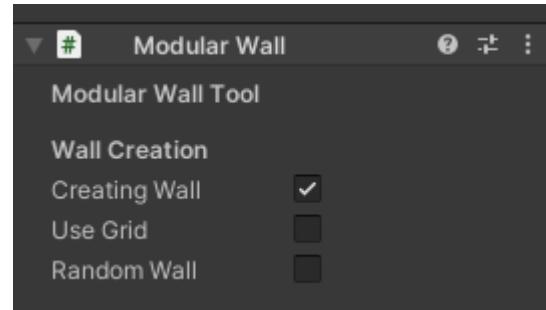
Use Grid

If ‘use grid’ is enabled, the walls created will snap to a grid, this is best for drawing straight walls, best to use this in an orthographic top down view.

Use Grid Enabled:

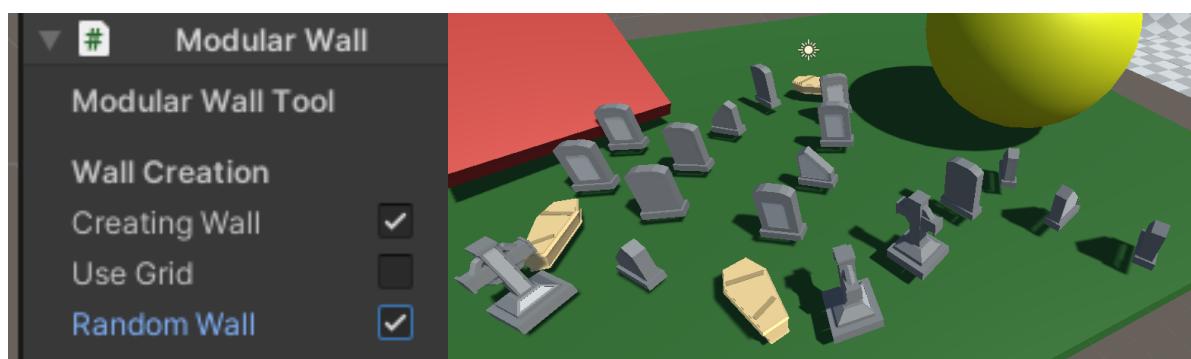


Use Grid Disabled:



Random Wall

If you have multiple prefabs and you want to generate it randomly, enable this property. The prefabs in this example are in the Low Poly Pack > Models > Headstones folder.

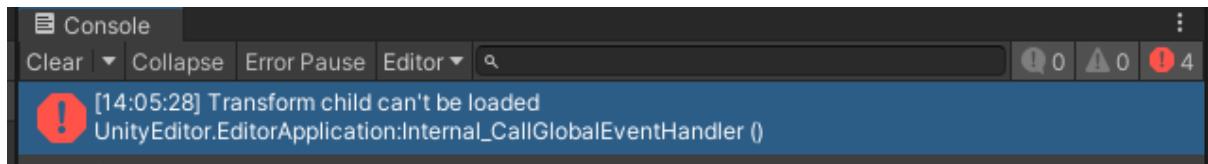


Undo Individual Walls

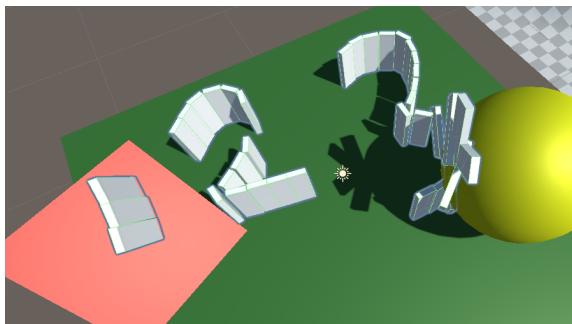
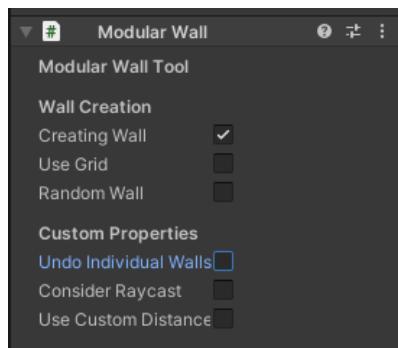
If ‘undo individual walls’ is enabled, pressing/holding CTRL+Z will undo 1 wall at a time. Note that this has to be enabled prior to drawing the walls, if enabled after, only the walls that are drawn after will inherit this action.

With Undo Individual Wall disabled, groups of walls will be undo based on when you press and release the mouse button.

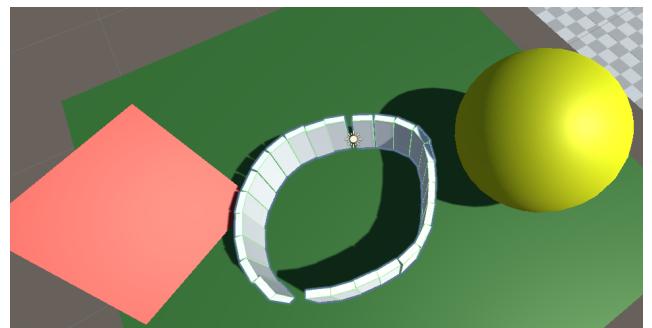
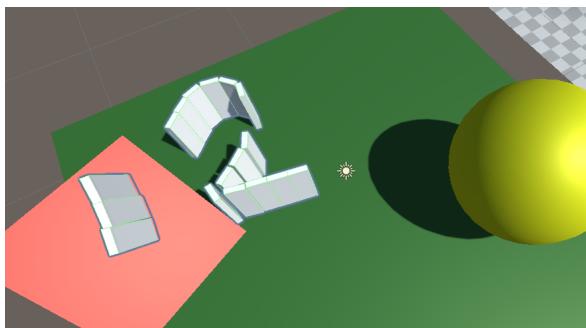
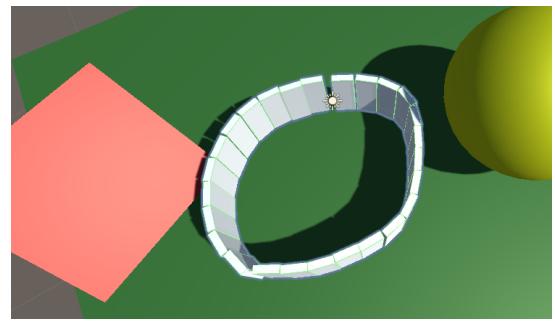
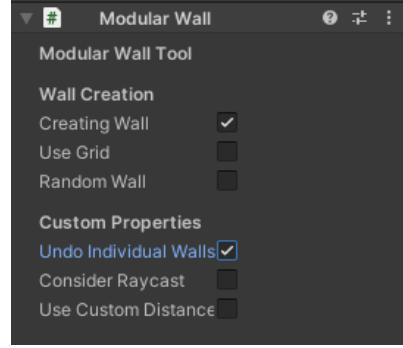
NOTE: There will be an error if you redo, (CTRL+Y), I do not know how to fix this, but everything else seems to be working.



Undo Individual Wall Disabled:

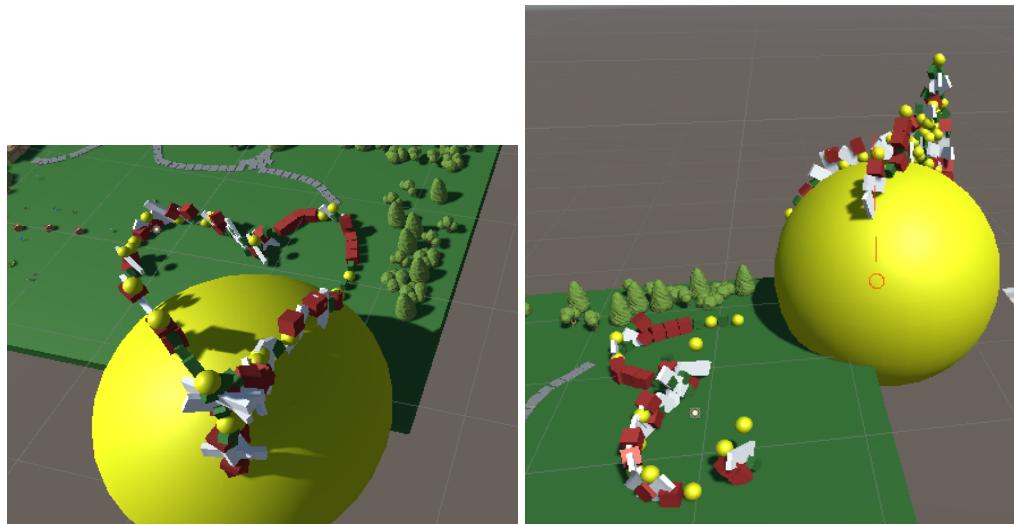


Undo Individual Wall Enabled:



Consider Raycast

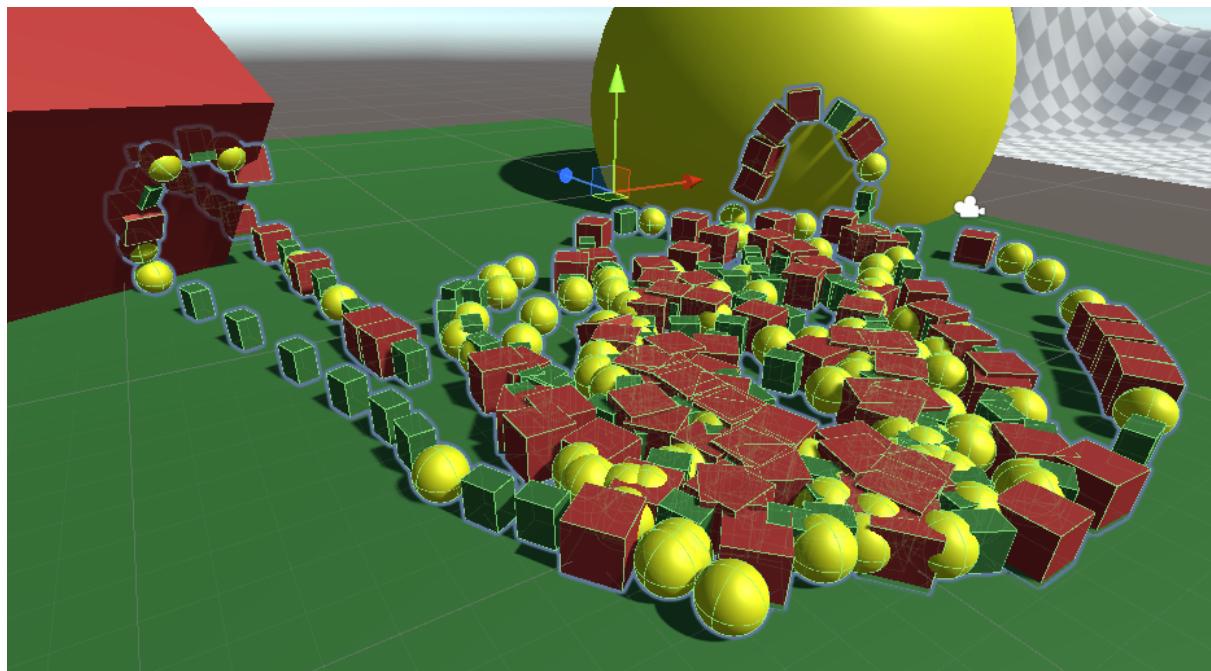
When enabled, this will allow you to instantiate objects on top of the instantiated objects if they have a collider. This is best for destroyed walls/debris. Or secret messages.



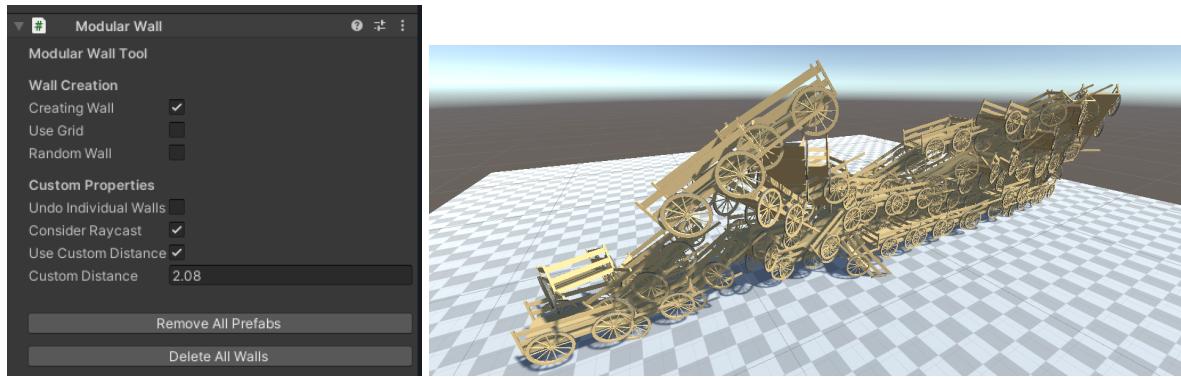
When disabled, it will give you an option to set your drawn wall back to the default layer or let it stay on the ‘ignore raycast’ layer on RMB release.

With ‘consider raycast’ set to disable and ‘back to default’ to enable, walls will be drawn on top of existing walls.

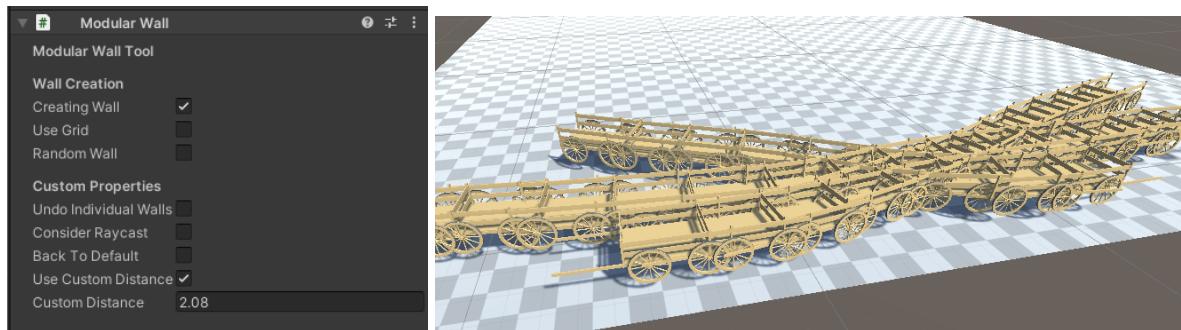
With ‘consider raycast’ set to disable and ‘back to default’ to disable, it will only instantiate on other objects that do not have their layers on “ignore raycast” layer.



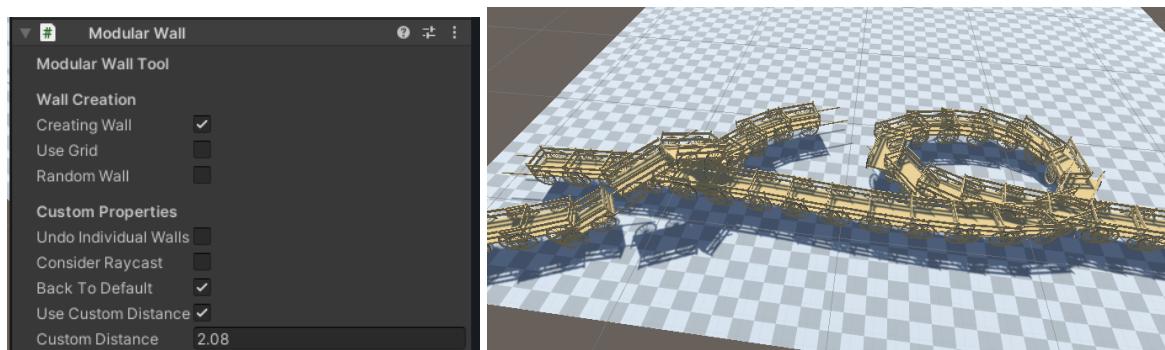
Example:



^ Consider Raycast On



^ Consider Raycast Off, Back To Default Off



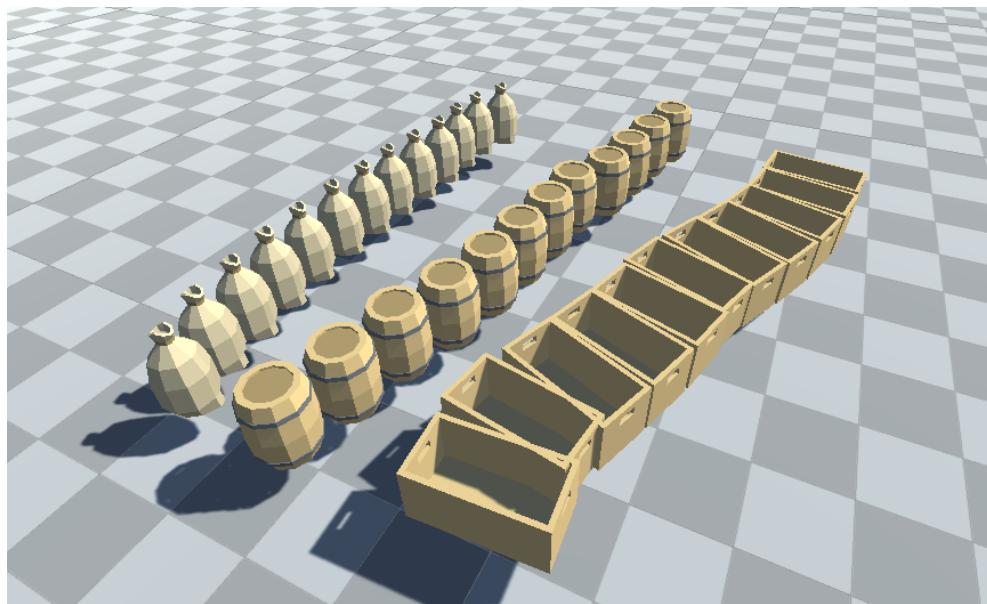
^ Consider Raycast Off, Back to Default On

Use Custom Distance

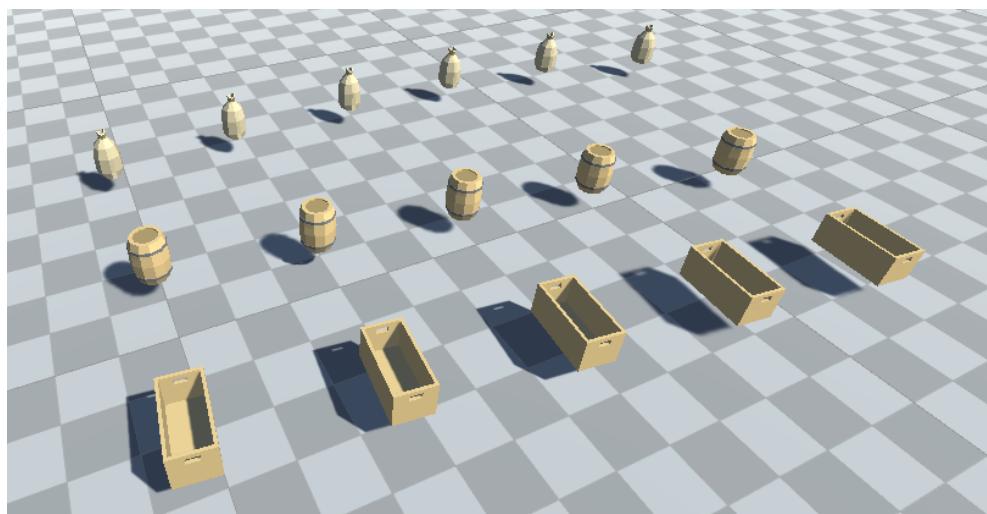
The Modular Wall tool allows for dynamic distance of the walls depending on the size of the prefab. However, I don't know how to allow for dynamic distance if the prefab is more complex.

The workaround for this is to use a custom distance that will allow for users to still use the tool with more complex prefabs.

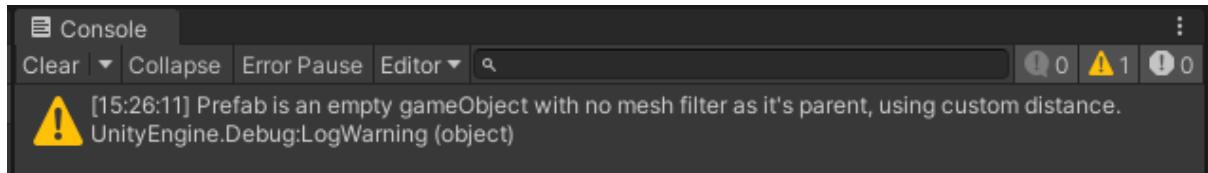
Custom distance disabled:



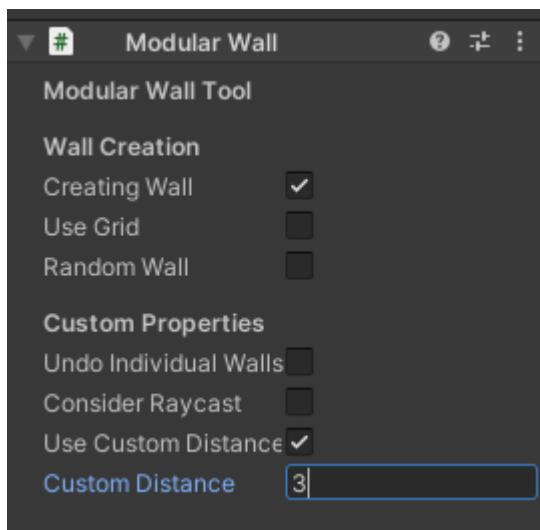
Custom distance enabled:



If an object is complex, a warning will pop up and custom distance is automatically used.



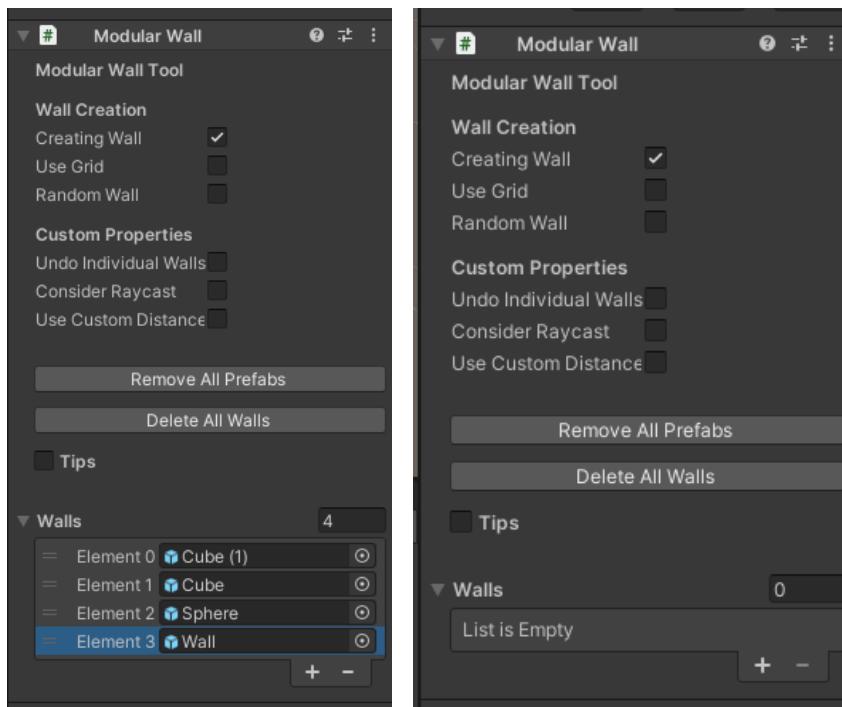
You can manually adjust the custom distance in the inspector.



NOTE: Custom distance is set before the wall is drawn.

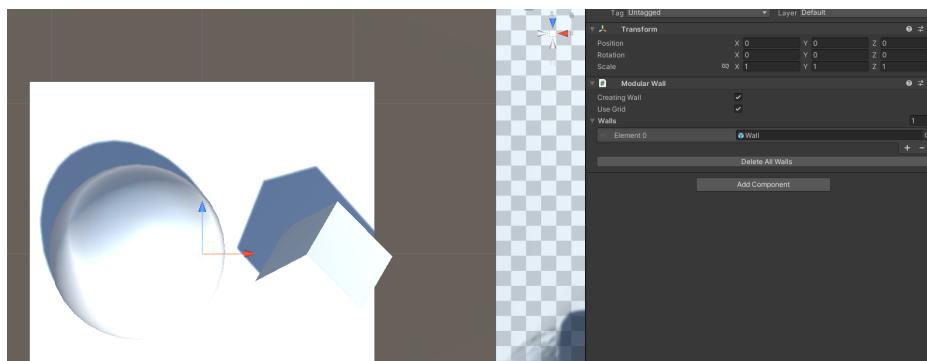
Remove all prefabs

'Remove All Prefabs' will remove all prefabs in the array.



Delete all walls

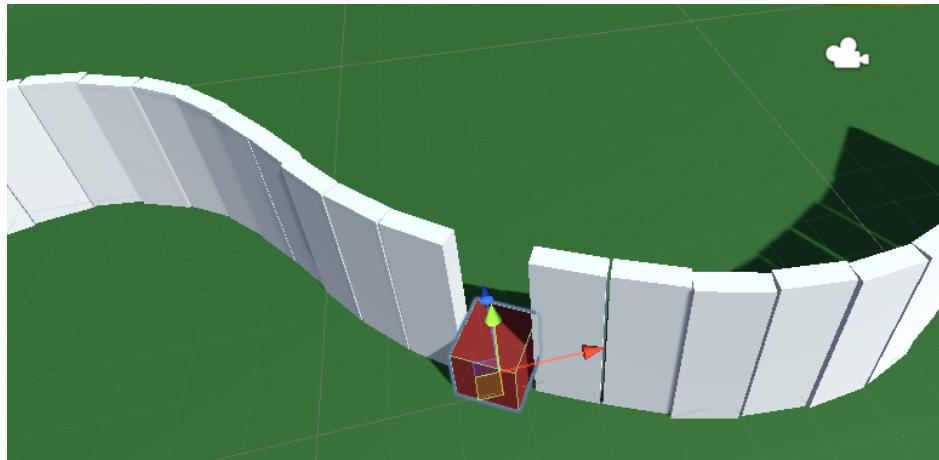
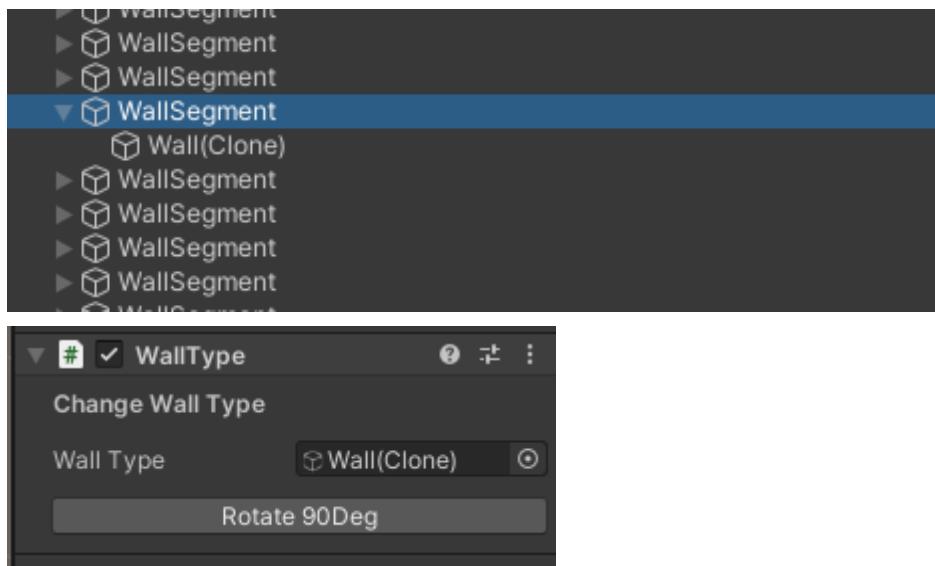
'Delete all walls' will delete all the walls drawn in that wall container



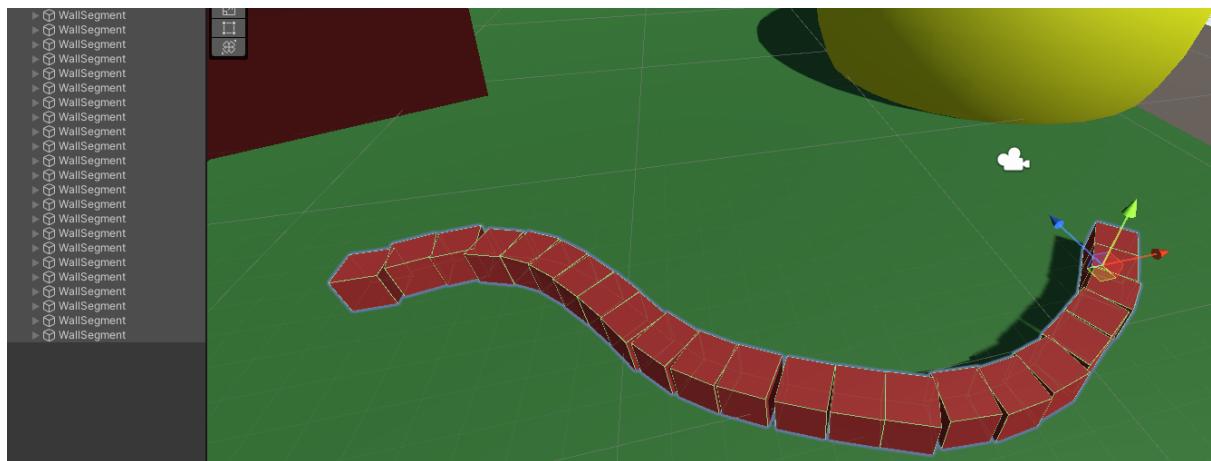
Changing Wall Type

You can change the wall type of each wall segment by:

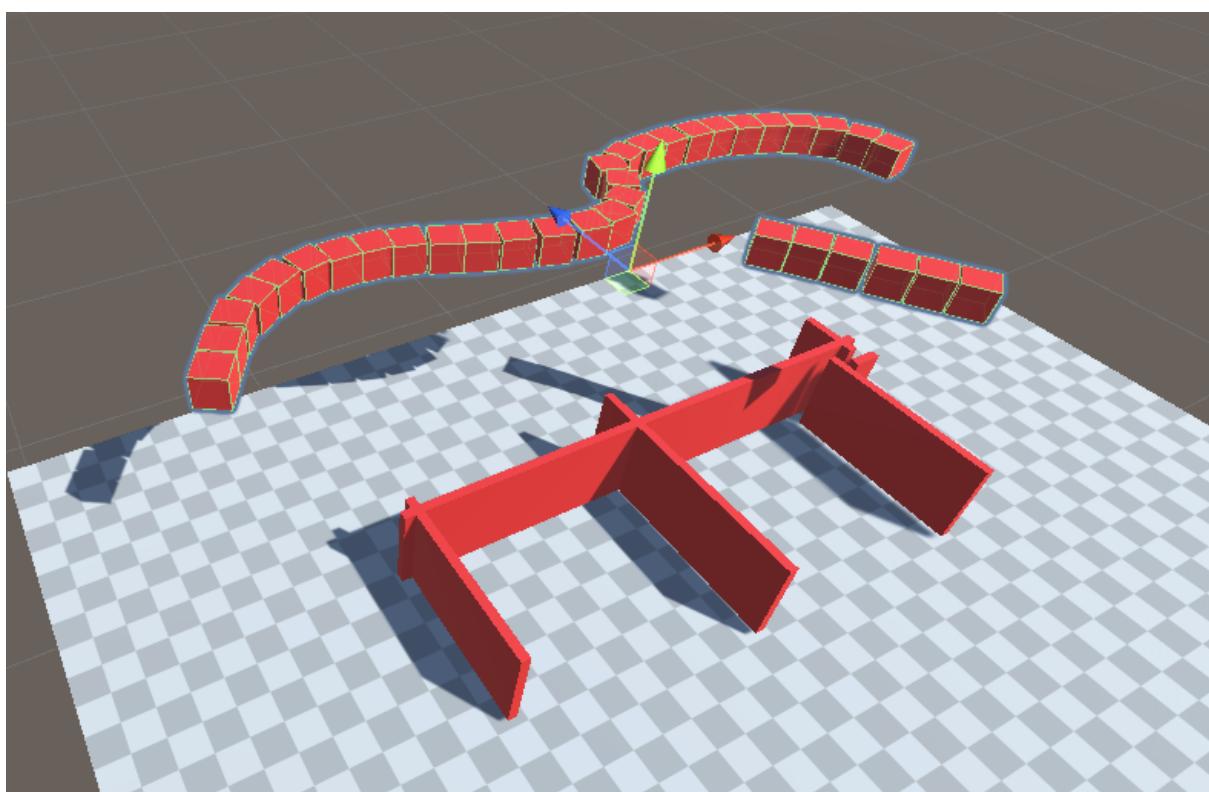
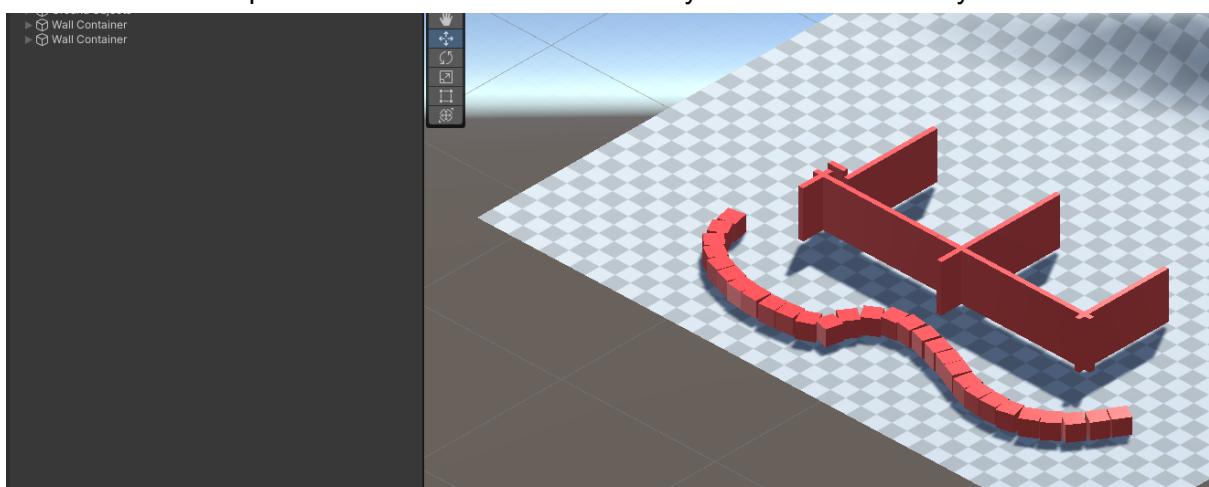
- clicking the wall segment in the hierarchy or Selecting the wall in the scene pressing ALT+C to get its wall segment
- insert a new prefab in the wall type



You can also select multiple WallSegment to change multiple instances of the wall



You can have multiple wall containers in the hierarchy and move them as you like



Troubleshooting

If you have a complex prefab or your prefab is set up differently, and would like to use more advance stuff, this is where it is:

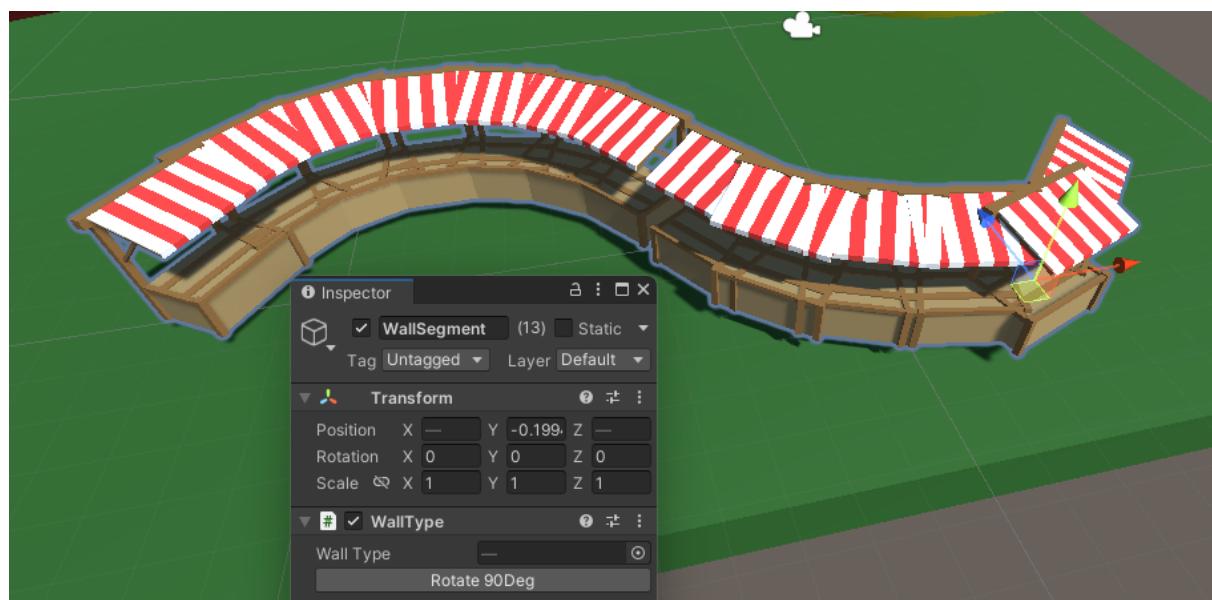
My game object is not facing the correct way!

Having your prefab facing the incorrect axis will have the result below



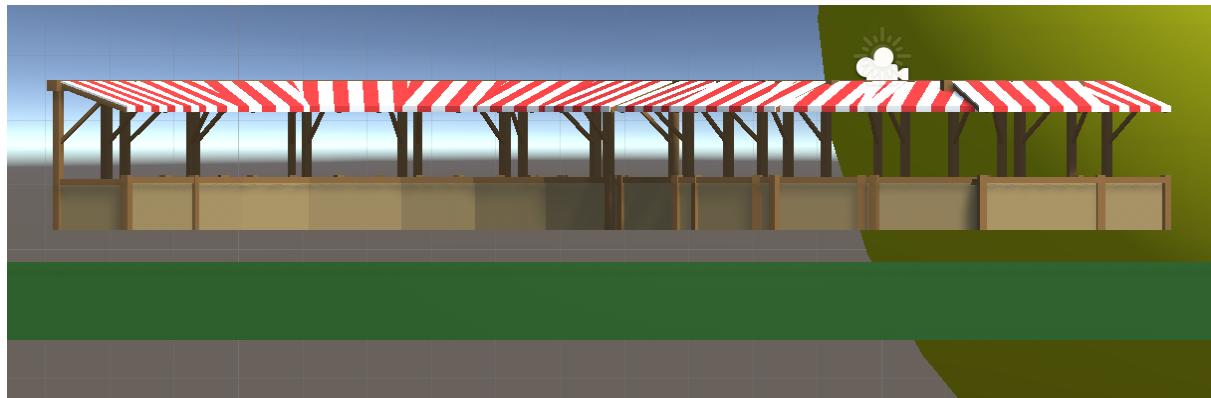
To work around it:

- Ensure that ‘Use Custom Distance’ is enabled
- Type in the length of your prefab (Might need some trial and error if you are unsure)
- Draw your prefab
- Shift select the wallSegments in the hierarchy
- Click ‘Rotate 90Deg’ button in the inspector



My game object is not grounded!

This tool assumes that the pivot is in the center of the game object. If your local pivot on your prefab is set elsewhere, this might cause on air instantiation.

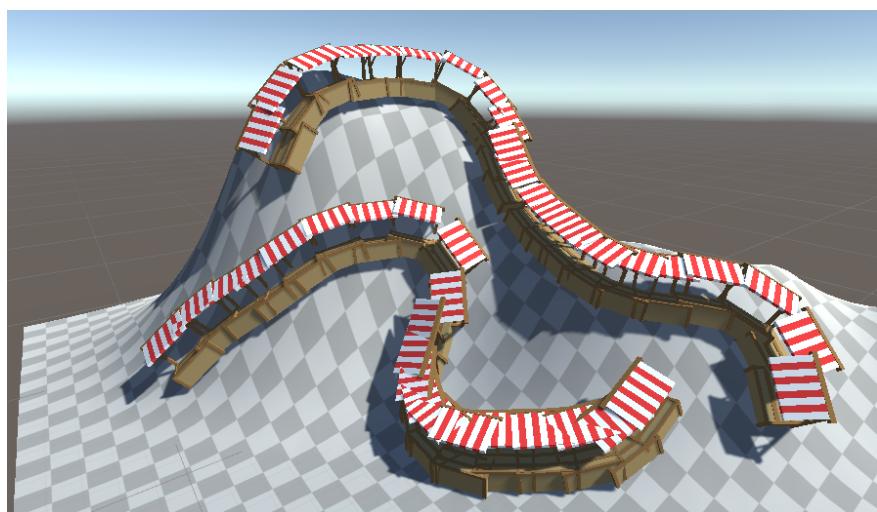


To fix this:

- Shift select the wall segments in the hierarchy
- Press ALT+C and ALT+B or Tool > Select Child and Tool > Ground Transform



This also works on terrains/non flat surfaces



I only want specific items to be grounded!

You can do this by selecting the items you'd like grounded on the scene and then press CTRL+G or by going to Tool > Snap. However, this is very finicky and does not always work. When it does not work, hold down CTRL+G while dragging the y-axis of your selection up and down.



That is all from me. Thank you!

Credits

Lecturer/Playtesters

Max Myer
Lori McLellan
Holly Wouters

Tutorials

Modular Wall in unity runtime

<https://www.youtube.com/watch?v=aXM3ewM65VA>

Code Snippets

Snap to ground

<https://unity3d.college/2017/09/26/using-unity-editor-extensions-to-snap-to-ground-when-placing-gameobjects/>

Select parents from children

<https://answers.unity.com/questions/216785/how-to-i-forec-the-selection-of-a-parent-when-a-ch.html#:~:text=When%20you%20select%20object%20in.the%20selected%20parent%20of%20object.>

Asset

[Low Poly Pack - Environment Lite by Solum Night](#)