

How To Change Grid (Floor) Size

In this tutorial, I will show you how to change the grid (floor) size in Room Building Starter Kit. **The build system in this asset is made base on grid system. And a grid is equal to a floor in this asset which means the floors in each office constitute the entire grid system.**

1. Limitations

Please let me list the limitations of this feature in advance:

- a. The floor can only be square;
- b. The wall length must be same with the floor size, which means a floor can only have four walls around it in four directions (up, down, left, right);
- c. The floor size can't be changed in play mode;
- d. Consider different users have different requirements, if I add too much functions, some user may need to subtract them. So, here I just supply a place to change the grid size used by the build system scripts. User need to make sure the models used by the build system have the right size compatible with the floor;
- e. When you design your build system models, their origins must at same location with the relative model's origin in this asset. After you put your models into Unity as a prefab, please make sure its collider shape fits the model size like the built-in models in this asset.

2. Change grid size

By changing the grid size, the work has two parts: **Change the grid size value used by scripts** and **scale or replace the models used by build system**. The models used by build system are associated with the build logic and that's why it can work precisely in this asset. So, we have some rules need to be followed during design your models. Here, we recommend that determine your floor size first before design all the other models. In this tutorial, all the model size unit is meter.

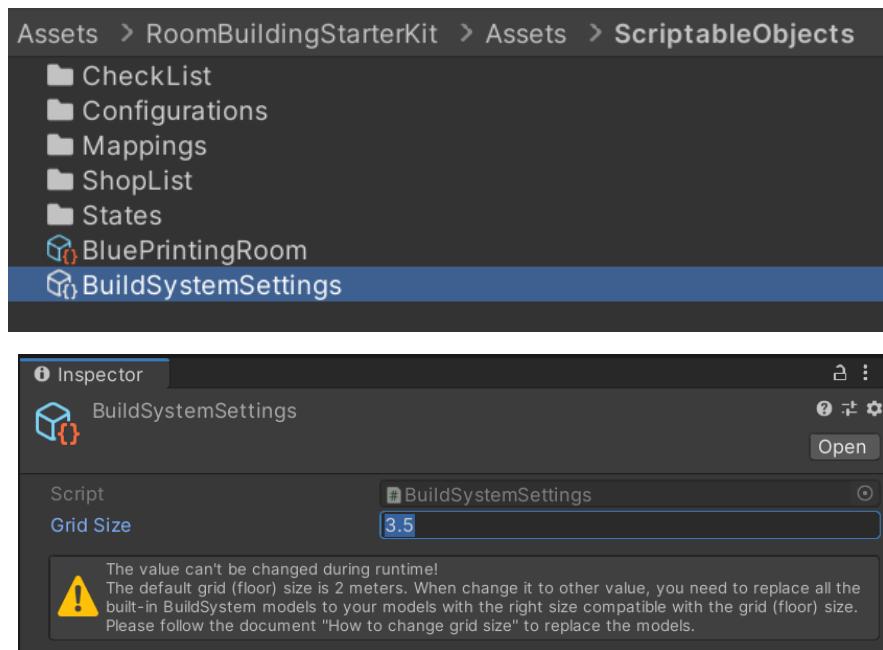
2.1. Change grid size used by scripts

Let's define the floor size as 3.5m x 3.5m. The floor size used by scripts is defined under:

"Assets/RoomBuildingStarterKit/Assets/ScriptableObjects/BuildSystemSettings.asset"

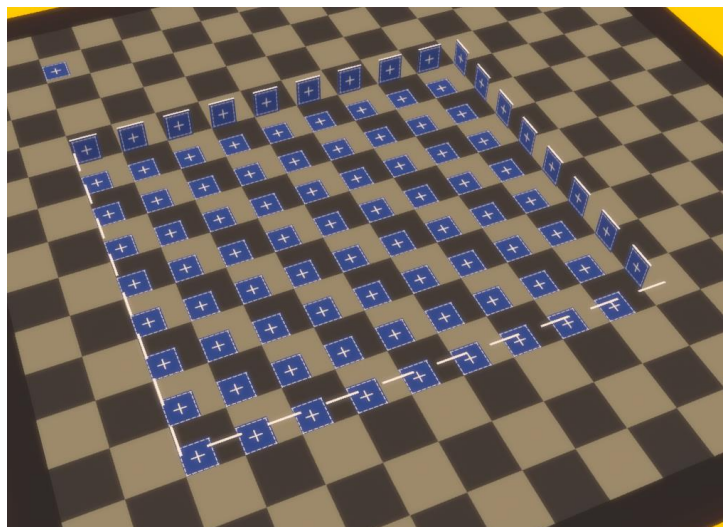
In its inspector window, you can see the default grid size is 2m. In this asset, all the built-in models used by the build system are designed base on the grid size. Here, we change the value to 3.5m.

After change this value, we have to change all these models' scales or replace to new models. I think most of the users will not use the low poly models inside this asset :)



2.2. Change model size

After you change the grid size, the old offices can't be used anymore. You need to make new office by using Office Editor. When you play the OfficeEditor scene, you will see the blue print floor and walls become small. Next step, we need to change these models' scales or replace to your larger models.

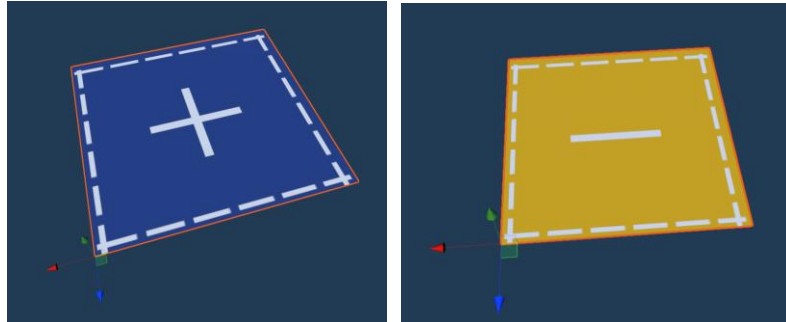


Blueprint models

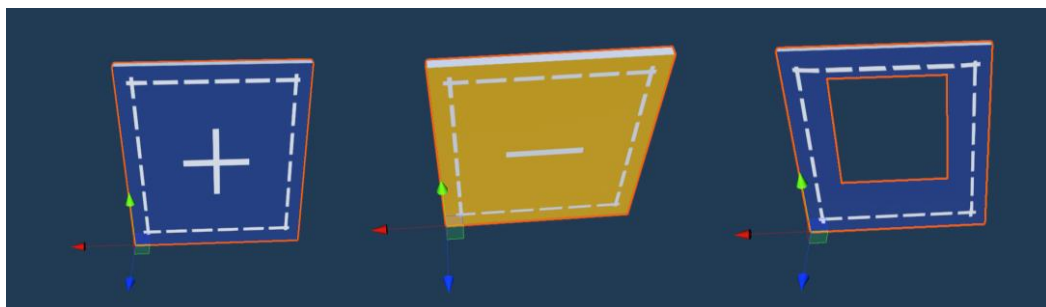
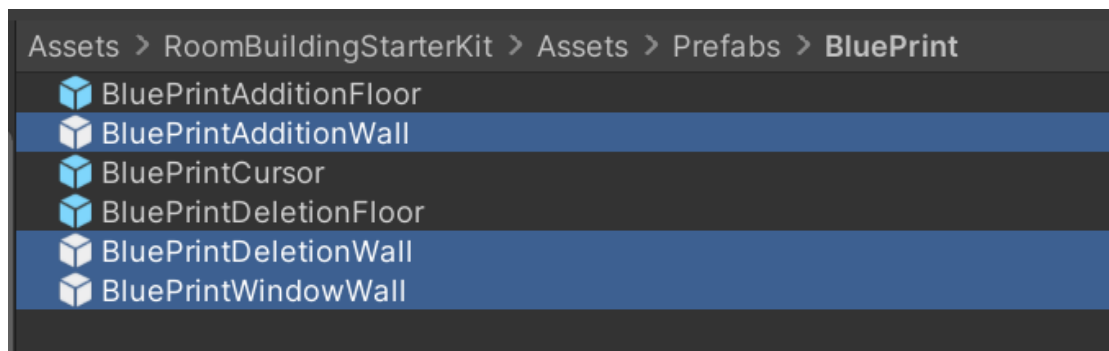
Under “**Assets/RoomBuildingStarterKit/Assets/Prefabs/Blueprint/**”:

BlueprintCursor default size is 2m x 2m, we need change it to 3.5m x 3.5m.

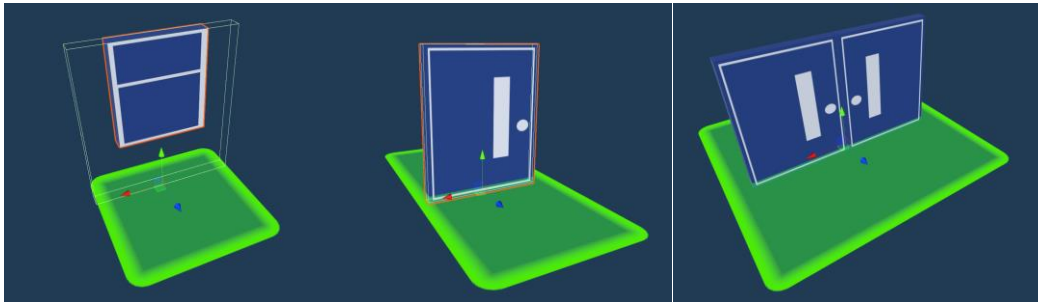
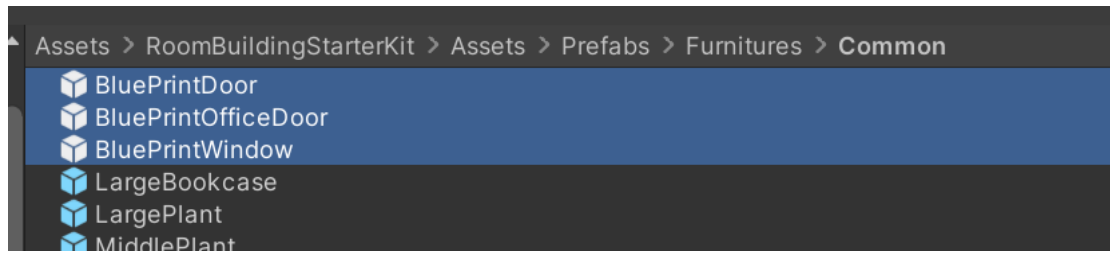
Notice that the **BlueprintAdditionalFloor** and **BlueprintDeletionFloor** need to change from 2m x 2m to 3.5m x 3.5m either.



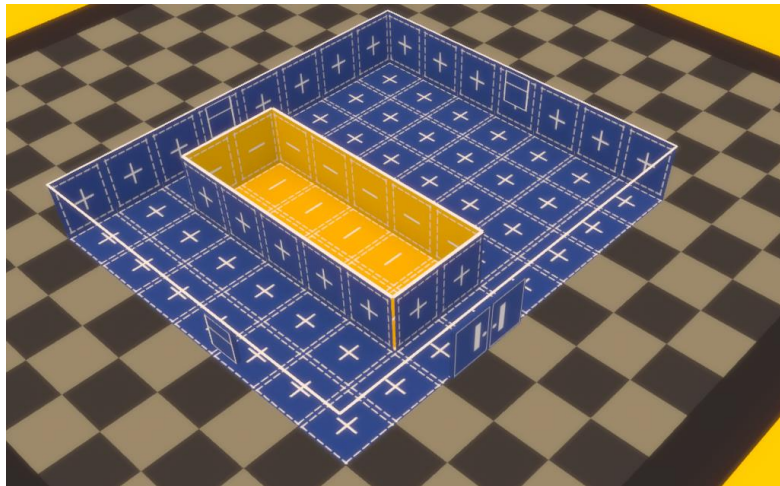
The **BlueprintAdditionWall**, **BlueprintDeletionWall** and **BlueprintWindowWall** have length equal to 2m. We need change their length to 3.5m.



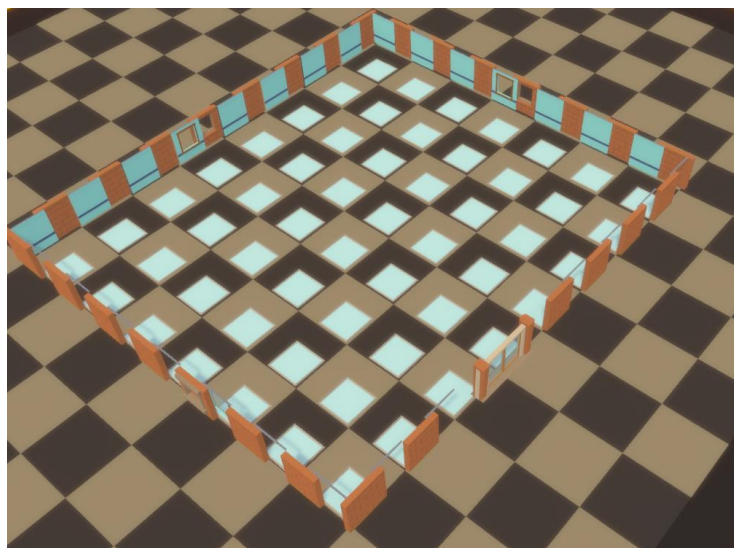
Under “Assets/RoomBuildingStarterKit/Assets/Prefabs/Furnitures/Common”:
BlueprintWindow also need change size. You can choose the scale multiplier by yourself. Just looks right is fine. However, the **BuildableHintPlane** under the window must be resized from 2m x 2m to 3.5m x 3.5m. Same action need to be done on **BlueprintDoor** and **BlueprintOfficeDoor**.



Now, the models under blue print mode could compatible with the floor size!



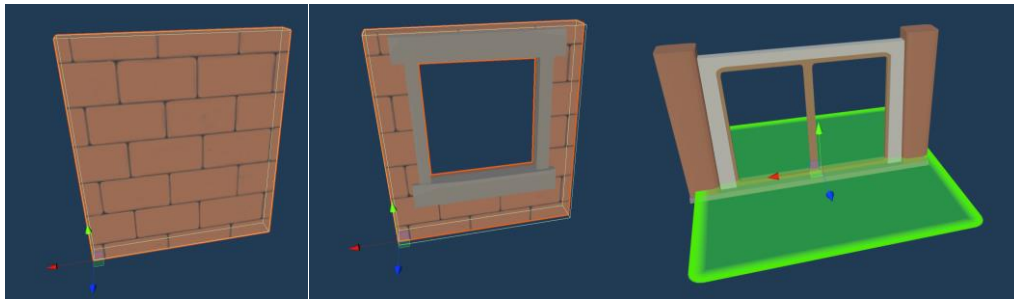
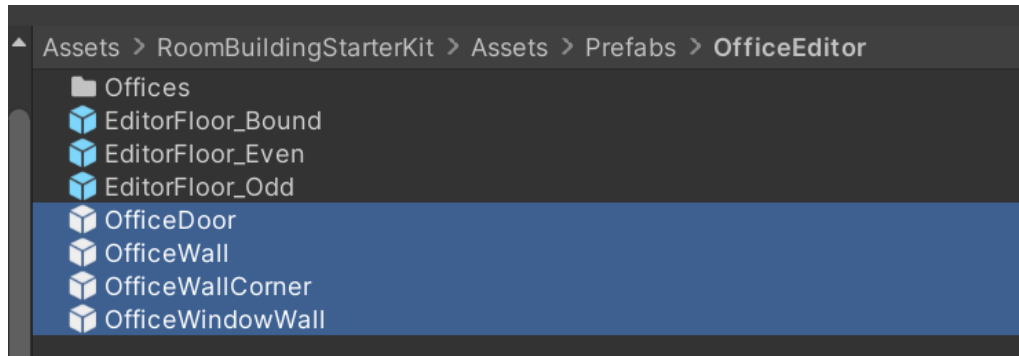
Now if you build the office, you will see result in below picture. Next, we need to change the office models.



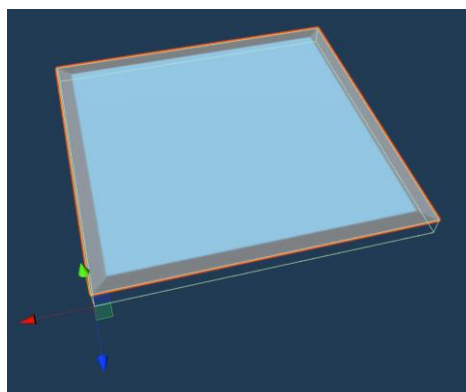
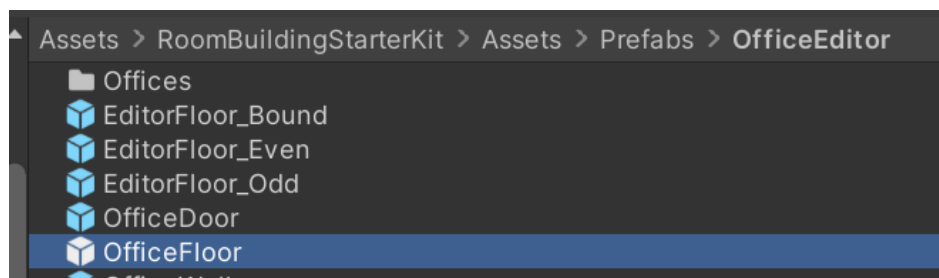
Office models

Under “Assets/RoomBuildingStarterKit/Assets/Prefabs/OfficeEditor”:

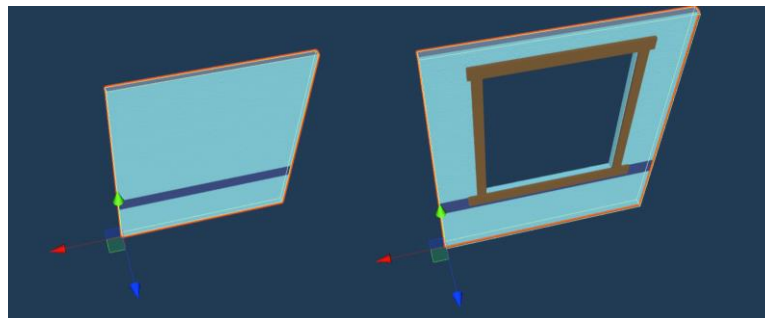
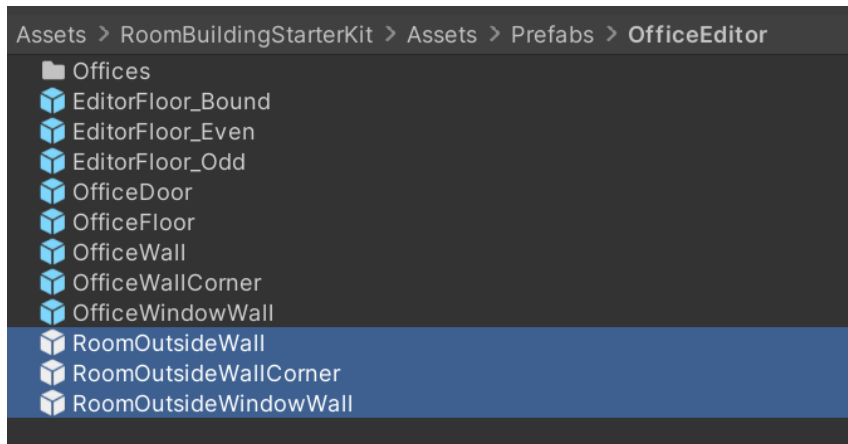
We need to change the length of **OfficeDoor**, **OfficeWall** and **OfficeWindowWall** from 2m to 3.5m.



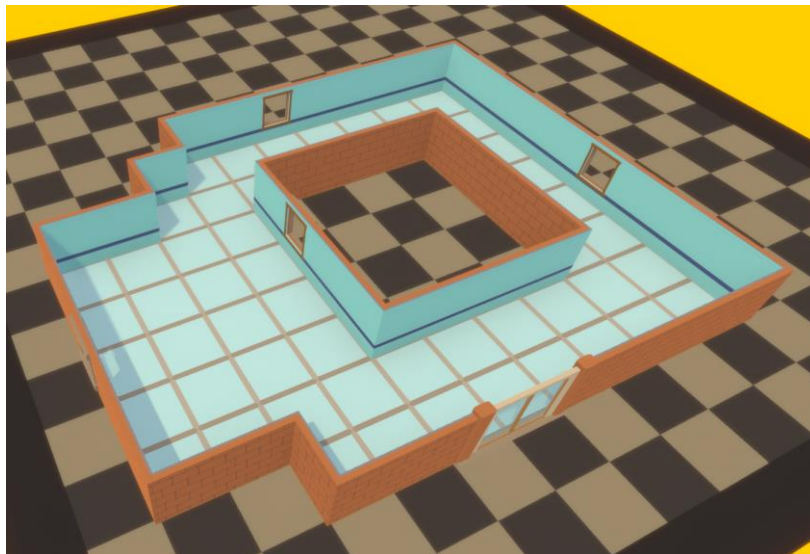
The **OfficeFloor** need to change size from 2m x 2m to 3.5m x 3.5m.



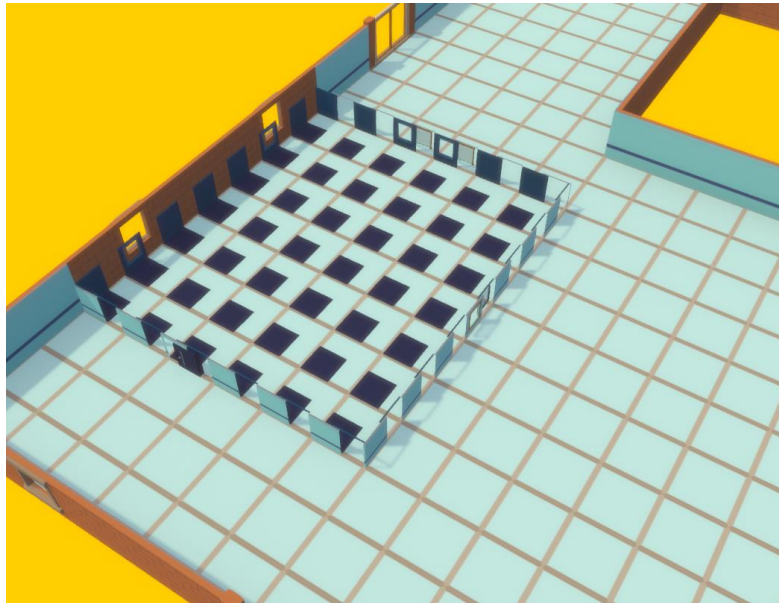
The **RoomOutsideWall** and **RoomOutsideWindowWall** need to change length from 2m to 3.5m.



Now, let's build the office in OfficeEditor, it looks right!



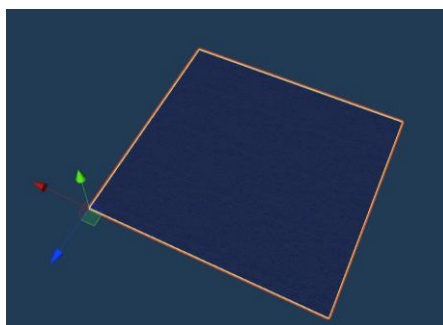
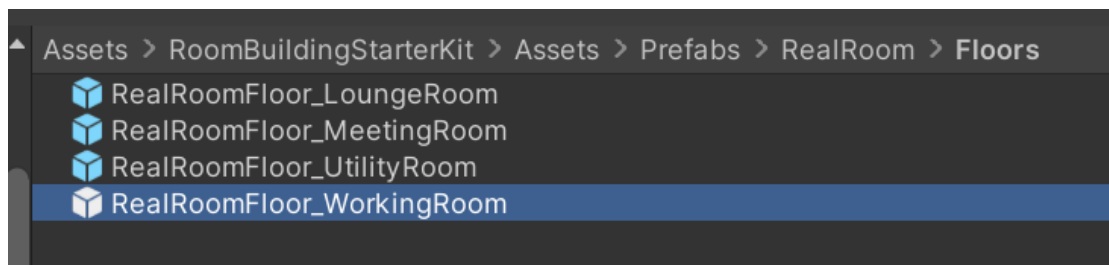
Next, we save this office as a prefab in OfficeEditor and put it into Demo scene. Now, we build a room inside the new office and get below result. The room models' size also need to be changed.



Room models

Currently, there are four kinds of rooms inside the asset. They share the same build logic. So, I just resize working room models as an example. Other room type can follow these steps.

Under “**Assets/RoomBuildingStarterKit/Assets/Prefabs/RealRoom/Floors/**”:
Change the RealRoomFloor_WorkingRoom size from 2m x 2m to 3.5m x 3.5m.



Under

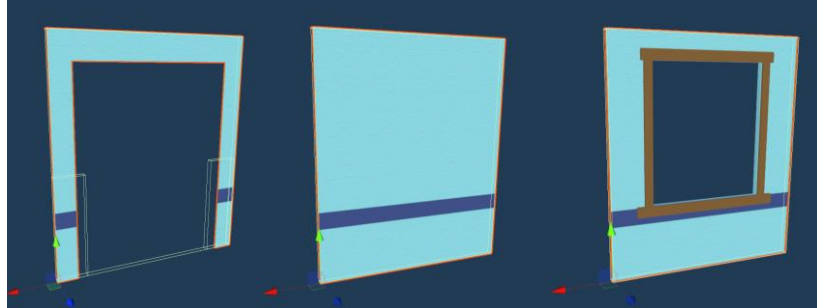
“**Assets/RoomBuildingStarterKit/Assets/Prefabs/RealRoom/Walls/Outside/WorkingRoom/**” and

“**Assets/RoomBuildingStarterKit/Assets/Prefabs/RealRoom/Walls/Inside/WorkingRoom/**”:

Change these walls’ length from 2m to 3.5m.

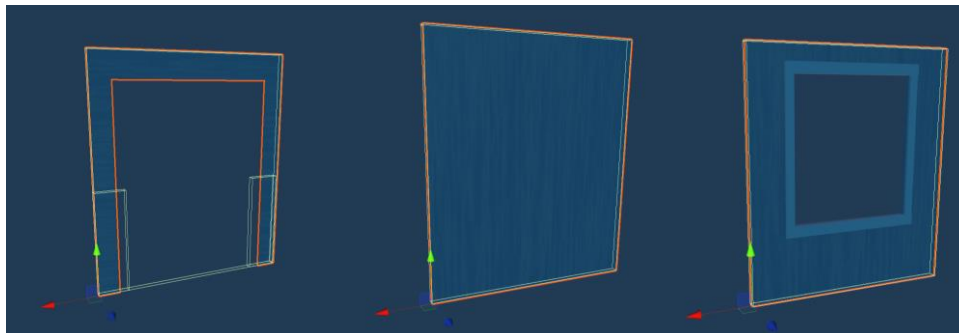
Assets > RoomBuildingStarterKit > Assets > Prefabs > RealRoom > Walls > Outside > WorkingRoom

- RealRoomOutsideDoorWall_WorkingRoom
- RealRoomOutsideWall_WorkingRoom
- RealRoomOutsideWallCorner_WorkingRoom
- RealRoomOutsideWindowWall_WorkingRoom



Assets > RoomBuildingStarterKit > Assets > Prefabs > RealRoom > Walls > Inside > WorkingRoom

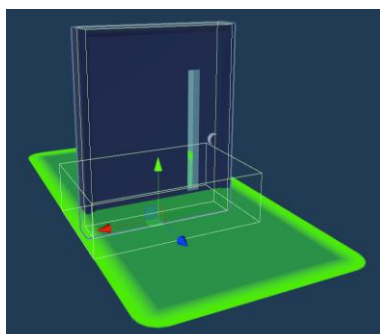
- RealRoomInsideDoorWall_WorkingRoom
- RealRoomInsideWall_WorkingRoom
- RealRoomInsideWallCorner_WorkingRoom
- RealRoomInsideWindowWall_WorkingRoom



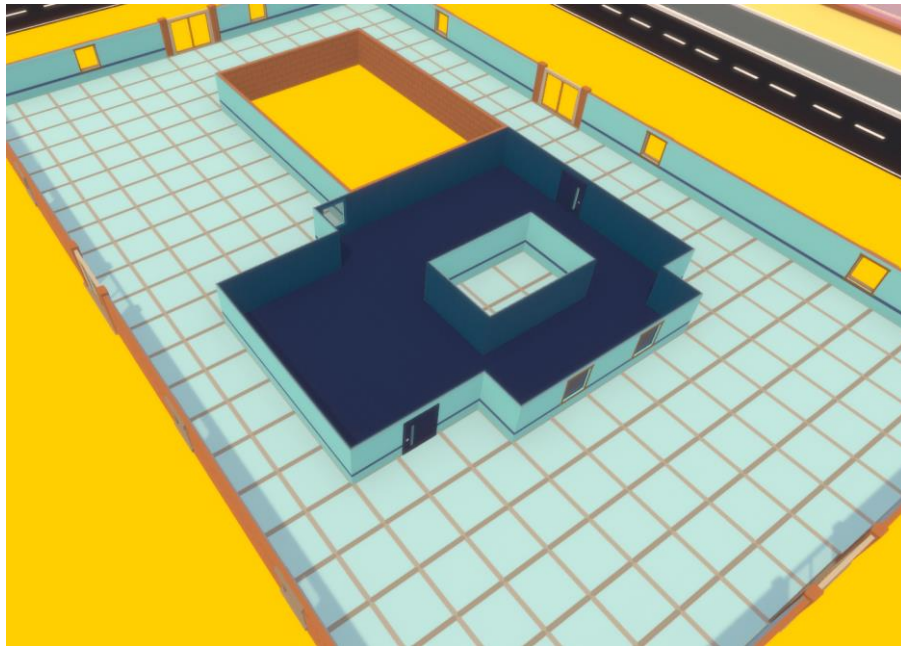
Under “Assets/RoomBuildingStarterKit/Assets/Prefabs/RealRoom/Doors/”:
Change the **RealRoomDoor_WorkingRoom**’s length from 2m to 3.5m. Also don’t forget changing the **BuildableHintPlane**’s size to fit the new floor size.

Assets > RoomBuildingStarterKit > Assets > Prefabs > RealRoom > Doors

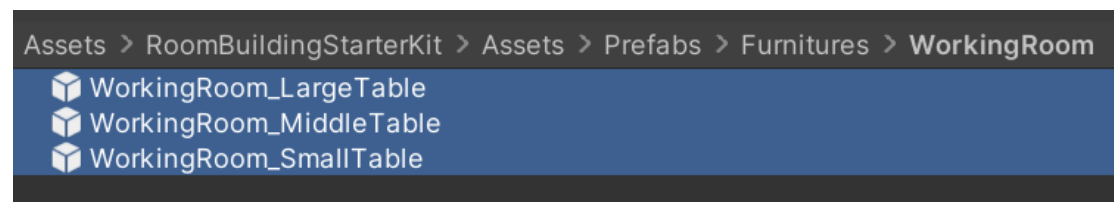
- RealRoomDoor_LoungeRoom
- RealRoomDoor_MeetingRoom
- RealRoomDoor_UtilityRoom
- RealRoomDoor_WorkingRoom



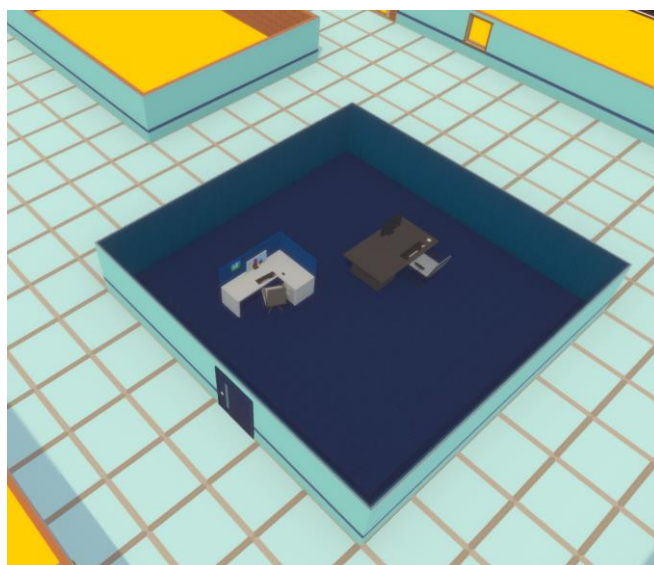
Now, we can build a working room with floor size equal to 3.5m!



Last is the Furniture size. All the furniture models are designed based on floor size. So, after we change the floor size to 3.5m. We need to redesign the furniture or just change its scale. According to the ratio $3.5 : 2 = 1.75$, I just need to change the furniture's scale from 1 to 1.75.



Finally, everything looks right now!



If I left something unclear or if you encounter any problem to this project. Please don't hesitate to contact with me with:

Email: hurrywon@163.com

Discord: <https://discord.gg/J7JTGqcf3v>