

Square City Architect

User Manual

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Features

- Textureless 3D models.
- Six different building models with three different modes.
- Animated and interactive UI.
- Animated buildings.
- Two level maps.
- One special building.
- Sandbox functionality.
- Color Grading.
- Advanced camera orbit functionality.
- Well documented code in C#.
- Multiple custom shaders featuring vertex animation and interactive emission.
- Low memory footprint.
- High quality (PC) and low quality (mobile) versions.

Scripts

All scripts in the project are written in C# and have comments.

Scenes

There are three scenes in the project.

KeyShots – in this scene there are examples of different camera angles with additional image effects to make the shots more plausible.

HighQuality – this scene has best quality for more powerful devices.

LowQuality – this scene has low quality settings suitable for mobile devices.

BasicFeatures– this scene contains minimum scripts and object, showing just basic features.

3D Models

All 3D models in the project has UV map 0 and 1. UV map 1 is used for Ambient Occlusion and Emission texture. UV map 0 is used for Decals. All 3D models have vertex colors as diffuse.

Gamma color space is used in the project. This way, whole project looks the same on all platforms. When changing color space to Linear, buildings may have washed out colors.

All buildings have their prefabs with animations and materials.

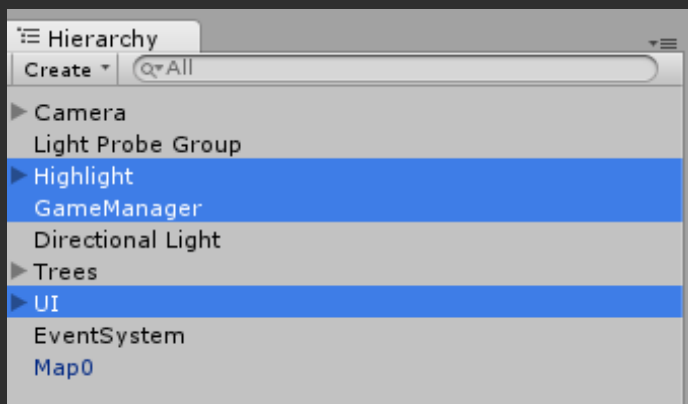
Shaders

There are multiple custom shaders in the project optimized for textureless 3D models.

Other shaders allow vertex animation, neon animation and flag animation.

How to start?

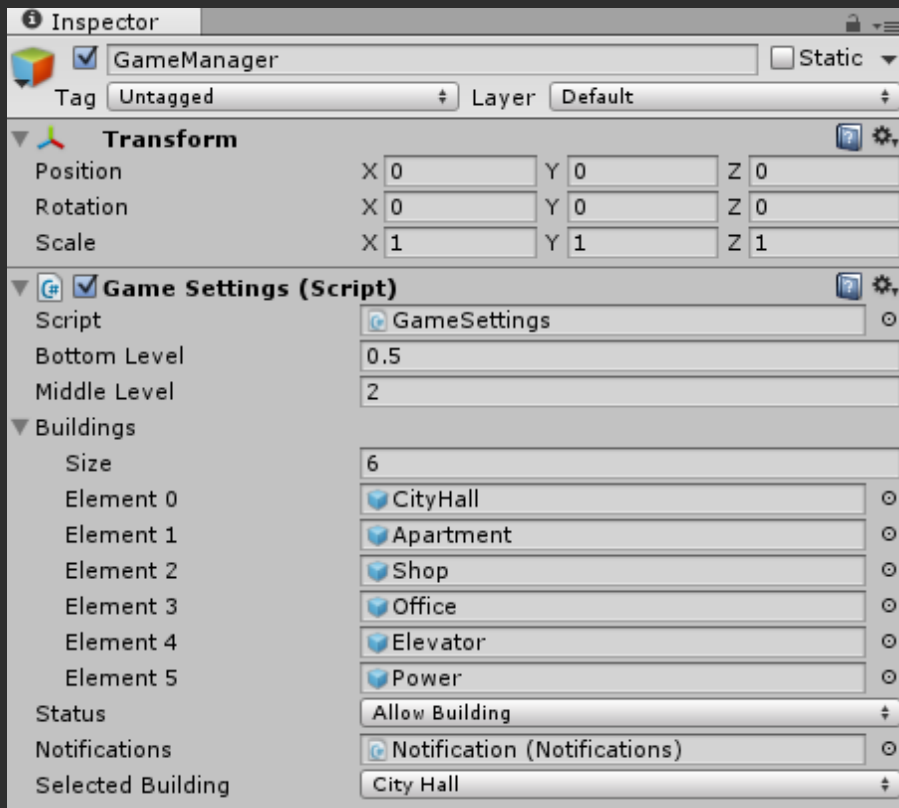
Open BasicFeature scene. On the scene just 3 object are the most important one, that you should first check.



On gameObject GameManager you can find script called GameSettings. It contains array of building all prefabs, that will be instantiated during building, basically a base that you can choose from. Base on the index you can select right building. In the script there is enum that matches the right indexes with right name for easier use.

Status is responsible for showing the example city, which in this case is deleted, so that's why we are already in mode allowBuilding. We are skipping the showcasing stage, like you can see in other scenes. SelectedBuilding tells the Build function which building type you want to build

now. You can now override this variable with other script to set what building you want to build. Right now you can just choose in the inspector. If this variable is selected to None, it will just pick any building randomly.



In the script GameSettings you can find function Build(Transform target). This function is called to build buildings.

To hide building just need to call this function:

```
building.GetComponent<Animator>().SetTrigger("Hide");
```

In the animation there is animation event, that turns off the object.

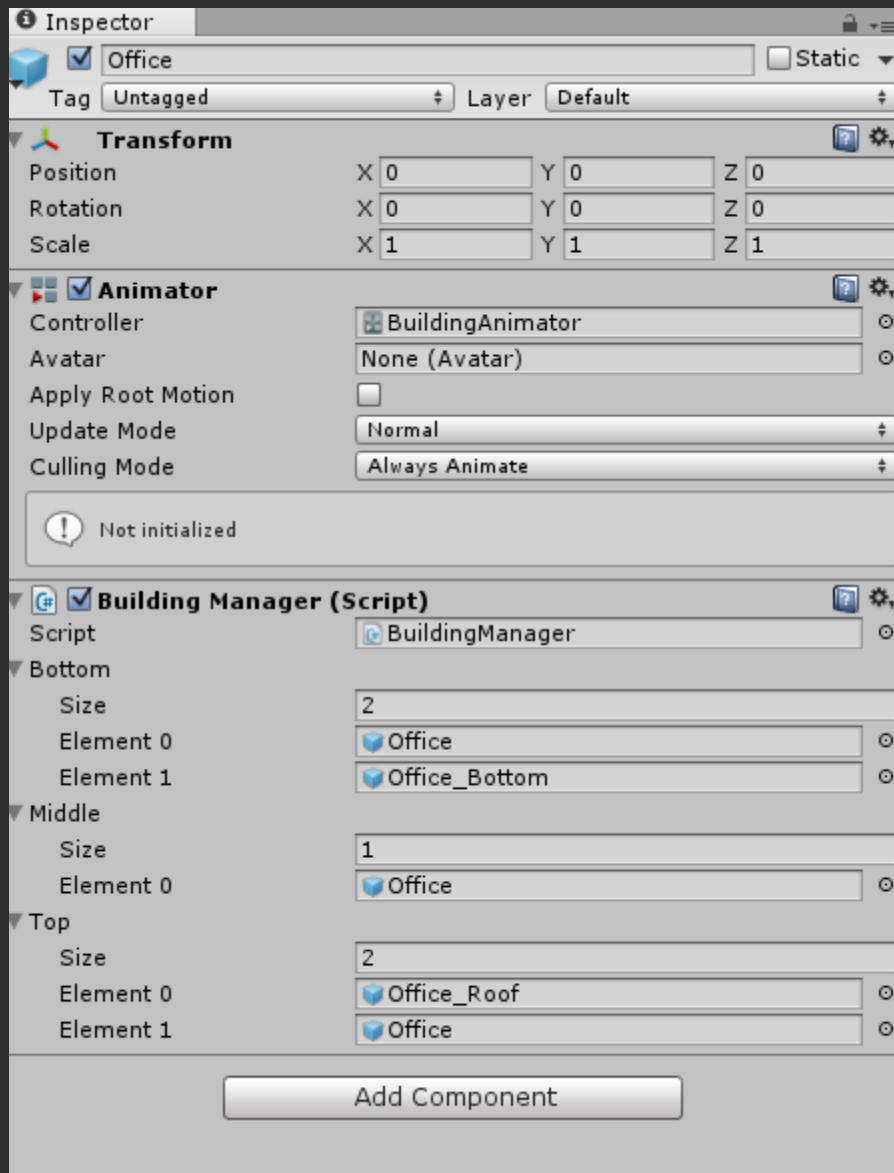
Quick note. We always specify, for the first time you build, to build city Hall. It's the if statement with bool start below.

```

/// <summary>
/// Function to build a building on the map.
/// </summary>
/// <param name="target">Place to build building.</param>
public void Build(Transform target)
{
    int buildingNumber;
    if (start)
    {
        buildingNumber = 0;
        start = false;
    }
    else
    {
        if (selectedBuilding != BuildingType.None)
        {
            buildingNumber = (int) selectedBuilding;
        }
        else
        {
            buildingNumber = Random.Range(1, 6);
        }
    }
    Vector3 pos = new Vector3(target.position.x, target.position.y - 0.264f, target.position.z);
    GameObject building = Instantiate(buildings[buildingNumber], pos, Quaternion.identity) as GameObject;
    //triggers animation while placing the building
    building.GetComponent<Animator>().SetTrigger("Show");
    notifications.AdvanceDialogue(building, buildingNumber);
}

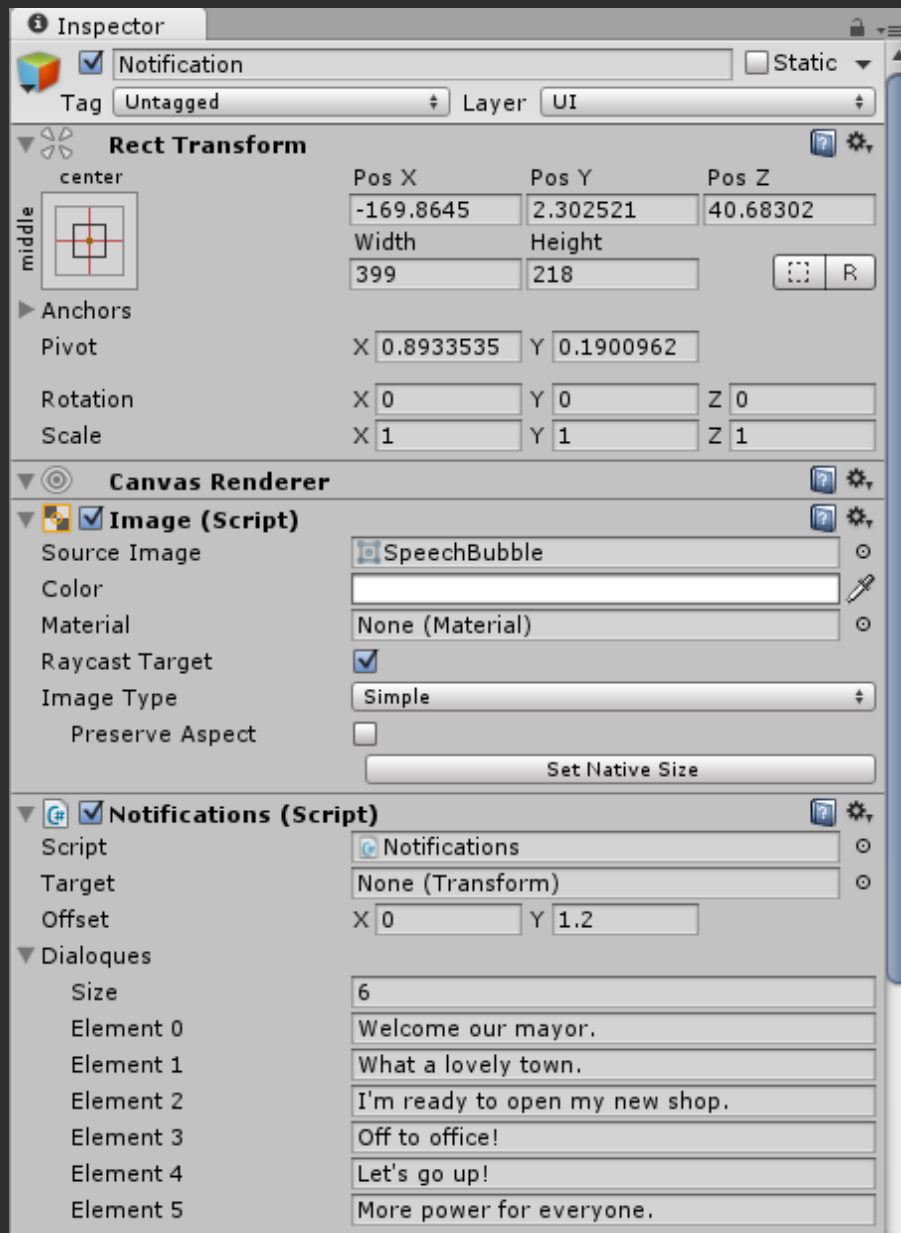
```

Every building has script BuildingManager. There are assigned different parts of models, that should be enabled during building based on the position - bottom, middle, top. Picking the right model and enabling it is done in OnEnable function.



Quick Note. In the scenes: HighQuality and LowQuality buildings under object ExampleCity are just shown once, just at the beginning, that's why the right parts of model are not assigned, because the whole object is not used later.

Under the UI gameObject, you can find notification gameObject. This object is responsible for showing the dialogs. On this object you can specify the texts, which are right now based on the building type, which is index. To show notification you just need to call function AdvanceDialogue .



Where can I use it?

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