TERRA CITY

Introduction

TerraCity Can Create Complex Cities With Having Full Control Over Optimization, Built-n LOD System And Any Kinds Of Editing Right Inside Unity3D. TerraCity Is Not A Mesh Creator Or A Procedural Modeler To Generate Any 3D Models For You, But It Uses Your Pre-Modeled Building Meshes whether Textured Or Not.

First, You Need To Have Your 3D Models Prepared With Correct Materials And UV Maps For All Building Parts In Them. In Unity3D, Set Up Your Buildings And Textures By Importing Them In Their Appropriate Folders Under Resources => TerraUnity => TerraCity Folder.

You Can Have 4 Types Of Buildings Which Are Towers, Apartments, Houses and Unique Buildings. For Each One Of Them There Is A Folder For The Models Itself And Except Unique Buildings, Another Folder For The Textures And Optional Normal Maps Which All Been Separated By Building Materials Of Facade, Roof, Window And Floor.

SETTING UP BUILDING PREFABS/MODELS

Put Building Prefabs In Desired Folders

HOUSE: Resources => TerraUnity => TerraCity => Building-Models => Sub-Urban => Houses

APARTMENT: Resources => TerraUnity => TerraCity => Building-Models => Sub-Urban => Mid-Urban

TOWER: Resources => TerraUnity => TerraCity => Building-Models => CityCenter => Towers

UNIQUE: Resources => TerraUnity => TerraCity => Building-Models => Xtra

SETTING UP BUILDING TEXTURES

Put Building Parts Textures In Desired Folders

HOUSE: Resources => TerraUnity => TerraCity => Textures => Houses

There Are 5 Main Folders For: "Facade" - "Facade-NormalMaps" - "Roof" - "Window" - "Floor"

APARTMENT: Resources => TerraUnity => TerraCity => Textures => Mid-Urban

There Are 5 Main Folders For: "Facade" - "Facade-NormalMaps" - "Roof" - "Window" - "Floor"

TOWER: Resources => TerraUnity => TerraCity => Textures => Towers

There Are 5 Main Folders For: "Facade" - "Facade-NormalMaps" - "Roof" - "Window" - "Floor"

1x1 FOLDERS

Any Textures Under 1x1 Folders Will Be Tiled Only Once. This Is Regardless Of Whatever Tile Number You Set For Tiling Of That Building Part Texture.

NORMAL MAPS

If You Want To Have Normal Maps On Your Buildings Facade Textures, The Normal Maps (Bump Maps) Must Match With Their Textures. You Have To Sort The Textures In "Facade-NormalMaps" Folder Exactly The Way You Have Sorted The Textures In "Facade" Folder. In This Case, Every Normal-Map Will Be Placed Beside Its Real Texture If You Have Chosen A Facade Shader Which Contains Normal Maps.

After Putting Building Prefabs/Meshes, Textures and Normal Maps In All Or Desired Folders, TerraCity Will Detect Them All And You Can Then Preview And Choose Any Building Types To Be Picked For Creating City From The GUI. By Having Separate Folders For Our Models And Textures, You Can Have Different Settings For Density & Texture Engine Individually On Each Building Type Except Unique Buildings Which Are 1 Time Placing Pre-Textured Models.

Note: Always Remember To Put All Files (Prefabs, Textures, etc.) Before Running TerraCity Or Turn It Off By Pressing On/Off Button Above TerraCity GUI To Activate Offline Mode. If You Add/Remove Prefabs Or Models While TerraCity Is Active, It Will Give Some Errors And You Have To Close And Reload The Plugin.

Terrain & Map

`Important` Insert The Terrain That The City Has To Take Place On It

`Important` Insert Buildings-Map For Building Placement Zones

`Optional` Enable/Disable "MAP PREVIEW" And Zoom In And Out To Check The Map

`Optional` Rotate The Image 90 Degrees CCW (Counter Clock Wise) If You Haven't Done That Already

`Important` Pick Desired Placement Color With Favorable Damping Factor

Color Analyzer (Beta)

"COLOR ANALYZER" Will Calculate The Percentage Of The Selected Color In The Image To Give A Little Info About The Map

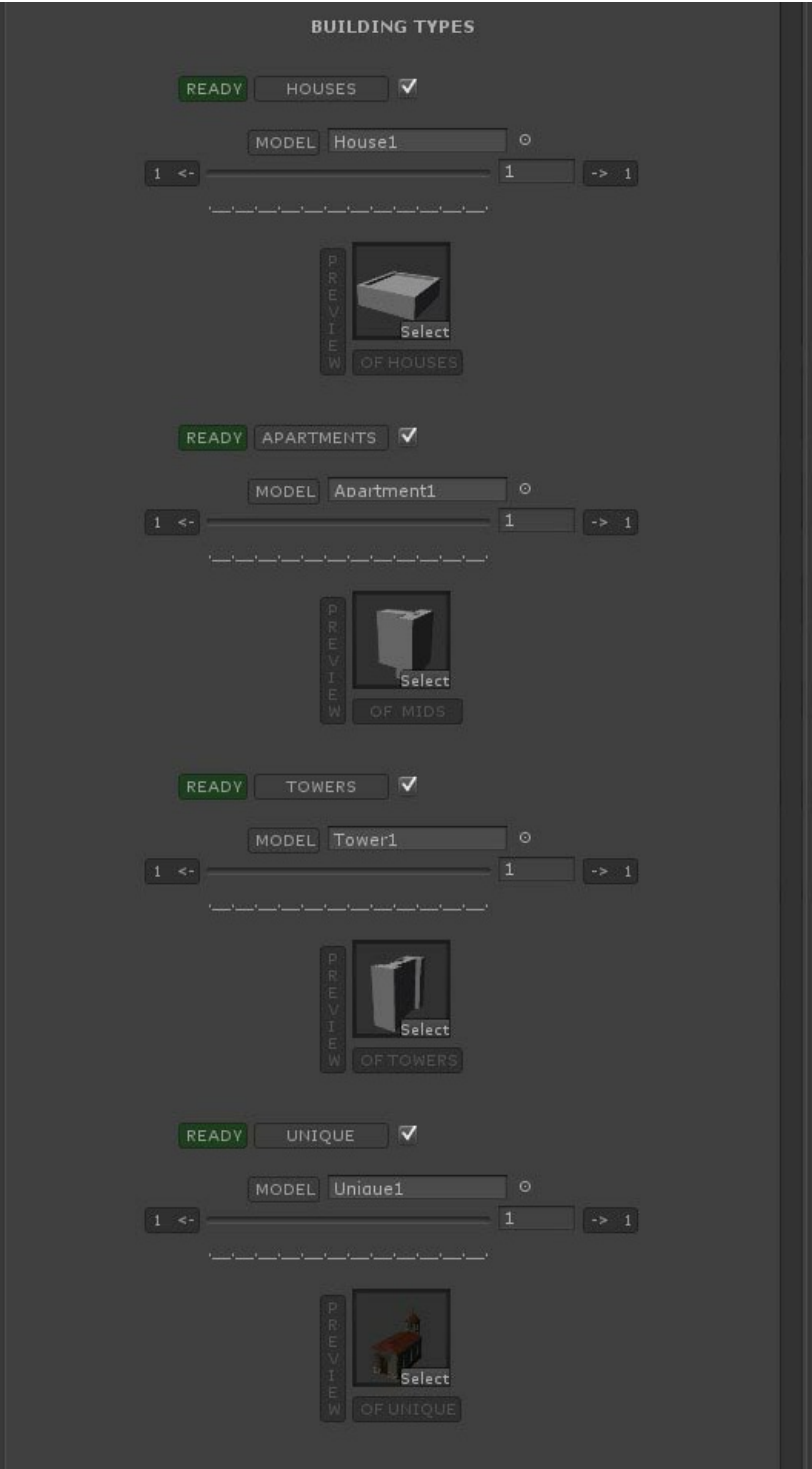Set Analyzer Accuray And Press "ANALYZE" To Show The Percentage Of The Selected Color In Image

Press "GNERATE CITY" When Your Satisfied Width The Settings

COLOR ANALYZER (BETA)

ANALYZE

ACCURACY ——————————— 80 %

13% of Entire Image's Color Is BLACK

⚠ Hit GENERATE CITY When You Are Ready

GENERATE CITY 🏙

Building Types

There Are 4 Types Of Building Types (Houses, Apartments, Towers & Unique Buildings) In TerraCity To Achieve The Most Realistic City Shape.

Select/Deselect Desired Building Types (Houses, Apartments, Towers & Unique Buildings) For City Creation And Check Building Models In Preview Pane

BUILDING TYPES

READY HOUSES ☑

MODEL House1 ⊙

1 <- ———————————— 1 -> 1

PREVIEW Select
OF HOUSES

READY APARTMENTS ☑

MODEL Apartment1 ⊙

1 <- ———————————— 1 -> 1

PREVIEW Select
OF MIDS

READY TOWERS ☑

MODEL Tower1 ⊙

1 <- ———————————— 1 -> 1

PREVIEW Select
OF TOWERS

READY UNIQUE ☑

MODEL Unique1 ⊙

1 <- ———————————— 1 -> 1

PREVIEW Select
OF UNIQUE

Texture Engine

"TEXTURE ENGINE" Will Randomly Texturize Building Meshes With Correct Material And UV Maps For You.

Important Turn On/Off "TEXTURE ENGINE" - If Turned On, TerraCity Will Texturize Buildings From Imported Textures While Placing

Important Select/Deselect Desired Building Parts And Select Shaders For Each LOD's Building Part

Important Set Tiling Value Of Each Building Types' Part And Preview Usable Textures

Optional Enable/Disable "LIGHTEN/DARKEN TEXTURES" And Set Range Factor Which Applies To Building Parts' Textures

Optional Set Transparency Of The Window Glass (TerraCity Comes With A Window Glass Shader To Simulate Glass Reflection, The Transparency Value Will Change The Visibility Of Diffuse Texture)
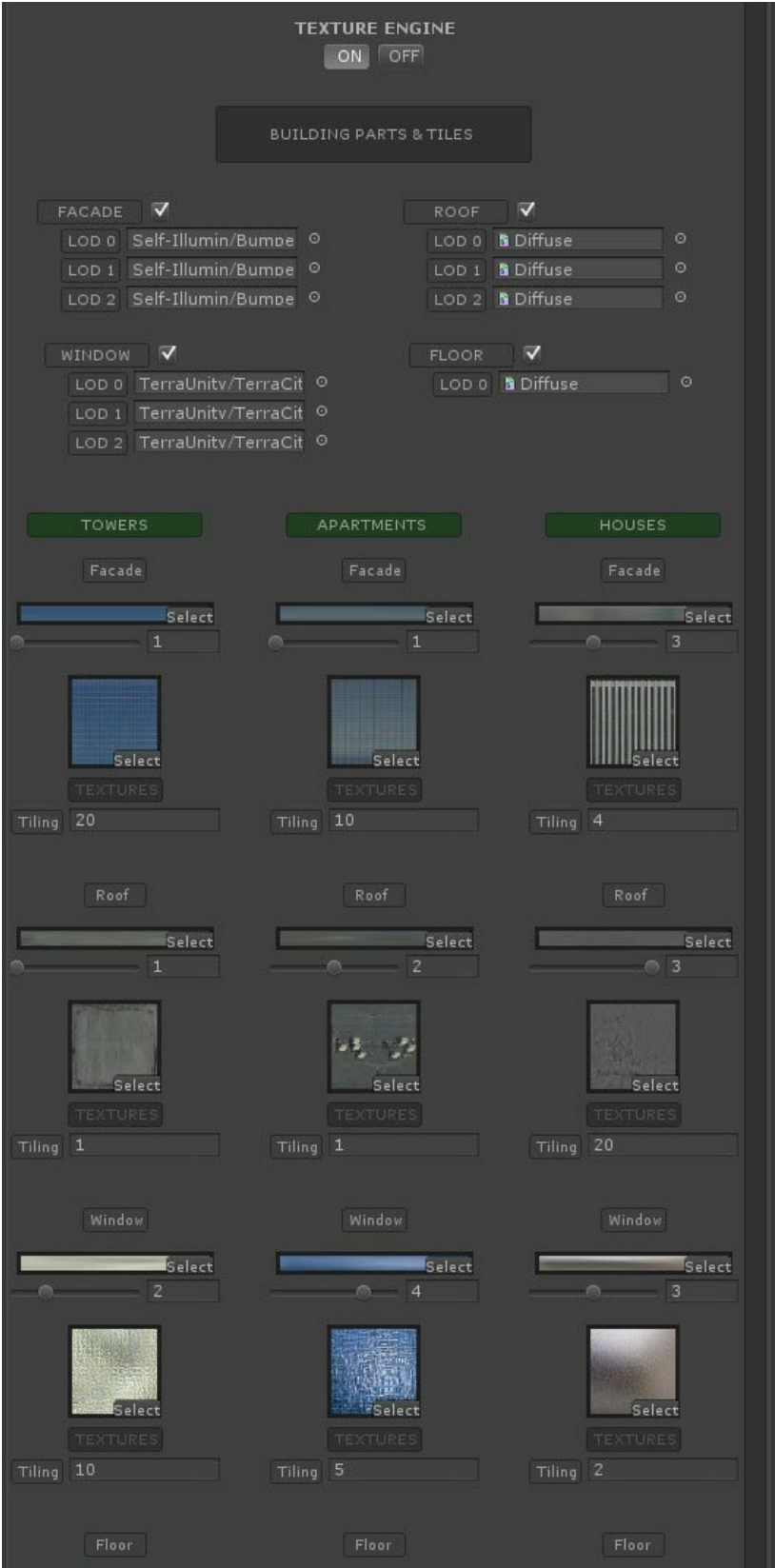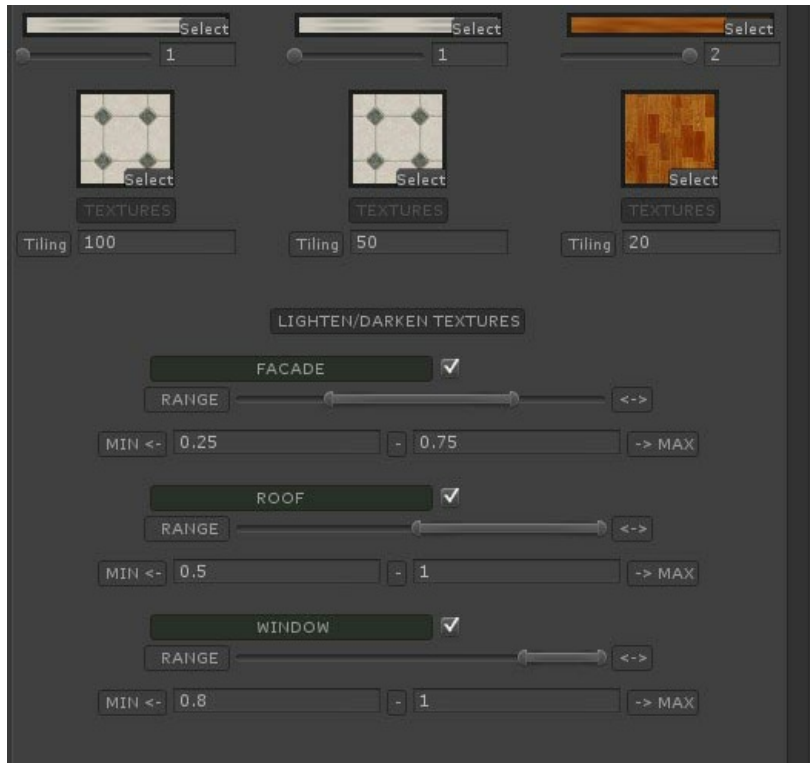
Performance Settings

As We Are Dealing With Multiple Objects As Buildings To Create A City, Getting The Best Run-Time Performance Is Vital. There Are 2 Main Options Of "MATERAL" & "BATCHING" Type In "Performance Settings".

Important Select "MATERIAL TYPE" Between "UNIQUE" & "SHARED"

"UNIQUE": Each Building Part Has Unique Material. Future Manual Editing Of Each Building Texture Is Available (Lower Performance)

"SHARED": Building Parts With Same Texture Share The Same Material. Future Manual Editing Of Each Building Texture Is Unavailable (Higher Performance)

Important Select "BATCHING TYPE" Between "STATIC" & "COMBINE"

"STATIC": Building Blocks And Models Will Be Set To Static Which Prepares These Static Geometries For Unity's Automatic Batching And Calculating Occlusion Culling. (Newer Batching Mode)

"COMBINE": This Will Use Unity's "CombineChildren" Script To Combine The Child Meshes/Materials Of A GameObject. This Script Applies To City's Building Blocks. (Older Batching Mode)

Note: Check Both "STATIC" & "COMBINE" Batching Modes In Each Project To See Which Gives You The Best Performance.
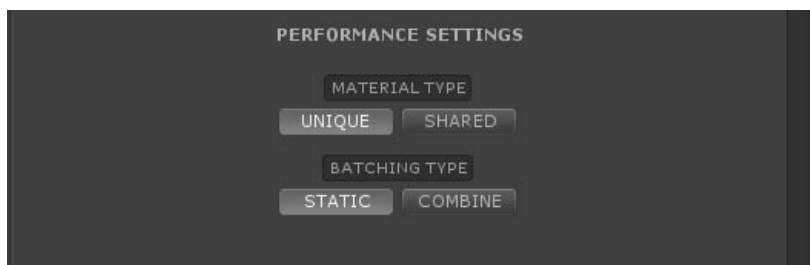
Building Variation

To Get The Most Realistic City Shape, There Are Various Random Algorithms To Change The Placement And Shape Of Buildings.

Important Set Width/Height Initial Scale & Variation For Building Models

Important Set "XZ" Value To Increse/Decrease Random Position Of Placing Buildings - 0 Means Row Placement

Important Set Rotation Range To Increse/Decrease Random Rotation Of Placing Buildings - 0 Means No Rotation

Level Of Density

One Of The Main Factors For A Realistic City Shape Is Placement Density. By Having Unique Density For Each Building Type, The Placement Results Are Close To Reality.

Important Set Placement Density Percentage For Houses, Apartments & Towers Plus "City Center Spread" Option For Towers

Note: "UNIQUE" Buildings Are Readied Pre-Textured 3D Building Models That Can Be Unique Shaped And They Will Be Placed Only Once. This Is Good If You For Example Want To Have Only 1 Church In Your City, So There Is No Density Option For "UNIQUE" Buildings.

Important Press "SET DENSITIES GET STATS" When You have Set Densities For Building Types To Get Info About The City And Prepare The Buildings For The City Generation

Important Set Maximum Number (Limit) Of Placing Buildings
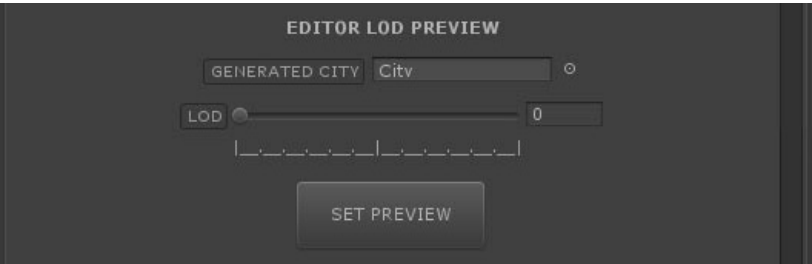
Editor LOD Preview

You Can Select Between 3 LOD Layers For Editor Scene View.

Important Insert The Created City And Select LOD Layer For Editor Preview, Then Press "SET PREVIEW" To Update City preview

Settings

TerraCity Settings

Optional Enable/Disable "Show Console Hints" In Unity Editor Log Messages

Optional Enable/Disable "Sound Notification" When City Creation Is Completed