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Course: BA Computer Games Design

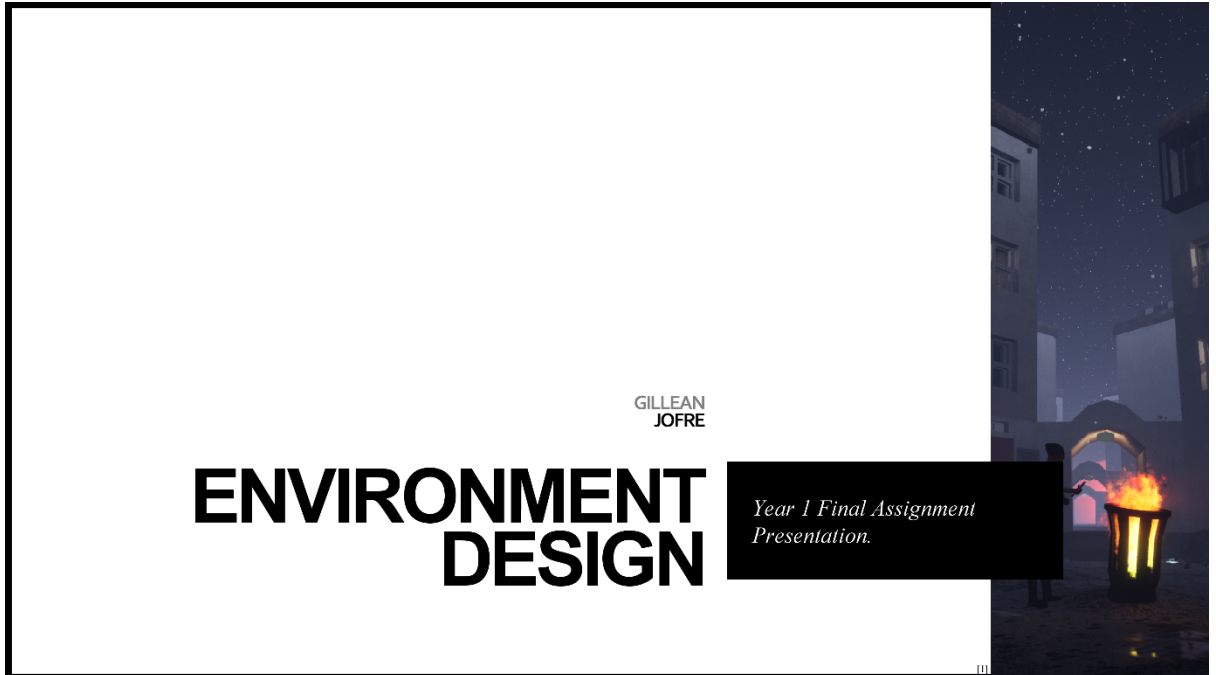
Module: Environment Design (ACCA4032)

Assignment title: 3D Diorama and Presentation.

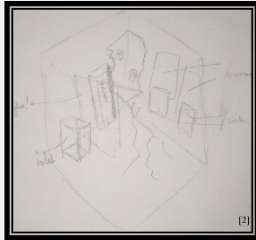
Index:

- 1) Presentation slides
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1) Presentation Slides

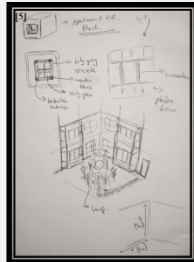
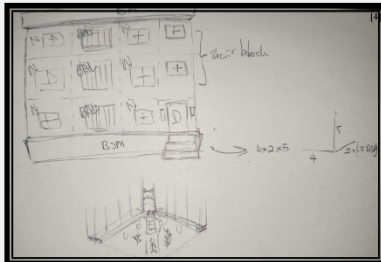


## PREPRODUCTION AND SKETCHES



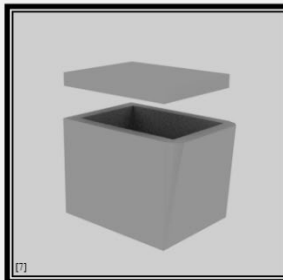
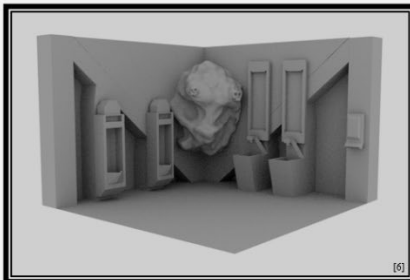
Original idea for my environment design was either going to be a:

- Toilet infested with aliens set in the distant future
- A Creature stalking his pray atop a 1950s "Fallout"-esque soviet phonebox.



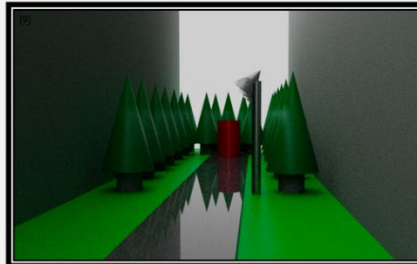
Finalised idea to be an apartment block, based on apartment blocks found in Neveronys, a town in Kaunas Region, Lithuania.

## FIRST IDEAS



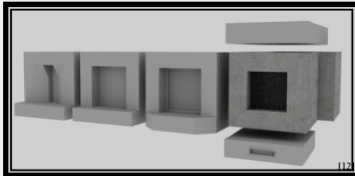
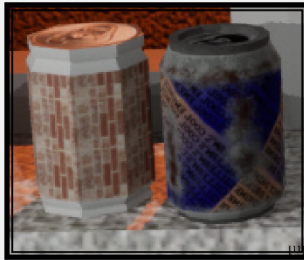
Descriptions:

- 1) An alien creature lurks in the corner of a male bathroom
- 2) A simple toilet
- 3) A futuristic Phonebox
- 4) Simple shapes defining the layout of my scene.



# IMPROVEMENTS AND EXPERIMENTATION

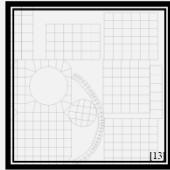
## IMPROVEMENTS : MODELLING



Priorities that guided modelling:

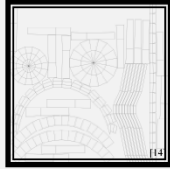
- Ease of UV unwrapping
- As small a file as possible without losing much detail
- Simple geometry
- Allows for texture work to shine.

## EXPERIMENTATION : UV UNWRAPPING



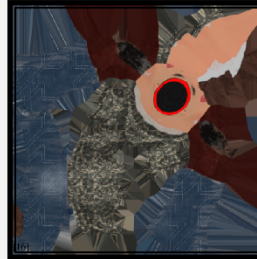
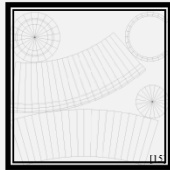
Here are three examples of my UV maps;

- 1) Air-conditioning unit
- 2) Ornamental Bin
- 3) Coffee Cup



Main differencing factors:

- Prioritised detail on every surface
- Prioritised time and efficient, and creating larger pieces.



UV Unwrapped my human model in Adobe Substance 3D Painter, which does an “Auto-unwrap”, that works particularly well on organic structures rather than inorganic.

## IMPROVEMENTS : MODULAR ASSETS

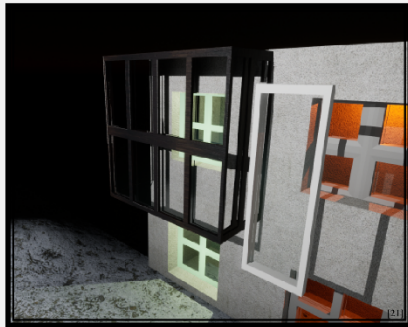


Each apartment block is comprised of groups 5 model categories:

- 1) A “Roof”
- 2) A variation of room block
- 3) A variation of a window
- 4) A variation of a curtain
- 5) A “Basement”

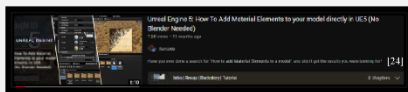
These pieces can be mixed to achieve a more human and “random” feel to the environment

## IMPROVEMENTS : WINDOWS AND GLASS

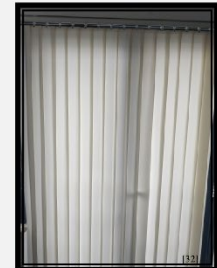


Making glass work in Unreal Engine 5 was a real challenge.

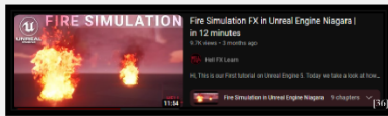
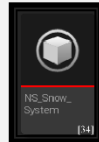
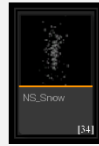
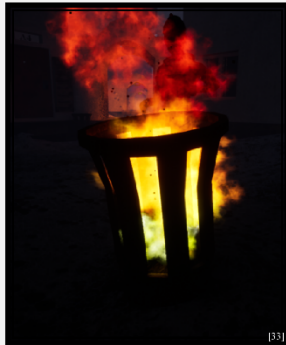
After using a tutorial to create a glass texture, Came the issue on how to have an object with multiple materials, in this case, a window with no alpha maps.



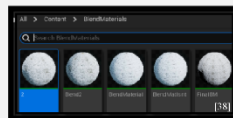
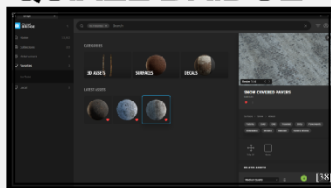
## EXPERIMENTATION : USING REALITY TO CREATE DIGITAL ASSETS



## EXPERIMENTATION : FIRE AND SNOW (NIAGARA)

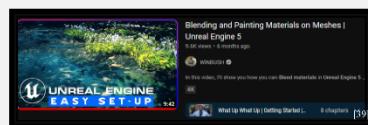


## EXPERIMENTATION : BLEND MATERIALS AND QUIXEL BRIDGE

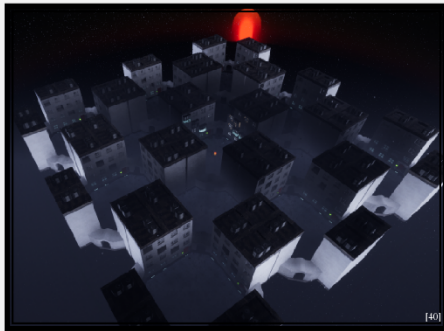


Idea behind this was to find a way to create more complex landscapes easily.

Requires the use of three materials and sets up a multi layer texture with a puddle layer and normal maps.



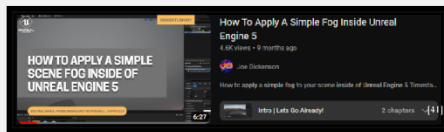
## EXPERIMENTATION : VOLUMETRIC FOG



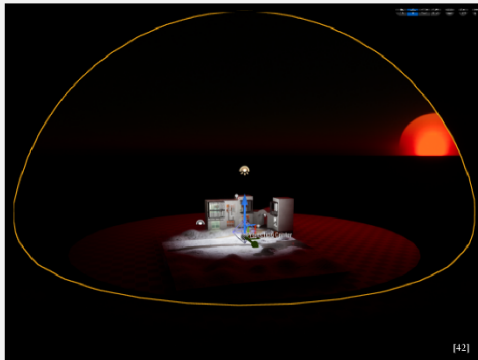
Idea was to hide the fact that the rest of the world besides the one block is:

- Devoid of light
- Does not extend infinitely
- Has less detail than the one purpose built set.

Used this technique of using fog to mask the outside limits of the world, as they do in videogames to hide the loading of a map.



## EXPERIMENTATION : HDRIS IN A SKYDOME

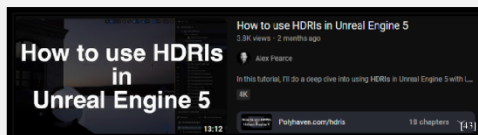


Skydomes in Unreal Engine 5 work similar to Maya with a few differences:

- Much more customisation with Lights and how it affects the world

- Default shape is a dome but it can be changed to any mesh that is present in the project

- More "realistic" looking rendering



# THE FINAL DIORAMA

Environment  
Design

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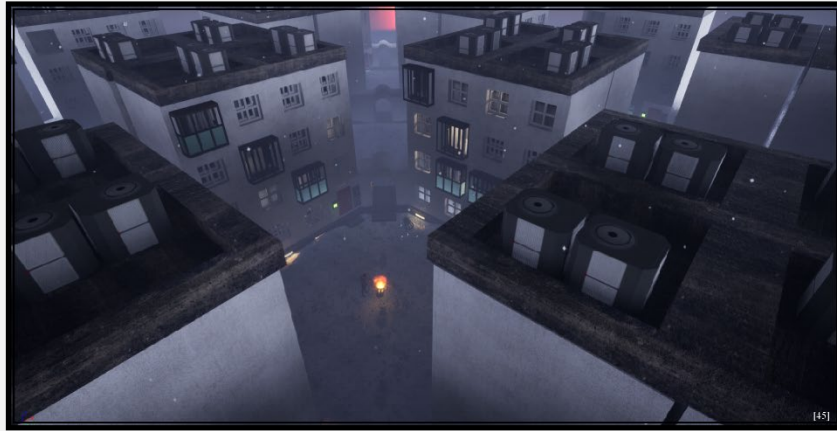
## THE FINAL DIORAMA: INTENDED SHOT



Environment  
Design

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## THE FINAL DIORAMA: FURTHER-BACK SHOT



(To show unseen parts of the environment)

Environment  
Design

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GILLEAN  
JOFRE

# THANK YOU

Any questions?

Environment  
Design

## REFERENCES : SELF-MADE IMAGES/LINKS

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