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ASSIGNMENT 3

The Escape

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Research

For this assignment, I wanted a blend of a naturalistic and a human-made environment. As such, a natural conclusion for the setting was an overgrown abandon/post-apocalyptic building. A station was selected as the location to have both a large open environment along with smaller enclosed rooms.

Overgrown buildings



[1] *Looking out to overgrown city*, [2] *Flooded city street*, [3] *Rundown art deco interior*

Image [1] showcases how I may extend my environment from the playable area, suggesting a once thriving city. Density of plant life appears to conglomerate at the roofs of buildings; however, some growth still extends from windows on the side of buildings.

I like the analogous blue-green colour harmony of [2], particularly high saturation of the foliage and the river in contrast with the grey concrete of the buildings. The clear reflection of the river adds some depth to the scene, “extending” the height of the buildings. The fog settled above the water reflects the blue hue of the river.

The exposed building frame of image [3] allows for some natural lighting into the building whilst still suggesting structure to the building. It should be noted that subsurface scattering is occurring with the leaves, so translucency should be considered with the foliage.

Railway yard



[4] *Overgrown railway station hangar*, [5] *Overgrown station platform*

I particularly like the clear distinct sunrays leaking from the ceiling of [4], which clearly suggest how the scene is lit through the holes in the roof. The openness of the station makes me feel invited to explore and wander the whole station.

The bright vibrant colours of human-made objects is distinct through the dense growth within image [5]. This draws our attention to these objects, peaking a sense of interest of the history of the station before it was abandoned and overgrown.

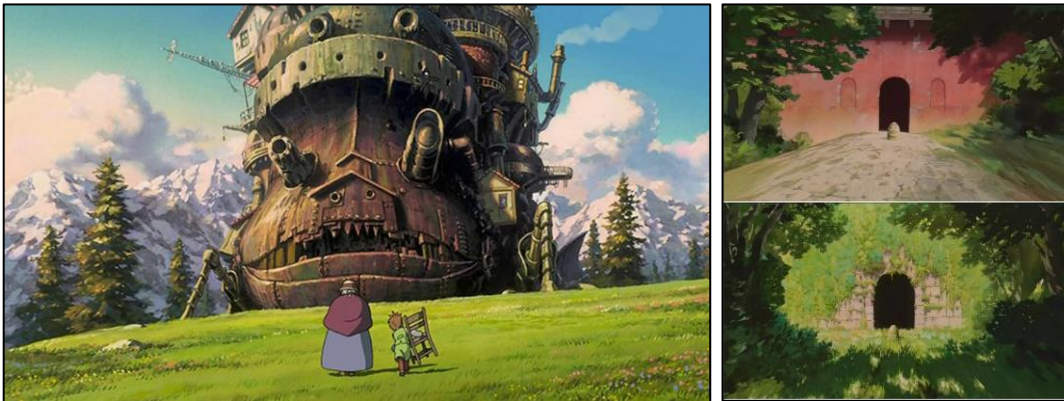
Art Nouveau



[6] Entrance to the Paris Metro, [7] Exterior detailing of railway station

An art nouveau architectural style was chosen for the station in terms of both material and detailing. The combination of sandstone like base material along with the turquoise trimming appear as key characteristics of an art nouveau aesthetic. Statues appear coated in gold as in [7]

Ghibli artstyle



[8] Howl's Moving Castle, [9] Spirited Away

I wanted to use a Ghibli watercolour art style for my scene for a dream-like appearance for the scene. Although an anime/toon style typically features distinctive outlines for objects, the Ghibli style lacks this, favouring light pastel colours for shading.

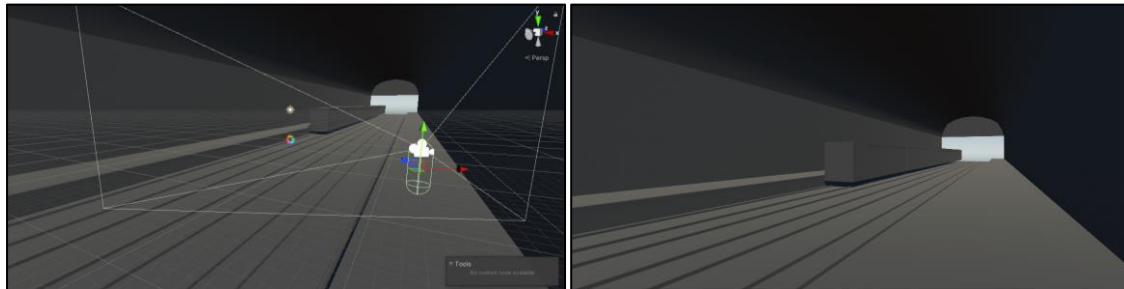
Additional reference images

Here are some additional images used as reference used for this project.

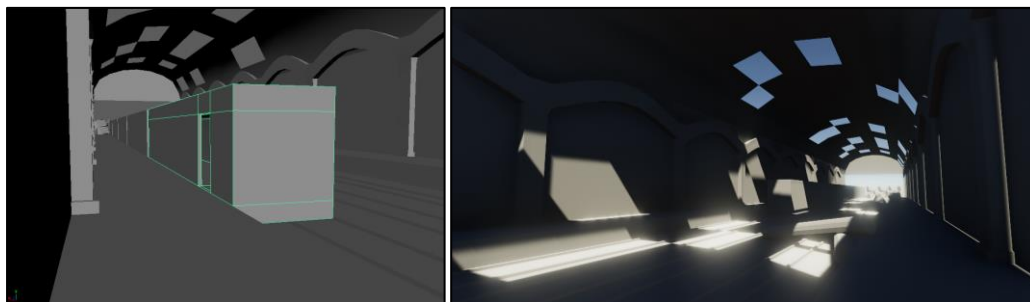


[10] Abandon house with TV frame, [11] W-class Melbourne tram

Greyboxing

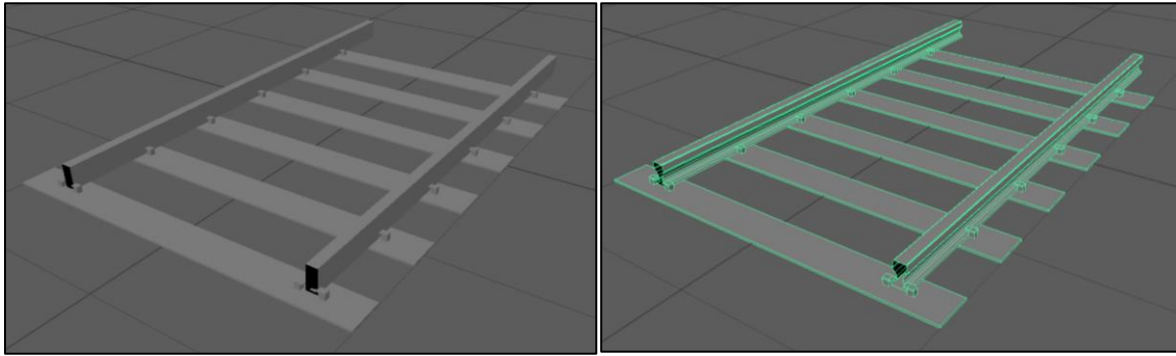


The scene was greyboxed out to test the size of the scene. Initially the scene was designed for 4 rail tracks but was found to be too wide, resulting in me reducing the size to 3 rails wide. Additional feedback suggested to reduce the size of the greybox zone and to collapse part of the ceiling and wall for an exterior environment.

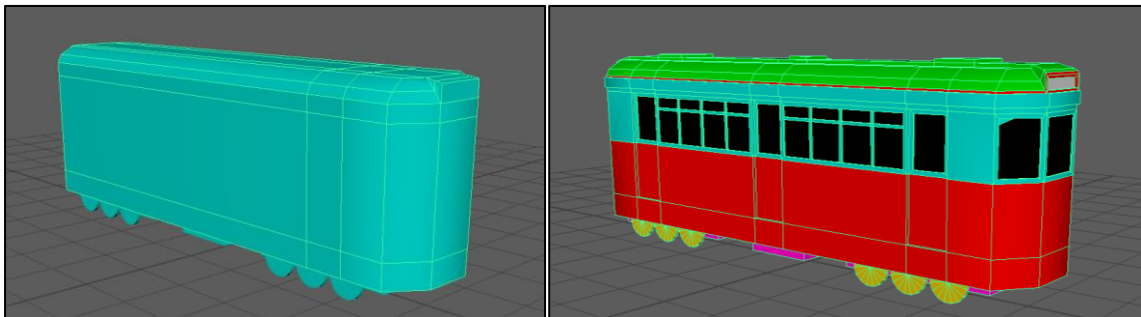


The means of escape from the scene is to be a train carriage which the player starts (with a cutscene showcasing the train exiting the station). A high bloom and lighting effect was tested to achieve the lighting effects in [4].

Prop modelling

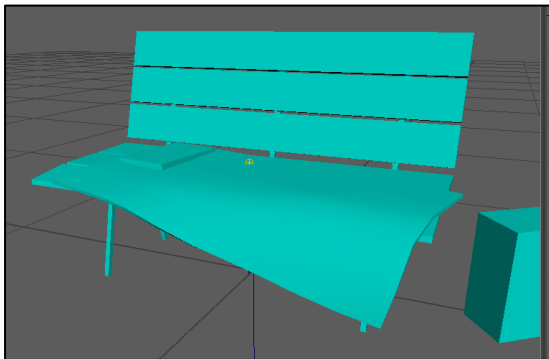


To avoid excessive use of high-poly models, both a low-poly and a high-poly model were developed to allow for baking detail onto the low-poly model in Substance painter. One such example as showcased above is with the rail heads, where we bake the detail onto simple rectangle primitives.



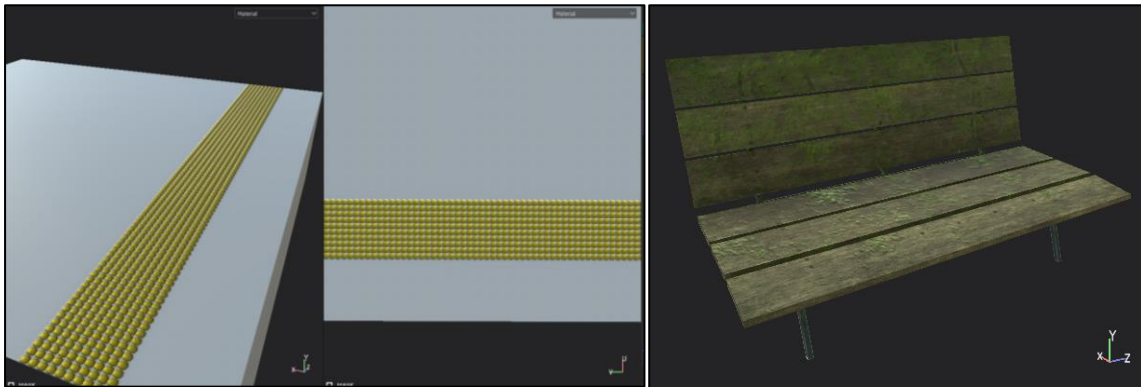
In addition, different materials were marked with different colours to allow for easy masking of materials in substance painter with id mapping.

Ncloth simulation



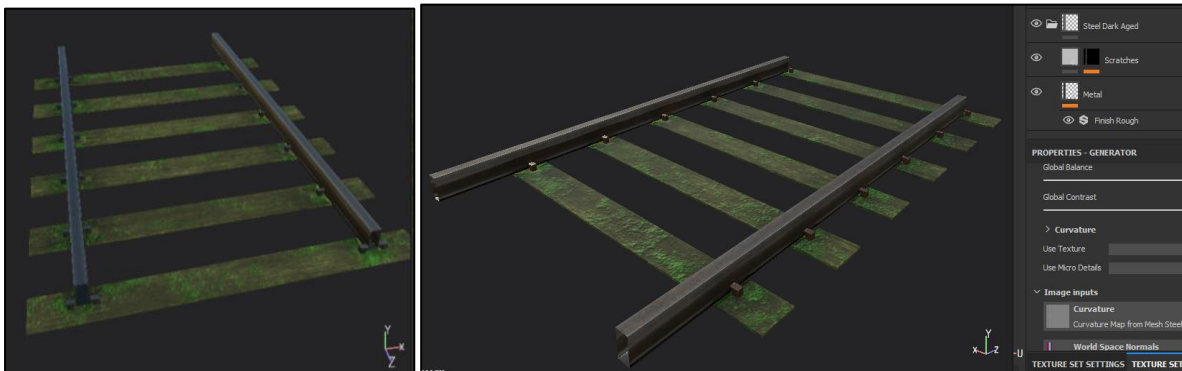
To create a blanket, a ncloth simulation was done to shape a blanket on the bench. The bench was set as a collider, and a flat divided plane was set as a ncloth object. This was then played to hang over the bench.

Substance Painter



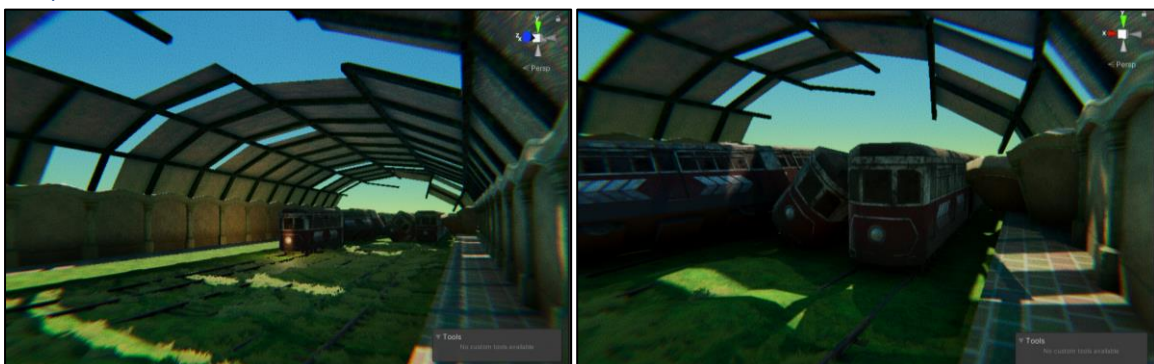
Use of Id map of high poly mesh with colour selection assisted with easily specifying materials of meshes. To ensure consistency between the texture of meshes, smart materials were created such as a moss material, wall material, and brick material.

Rails



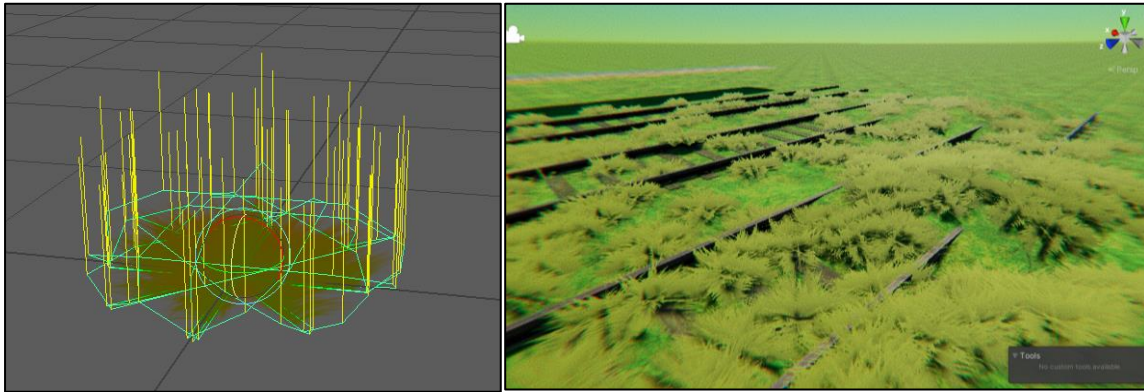
Baking the shape of the rail heads onto the low poly mesh, I was able to provide the illusion of shape on a low poly mesh. An olive colour was used for the appearance of rotting wood. This in tandem with an altered coloured smart material for moss from my previous assignment assist in conveying the station as overgrown.

Prop variation



Props such as the roof were separated into individual components to allow for variations within Unity. Panels and framework were rotated and removed to convey decay over time. This was also the case with the trains and the wall to convey that some disaster had occurred to further damage the abandoned place.

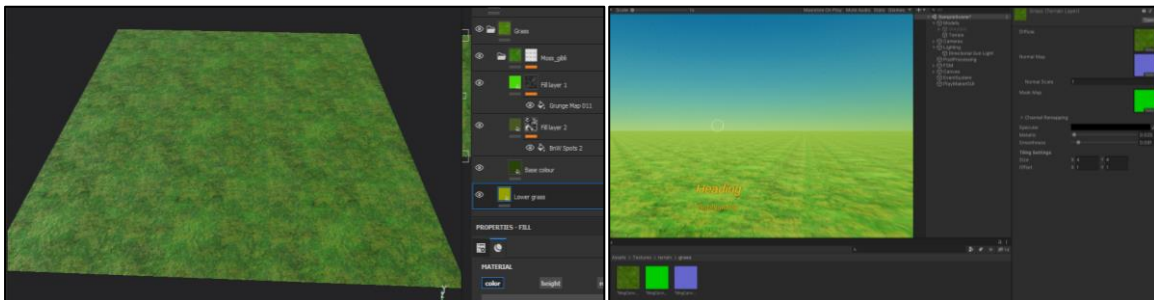
Grass tufts



Using the provided alpha by the FIT3169 team [[12]], I combined alphas and created a grass clump with flat planes to scatter around my scene. The vertex normals were set to point upwards for light to scatter at top of grass blades. The package Prefab Painter was then used to place the grass randomly.

Terrain texture

Terrain textures such as the grass material were created by reusing smart moss material with matching grass colour alongside the tiling texture mesh. This was then exported out with Unity HD Render Pipeline (Metalic Standard) for a matching texture format for terrain layer data (Mask texture) before being applied to the terrain in Unity.



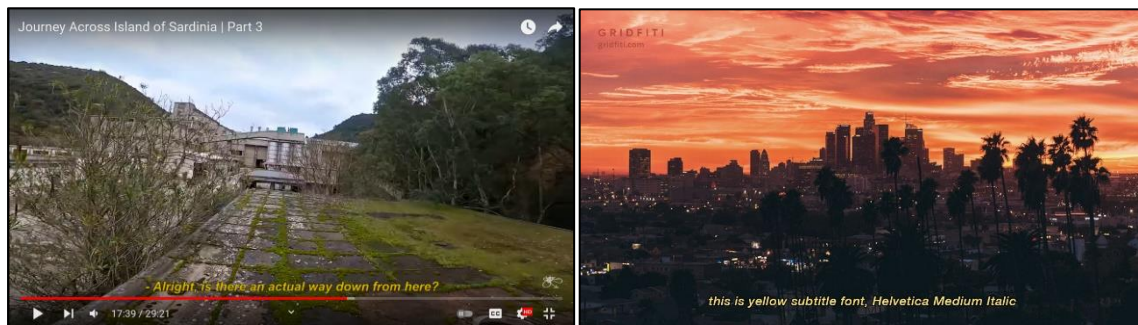
Unity

Packages

- nTools is a prefab painting tool to allow randomised and quick placement of prefabs. This was especially useful for the placement of numerous trees and grass bushes.
- Playmaker served as the foundational tool for setting up interactions within my scene. Creating finite state machines to trigger event behaviour allow for the player to interact with the environment.

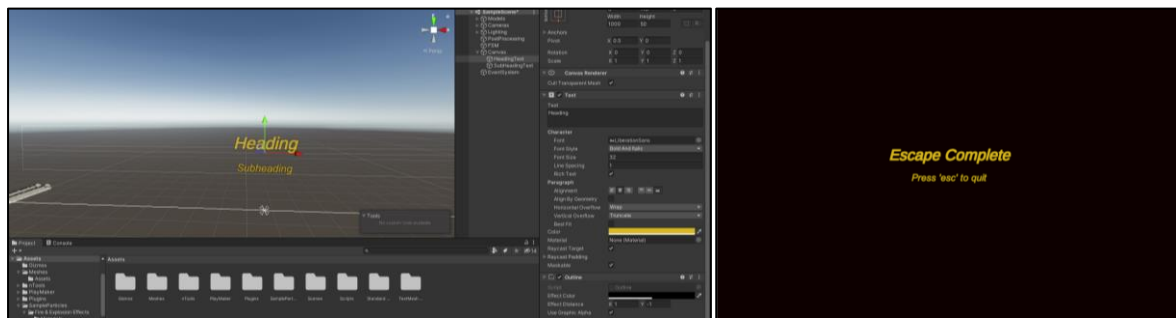
Player camera

UI text



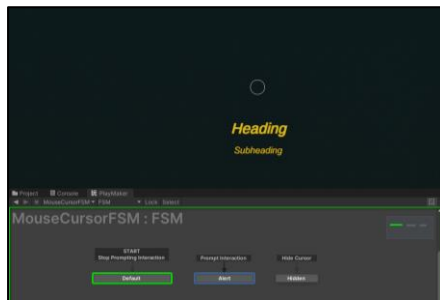
[13] *Urban explorer footage of abandoned factory*, [14] *Skyline with vintage font*

For my character, I wanted the appearance of an old found footage of an explorer as in both [13] and [14]. Although I don't access to the exact font used, a similar effect was achieved with the font Liberation Sans when bold and italic. This was given a mustard yellow colour (a slightly darker shade for the subheading) with a black outline to remain distinct and easy to read for any location.



Upon completion of the game, separate completion text is displayed in the centre of the scene to be the primary focus when the level ends.

Mouse cursor



Following and using the materials of the week 10 studio [15], I setup and used the minimalistic mouse cursor for the scene. I thought this was suitable as I wanted a slightly visible cursor able to indicate where the player was looking but also not distract them from the scene.

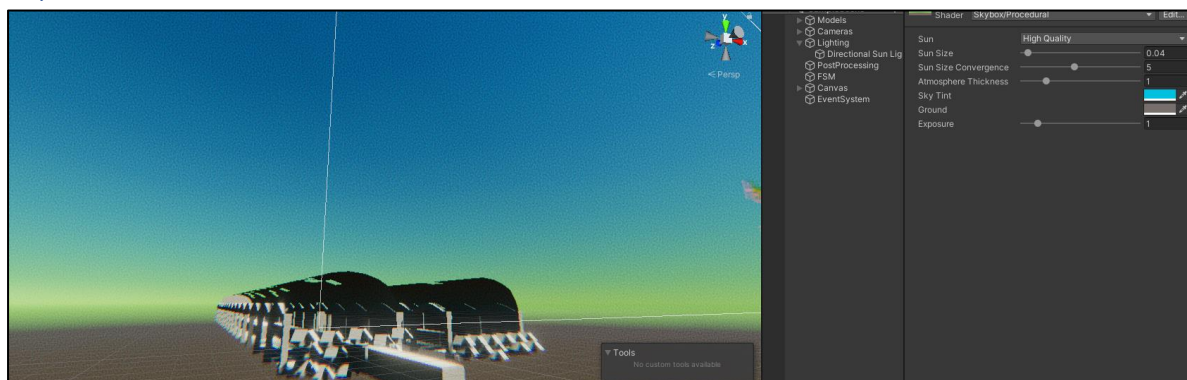
Post processing

For my found footage perspective, I wanted the appearance of a vintage VCR recording. As such, I require to create the effect of an old camera without being nauseating to look at. The following effects were used to achieve this:

- **Chromatic aberration** was added to convey the effect of a low-quality camera lens due to the natural phenomena resulting in fringes in colour.
- **Grain** provided the appearance of a low-resolution image; a low grain size was used to allow for detail to still be visible whilst still being noticeable to the player.
- **Depth of field** conveys the camera lens focusing at a set distance away from the camera.
- **Lens distortion** was added to convey the effect of a wide-angle lens causing barrel distortion [16] such as that of a GoPro fish-eye lens.

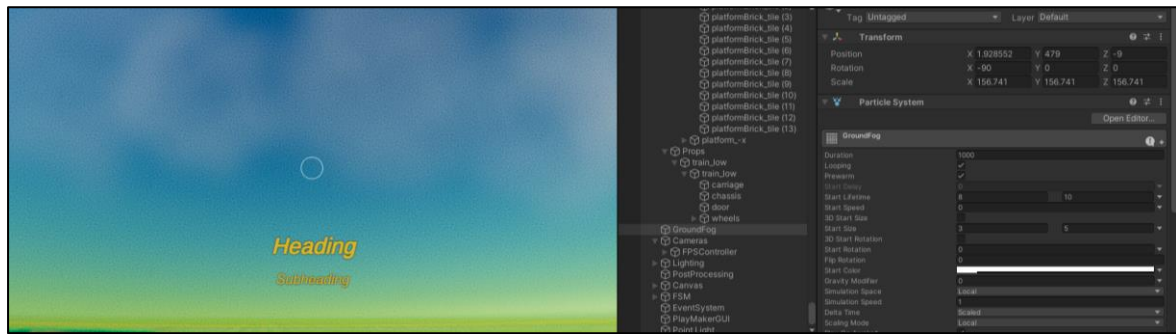
Additionally ambient occlusion was used to better defined the shapes of objects. Bloom was also added to create a glow effect from light sources. A high diffusion was used to increase the glow from sources for a dream like appearance.

Skybox



A bright blue sky was used as this intends to be a natural environment. A brighter hue was used for a more cartoon and watercolour effect to follow the Ghibli artstyle.

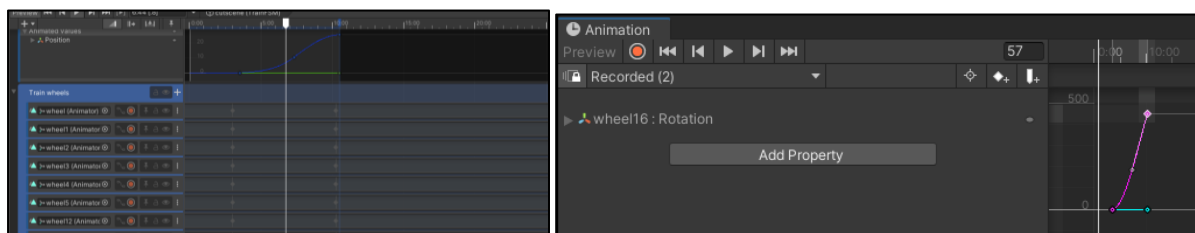
Cloud particles



The clouds were created with the ground fog prefab from the provided particle package [17]. Their position was adjusted to the sky, emission was set to white, increased lifetime, and reduced number of particles.

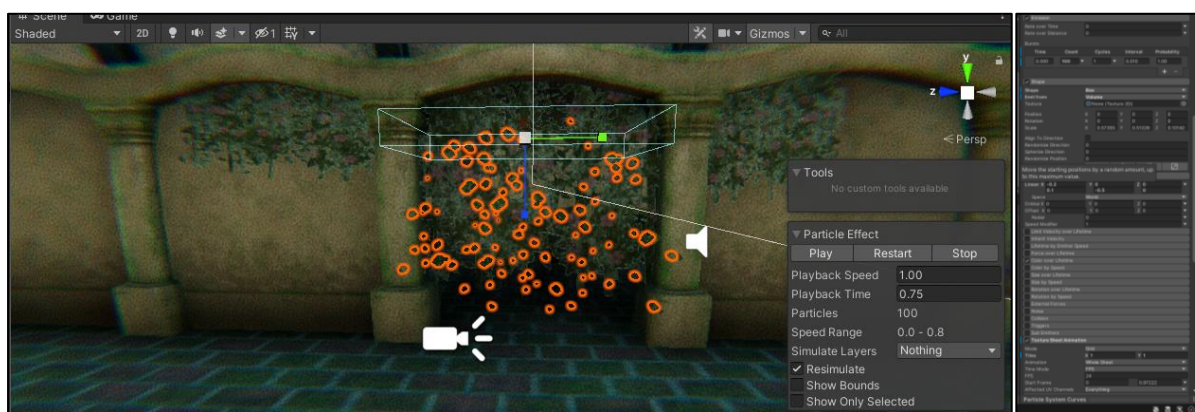
Animation

Animation timelines were used to create the looping blinking effect for the train headlight, train door opening, and the escape cutscene. The train state machine sets the timeline to use and the behaviour of the timeline (i.e. looping). For the final cutscene, the wheel rotation was animated to gradually speed up rotation as the train got faster when leaving the station.



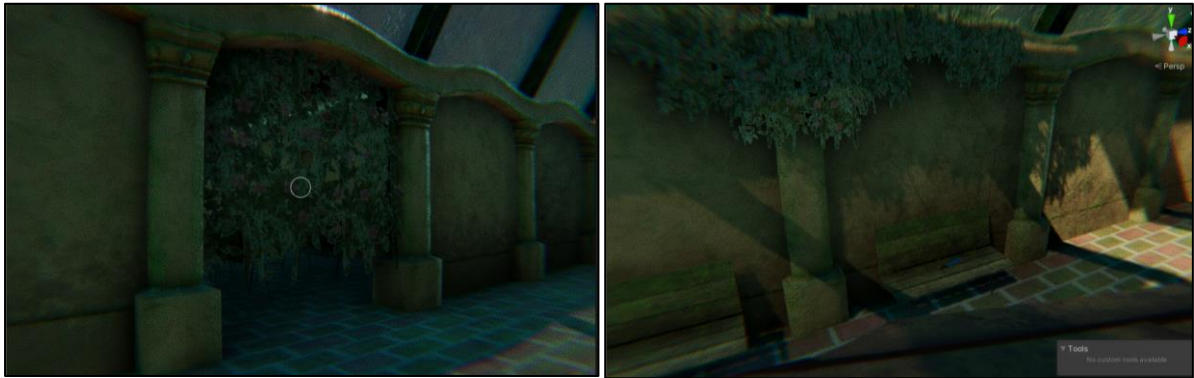
Particles

As previously mentioned, the ground fog prefab was used to form the clouds of the sky. In addition, I reused the dust burst from FIT3169 studio 10 [15] to convey the action of shaking the sleeping mat once it was picked up.

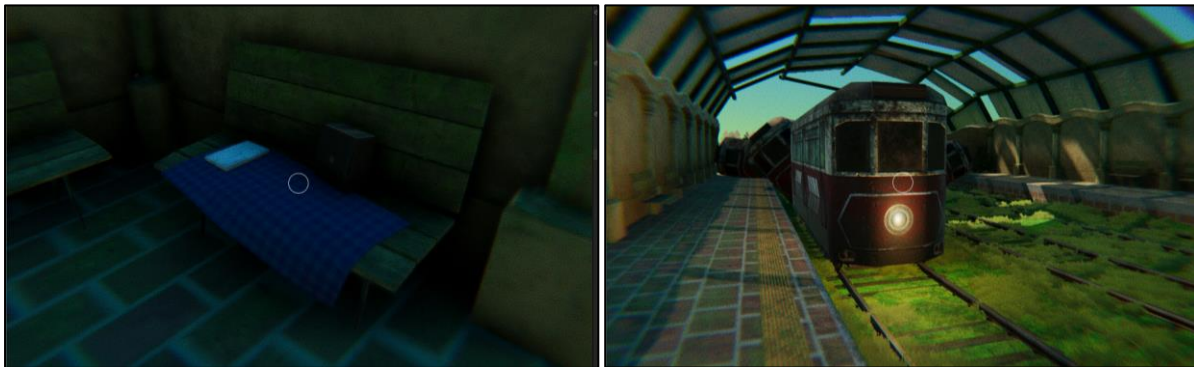


Using a leaf texture and the dust burst particle effect, I created a leaf burst when cutting the vines. This use a custom leaf particle material, an increased number of particle from the burst, and a downwards velocity.

Interactions



For the player to get their belongings, they need to go inside the station which is blocked by vines currently. To clear this, the player may find a machete to cut the vines. This resides on a bench indicated by a large amount of vine growth from the ceiling



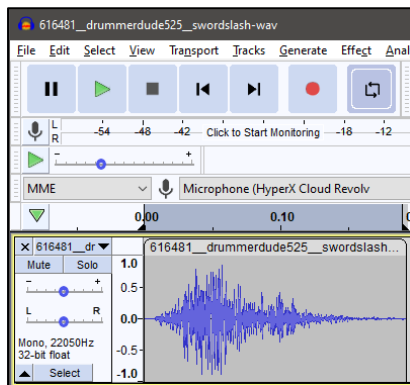
The player may then grab their belongings from the bench before they can board the train. This is indicated by the train light going solid.

The player may then interact with the train door to open and escape. The player's camera fades out to fade into a cutscene showcasing the train leaving the station.



Sound effects

Sound effects



A sword effect [18] was used to convey action when slashing at the vines with the machete. Many other sound effects features sound to that of metal collisions, however, this would not match slashing at a biological material such as vines. The sound effect used better reflected the action and was trimmed for the immediate sound.

Other sounds include:

- A sword sheathing noise was used for initially picking up the sword to also convey the action of picking up the sword [19].
- A pneumatic door opening whilst the old train door opens [20].
- Rummaging whilst packing the sleeping mat away [21].
- Train leaving the station [22].
- Notification sound [23].

Ambient sound effects

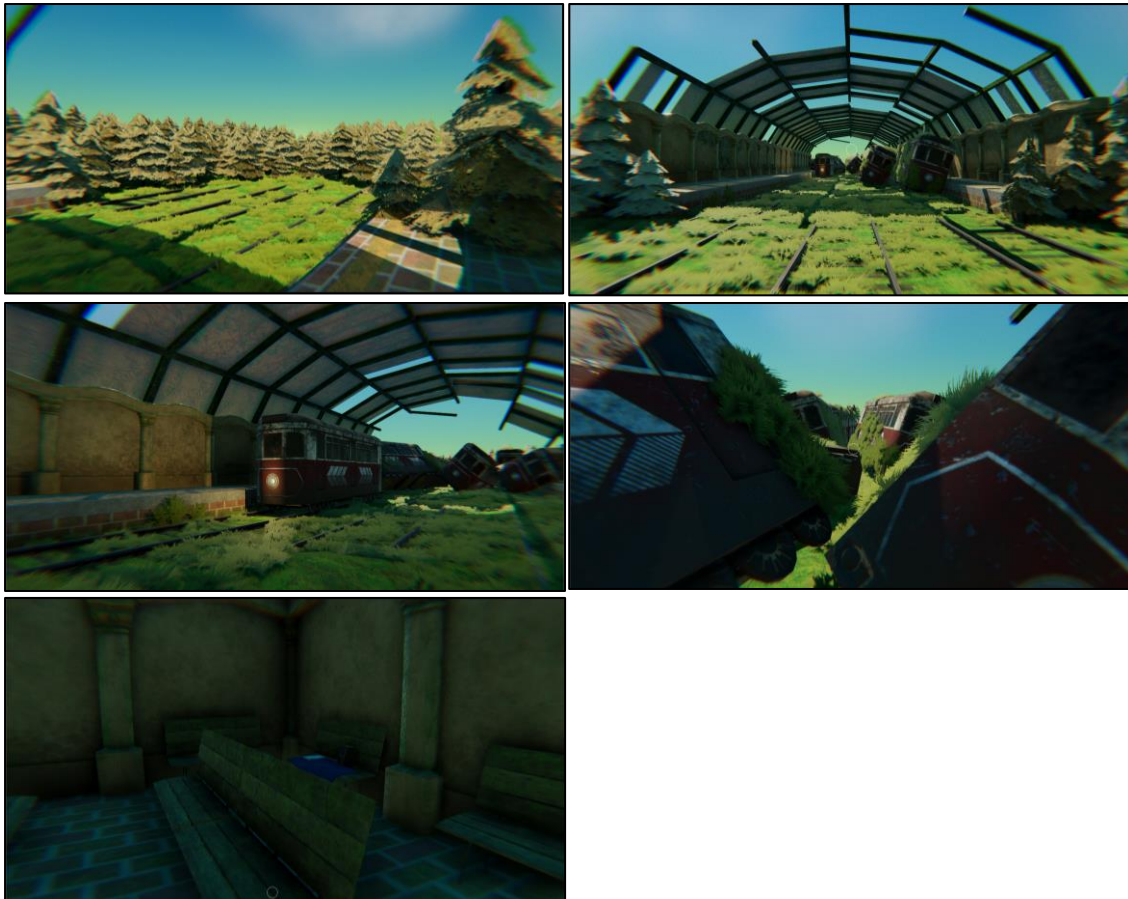
A wind blowing sound effect [24] was used as the ambient sound of the landscape to convey the player being alone in this landscape. The scene is intended to convey the area is devoid of wildlife, as if something scared them off from the location. To prevent the scene from having no noise, the wind effect was used to add sound and assist in conveying motion with the clouds.

Final result



The final environment presented an abandoned overgrown station where the player was staying, requiring them to grab their belongings before riding a train out of the station. The post processing aims to convey a found footage perspective, colour scheme aims to convey a naturalistic and peaceful scene. Additional improvements could include additional variations in foliage for more variety in the landscape

Additional images



Links

- [1] Rutger van de Steeg, *Overgrown City Cover Art*, Available: <https://www.artstation.com/artwork/OX8zky>
- [2] cocco91, *Ruin*, Available: <https://www.pinterest.com.au/pin/227431849904962476/>
- [3] Mulderphoto, *Ruined mansion hall interior overgrown by plants. Nature and abandon architecture, green post-apocalyptic concept*, Available: <https://stock.adobe.com/au/images/ruined-mansion-hall-interior-overgrown-by-plants-nature-and-abandoned-architecture-green-post-apocalyptic-concept/234405651>
- [4] Vladimir Manyuhin, *Life After the Apocalypse*, Available: <https://www.iliketowastemytime.com/2013/03/12/life-after-apocalypse-vladimir-manyuhin-17-pics>
- [5] Eddie Mendoza, *Last train*, Available: <https://www.artstation.com/blogs/ergalnares/jNZz/leartes-and-dekagon-studios-post-apocalyptic-challenge>
- [6] Kim Rogerson, *Entrances to the Paris Metro*, Available: <https://www.architecturaldigest.com/gallery/art-nouveau-paris>
- [7] Eddy Van 3000, *Antwerp. Railway station.*, Available: <https://www.flickr.com/photos/e3000/401088196/in/photostream/>
- [8] Studio Ghibli, *Howl's Moving Castle*, Available: <https://daily.slickdeals.net/streaming/stream-miyazaki-films-in-the-us-netflix/>
- [9] Studio Ghibli, *Spirited Away*, Available: <https://seemsobvioustome.files.wordpress.com/2013/11/tunnel-to-spirit-realm.jpg>
- [10] N/A, N/A, Available: <https://ashtales.com/post-apocalyptic-movies>
- [11] Wikipedia, *W-class Melbourne tram*, Available: https://en.wikipedia.org/wiki/W-class_Melbourne_tram
- [12] FIT3169, *Grass Alpha*, Available: <https://drive.google.com/drive/folders/19KLloeK3yFAavCX3w4FaW-1UtkHzmoV2>
- [13] Shiey, *Journey Across Island of Sardinia | Part 3*, Available: <https://www.youtube.com/watch?v=8xPvrkbbTkY>
- [14] jenesais, *Vintage Yellow Subtitle Font | Most Aesthetic Text*, Available: <https://www.pinterest.com.au/pin/833447474783109813/>
- [15] FIT3169, *An interactive theatre*, Available: <https://lms.monash.edu/course/view.php?id=135530§ion=16>
- [16] Jen Read, *Lens distortion: What every photographer should know*, Available: <https://clickitupanotch.com/lens-distortion/>
- [17] FIT3169, *FIT3169 Particles*, Available: <https://lms.monash.edu/mod/folder/view.php?id=10172448>

Sounds

- [18] DrummerDude525, *swordslash*, , Available:
<https://freesound.org/people/DrummerDude525/sounds/616481/>
- [19] 32cheeseman32, *SwordSheath01*, Available:
<https://freesound.org/people/32cheeseman32/sounds/180829/>
- [20] Tomlija, *pneumatic train door close*, Available:
<https://freesound.org/people/Tomlija/sounds/110107/>
- [21] Chinique, *Sleeping Bag*, Available: <https://freesound.org/people/Chinique/sounds/367044/>
- [22] TomchikRec. *Amtrak Train Departure*, Available:
<https://freesound.org/people/TomchikRec/sounds/319147/>
- [23] InspectorK, *Bell, Candle Damper, A (H4n)*, Available:
<https://freesound.org/people/InspectorJ/sounds/411088/>
- [24] Jorge0000, *Wind blowing*, Available:
<https://freesound.org/people/jorge0000/sounds/361053/>