

Purgatory



Contents

Introduction.....	3
Inspiration.....	6
Research.....	9
3D Modelling.....	16
Level Design.....	32
Lighting & Visual Effects.....	48
Blueprints.....	59
Narration.....	73
Cut Content.....	79
Final Thoughts.....	81

Introduction

If there was one word to describe the process of this project, it would be iteration. The project was rescope and the process rethought numerous times . Unforeseen challenges crept out like a monster crawling from under the bed to claim an unsuspecting victim. The victim knew that this may happen, so making sure his wardrobe was empty, lights were left on, and the bedroom door was locked, he drifted off to sleep thinking he had nothing to worry about , but the creature emerged from a more obvious place. Why didn't I check under my bed?

To understand why I chose to do a horror themed level for my final year project lets start at the beginning. I have been a fan of the horror genre since an early age. From growing up reading R. L. Stine's Goosebumps books to watching Saturday morning cartoons such as Tales from the Crypt keeper and Mighty Max. These pieces of pop culture would shape my love for what I consider the most flexible genre in books, film and especially videogames.

The final year project was to create a piece of work that would represent myself, showcase my passion and assist me in learning something new along the way. My mind was blank. Where would I even start with such a huge task? I had to go back to the beginning, this brought me to the horror genre and a piece of narrative I had created in a previous University module.

The narrative took place in five different locations, A Care home, a 1950's English Theatre, Hospital, Bedroom, and family home. The protagonist, Mary, was being haunted by the past and chased by a malevolent creature through said locations. My initial project idea was to bring this story to life by re-creating these locations in an interactive 3D space using a game engine. I wanted to create a living breathing world for players to explore in and to also pay homage to my favourite horror games through atmosphere and ambience. This would prove to be a difficult task with a realisation that I wanted to do too much within a fast-approaching deadline, resulting in cuts and a refocus on employability rather than passion. I ended up being the killer from a slasher movie, except instead of chasing and chopping up annoying teenagers I was instead brutally chopping pieces from my own work to get the project finished on time and to a high standard.

The following pages will show the components that went into creating this project beginning with an explanation of the three different iterations due to rescope and re-focus and the end result.

Purgatory

Iteration 1

I find the best way to scope a project is to begin with the most difficult task. My strongest skills are in design, mostly level design so I wasn't too worried about this aspect of the project in the beginning. The hardest task came in an expertise I was briefly familiar with but incredibly interested in, this was 3D modelling. As part of my goal to learn new skills I wanted to create some of my own assets to place in the 3D spaces. Using Blender Software to model, Substance Painter to paint the model and the Unreal Engine to import them, I began to list some of the items I would need for each location. Next was to start blocking out some of these locations to get a sense of scale to the project in the Unreal engine using basic geometry blocks. I started with the largest area, the Theatre. This began with early sketches of the layout by referencing layouts from real English Theatres such as the Drury Lane Theatre.

Iteration 2

As the theatre block out progressed, I began to realise the Theatre would take up almost all of my time meaning I would have to either cut the level from the project and start smaller rooms or carry on with the Theatre as the sole location for the project. After much consideration I decided to focus on the Theatre after already starting a block out for the location. This meant I would have to change the goal of bringing my Twine story narrative to life and instead take inspiration for the Theatre section of the story. Having felt as though I had cut enough work down to make the project move faster and easier, I decided to challenge myself to make all of the assets needed for the level as opposed to only a few. I created a prioritisation chart for the Theatre assets needed and began to delve into making them in the Blender software. The project was going well but making the textures in Substance Painter was quite difficult as a beginner, there were also difficulties in importing models into the Unreal Engine as materials needed to be set up as well as collision boxes needed to be modelled and added manually for each model. This was something I had not predicted and was the first sign that my project was still out of scope.

1	Asset Name	Must have	Should have	Could have	Won't have
2	Chandelier		Yes		
3	Stage curtains		Yes		
4	Decorative ceiling		Yes		
5	Mannequins		Yes		
6	Bar and cabinet		Yes		
7	Seats	Yes			
8	Reception desk	Yes			
9	Lights	Yes			
10	Stage	Yes			
11	Stairs	Yes			
12	Doors	Yes			
13	Carpet	Yes			
14	Pillars	Yes			
15	Wallpaper	Yes			
16	Private box	Yes			
17	Railings	Yes			
18	Posters			Yes	
19	Paintings			Yes	
20	Diary			Yes	
21	Stage props			Yes	
22	Dressing table			Yes	
23	Mirror			Yes	
24	Piano			Yes	
25	Clothing rack			Yes	
26	Drinks/glasses			Yes	
27	Programme			Yes	

Iteration 3

After I had made most of my assets and had them at a high standard as well as most of my theatre completely blocked out I began playtesting. The reason I did it in this order was because I knew that the assets would be the most time consuming, little did I know this was only the beginning. As I walked around the level exploring the layout, getting a feel for player flow I noticed that the frame rate and performance had dropped considerably. Whilst it was nothing game breaking I had hardly finished the project and needed to import more assets as well as lots of lighting and visual effects, this meant fixing the issue immediately. As I scratched my head as to what the issue was I noticed the frames dropping when looking at certain assets, mostly the stairs and reception area. After digging a little more into what causes these issues I found that all of my assets that I had created had too many vertices causing performance issues meaning I had to go back into every single asset and find a way to reduce the amount of vertices without breaking the asset or losing quality. I was able to do this for all of my assets mostly to a high standard but there were instances such as the stair rails that took a hit on quality the most, including my Theatre seats.

As well as the assets quality I had to downsize the theatre due to the scale being slightly too large for the player character and looming deadlines, this had an impact on each individual wall having a knock on effect to sizes of my assets such as the auditorium floors. Something I had not considered was the intricacies of how a Theatre is designed, the architecture is hard to replicate if you do not have an in depth understanding of how they are laid out, for example very slight inclines and curves so the seats are slightly elevated and the audience have the best view from their location. This was incredibly time consuming as I found this out the hard way.

With lighting, blueprints and sound effects not even started, I had a decision to make. What could I cut back on to make time for the remaining components without losing the main goals I have for my project? In the end I chose to change the goal of creating all of the assets for the project myself and instead add the ones I had made then use whatever Unreal Marketplace packs I could find or had already as a back up to implement into my level.

This was an unfortunate problem but in the end it was the correct decision. I was able to focus more on the lighting and blueprints that had a huge impact on the look and feel of the project. The performance remained an issue through out the project but I was able to find ways to improve it with a lot of experimentation and cutting back on components that needed a lot of rendering. The narrative was also changed to suit the location and the blueprints I was able to create whilst still taking inspiration from the original story by keeping the same atmosphere, diary notes and antagonistic entity that haunts the player.

Inspiration

Purgatory

I began playing videogames since the age of five, this began with games like the Sonic and Mario series respectively but my first proper introduction to a horror game was with the release of Resident Evil on the PlayStation One. This game changed everything for me, the atmosphere and general vibe of the Mansion that the game took place in was something that has stayed with me throughout the years. On reflection these elements subconsciously found their way into my own project, the colours, lighting and mood not to mention a version of Beethoven's moonlight sonata also making an appearance proved to me the impact Resident Evil had on a young mind.

Fast forward to more modern times I have taken huge inspiration from other games in the genre. The famous Silent Hill series especially the second game is in my opinion one of the greatest games of all time, crafting a mature storyline and combining it with disturbing creatures and a location full of equal dread, mystery and wonder to create the images seen below.



What stands out in the above image is the lighting. Whilst the room is completely dark, the protagonist's torch lights up creepy mannequin figures in the background putting the player on edge and feeling uneasy. The lighting also guides the player to their next point of interest (the central mannequin). There is also some environment story telling here, the room is located inside of an apartment and there is reason for the mannequins to be here. There is a sewing machine on the table this gives the impression that the occupant was making clothes here.

The player finds themselves in a padded cell inside of a hospital, blood is on the walls, telling a story of a once confined person having some kind of injury. I love the way that the game only shows you pieces of the puzzle but the player fills in the blanks to imagine the scenario.



Purgatory

I wanted to create an explorable scene that would showcase lighting in a way to give atmosphere and to guide player's towards their goals. I'd always found it tricky to set up lighting to look natural and part of the environment. Going in to this project I knew one of my goals would be to achieve the same story telling techniques used with the environment as Silent Hill 2 and the same high standards of lighting. Another game that has great atmosphere and lighting is the game Until Dawn. Set on a snowy mountain surrounded by woods on a dark night the games cast of characters are set upon by a masked killer as they spend a vacation inside of a log cabin. What stuck out to me about this game was that the environments feel real, you can feel the cold by looking at the particle effects and atmosphere on screen. I wanted to try and replicate this in my project by giving it it's own realistic temperature and atmosphere.



Using lighting, colour grading and particle effects, the outside of the cabin just feels cold and unforgiving. The only warmth seems to be the cabin's light shining in the distance.

A log cabin is the main hub area for the characters, unfortunately it's not as safe as you'd hope and has it's own haunting vibe. The moonlight shining through the windows creates a place that while well lit still feels cold and eerie. There are also environmental objects that guide the player around such as the balloons.



Purgatory

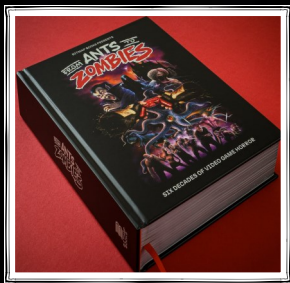
Research

Purgatory

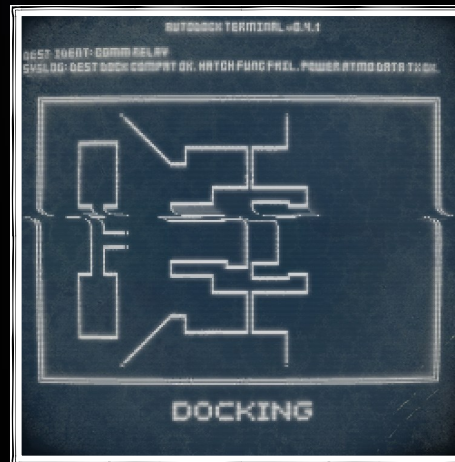
In order to get a better understanding of the components that would make up the project (the horror genre, level design and lighting) I researched the following.

I began with the Horror genre itself to further the understanding in what people feel and why in a horror based video game. I purchased and read "From Ants To Zombies" by Bitmap Books. This is a book that delves into horror based videogames and the following:

"More than 130 horror titles are analysed and contextualised across thirteen thematically-divided chapters, covering a variety of genres (from rail shooters to open-world RPGs), settings (from haunted mansions to infested space stations) and shades of fear (from creeping existential dread to stomach-churning outbursts of violence). The discussion is enlivened by exclusive commentary from pioneering horror developers such as Keiichiro Toyama (Silent Hill), Jane Jensen (Gabriel Knight), Ken Levine (System Shock 2), and many more."



This was an incredibly interesting book and my personal highlights are the games which manage to give players a sense of dread or panic using only primitive graphics and/or sound effects as well as text. An example would be a game called "Capsule". The player is presumably lost in space, and must venture forth using a radar interface for the entire game from one area to the next without oxygen or power. To do this the player has to scan objects around them and pick up supplies whilst avoiding hazardous objects. The thing that stuck out to me the most was the atmosphere, the basic graphics and colours work well to give the feeling of being lost in space, they are greys, blacks and whites and work well together but what propels this game is the sound design. When the player sends out the sonar on their radar it makes a bleeping sound when it hits objects, this reminds me of the sound of a heart machine, a feeling of unease and a sound of our mortality ticking away. If the player takes too long to collect oxygen the protagonist begins to asphyxiate and the sound of their struggled breathes begin to ring out causing panic to the player:



Purgatory

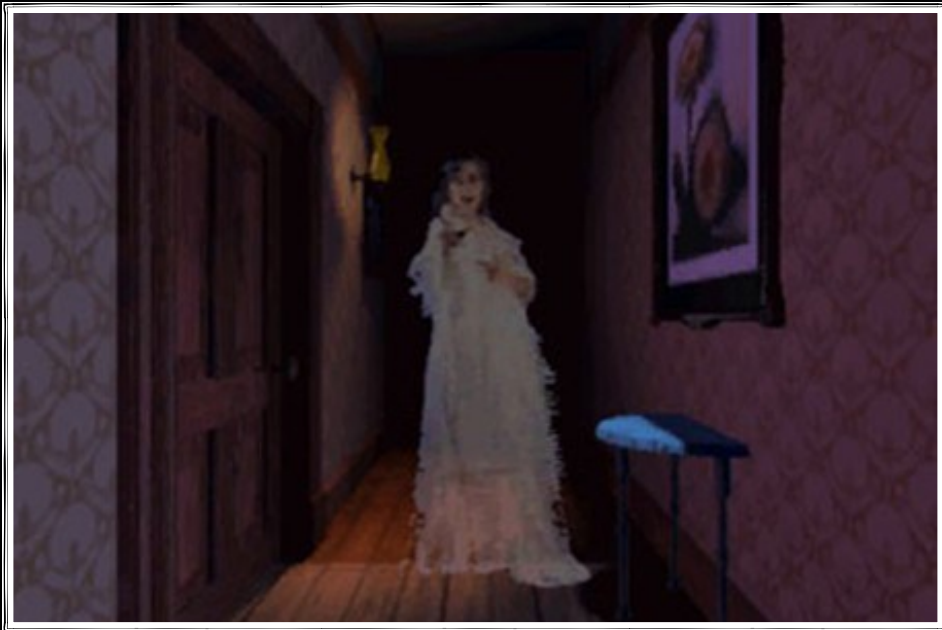
Another highlight would be the game "P.T.". This release was an absolutely incredible showing of how to market a horror video game, with its stealth release, complete lack of any information regarding its content and the way it created a community. Whilst this lack of marketing would seem completely ludicrous, the mystery around what the game was helped to propel its status. Hideo Kojima, the game's director definitely helped to put this game on people's radar but the fun was everyone finding out what the game was about together for the first time (something almost completely gone since the internet era). After a falling out with the Director and the game's Publisher, the game was taken off the release platform (extremely petty) but in doing so it amplified the game's status and mystique, and turned it into, in my opinion, the most unique demo ever released.

So what is P.T.? Well, it was a demo released for a new entry in the Silent Hill series. The protagonist walks through the corridors of a seemingly normal mundane house (something that adds to the fear factor as it progresses). Once the player has reached the end of the corridor they are shown to be stuck in a strange loop, the corridors seem to repeat infinitely. There are no weapons and only the sound of the protagonist's footsteps can be heard until things begin to go very strange. With each loop through the corridors, strange noises can be heard, objects can be interacted with and lighting is changed to become much more eerie. This eventually climaxes to an appearance of a ghost-like figure of a woman looking as though she's not too happy with your appearance. The game starts off sombre and escalates with each trip through the corridors, the lights turn red to give the player a feeling of danger, the noises you hear can startle you and cause unease and the ghostly figure causes the player panic and finally understand that they are not alone. P.T. changed the horror game landscape with even behemoth franchises like Resident Evil taking notes and using inspiration in its release of Resident Evil 7 through to Resident Evil Village.



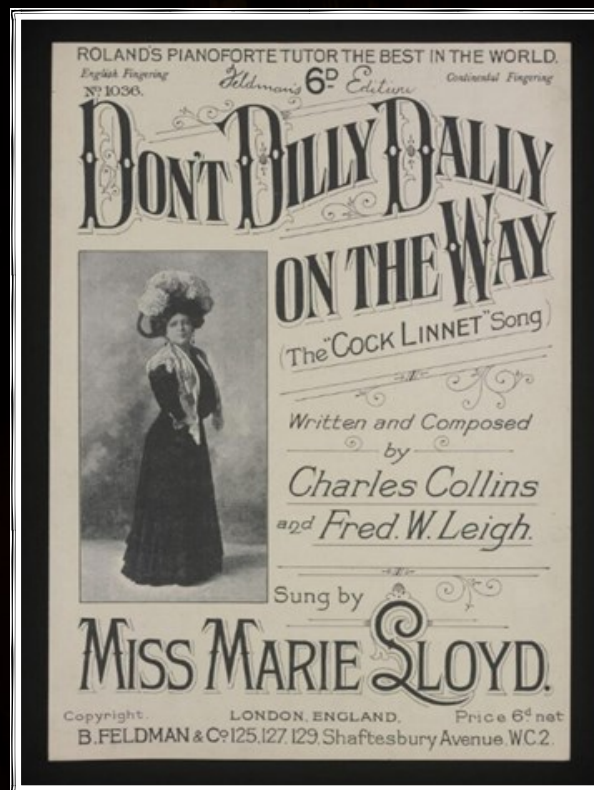
Purgatory

A game that stuck with me from an early age is also discussed within the book, this game is called the 7th guest. Using what was at the time leading technology in the form of FMVs (full motion video) the developers of the 7th Guest created a point and click murder mystery game set in a Haunted House. Puzzles were to be solved and rooms were to be explored as the player interacts with the houses previously alive guests. The game is light hearted and the acting campy, this doesn't negate from the atmosphere of the house, creepily lit hallways and rooms and some surprise scares from the ghosts terrified me when I was younger. The thing that kept me going and almost always keeps me going in horror games is the ability to explore. The Haunted House had many rooms to explore, there was always the curiosity to venture further and see what was behind the next door, what would the room contain? this curiosity is in my opinion paramount to a horror game.



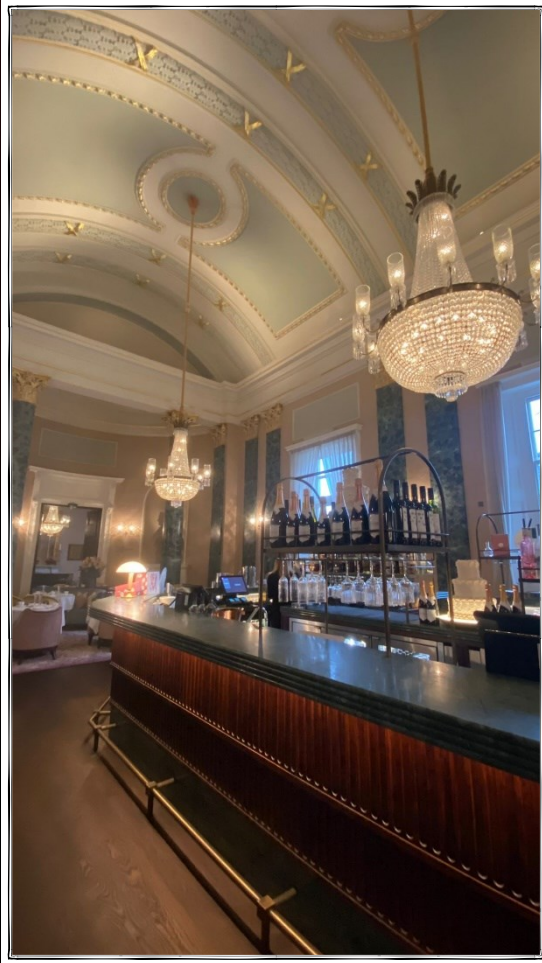
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Since my project's location is inspired by real English Theatres I was easily able to find plenty of references online. I read through pages of online material regarding the setting and the 1950s period. I found images of collections of items found during this time and location, these include posters, masks and costumes. I had to always keep in mind the technology of the time and the equipment as well as the décor although most Theatres were constructed a long time before the 1950s and are a capsule of the time that they were built in.

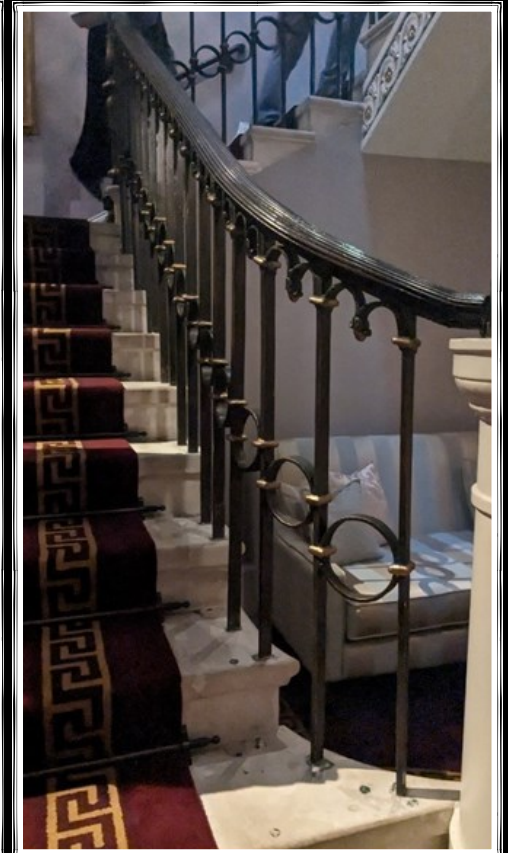
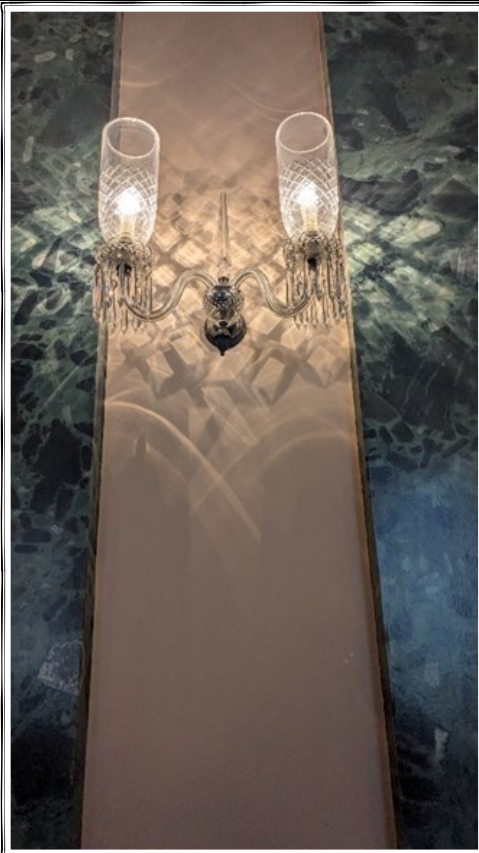


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Whilst the online references were useful, it had dawned on me that I could gather my own references by visiting a real English Theatre. I booked a tour inside of the Royal Drury Theatre in London, a theatre first erected in 1663 and still showing many of its original features after centuries. It was an amazing chance to soak up the atmosphere and look at the details to create my assets as well as learn about the theatre's history. I came away with many photos but alas none of the auditorium as pictures were off limits due to a policy with Disney productions showing their stage show Frozen at the time.



Purgatory



Stairs, ceilings, pillars, lights and other points of reference were captured for the project. I took special notice to study the texture work and scale of these features. The Theatre I had envisioned was a little less grand than the Royal Drury but I was able to transfer a lot of these references into my final project.

Purgatory

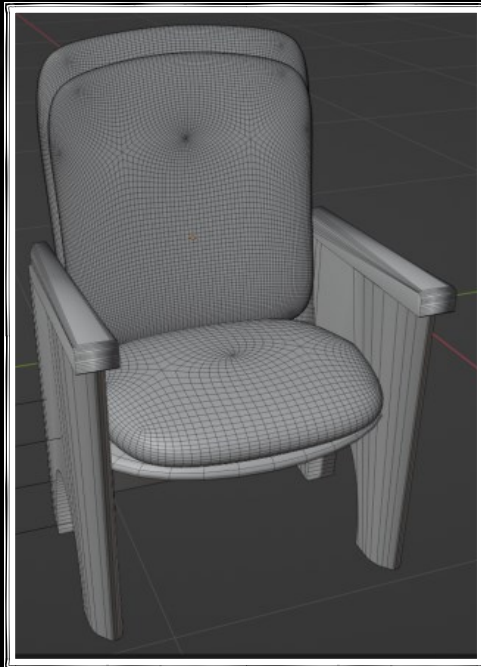
3D Modelling

Purgatory

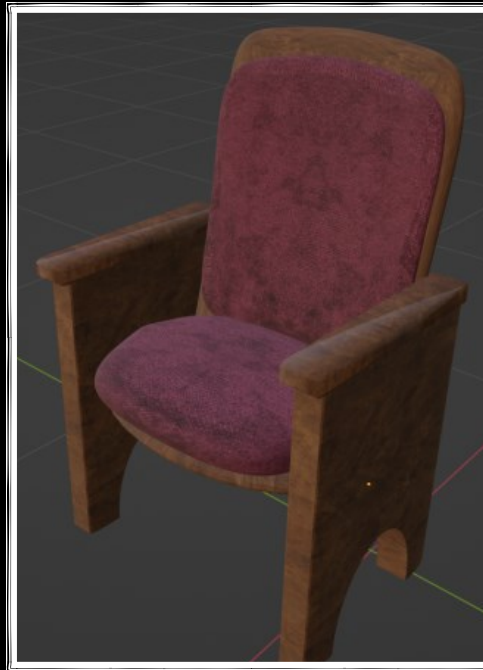
Theatre Seat

After a list of needed assets was made in order of priority I began delving into the modelling software Blender. This was by far my weakest skill but it was always something I was interesting in learning, I started off with the theatre seats using references to pictures I'd taken and real world measurements then moved on to doors, lights, pillars and many more. Once the models were complete I used Substance Painter to create the textures needed to enhance the realism of the assets.

Blender model - seat



Blender model with textures - seat



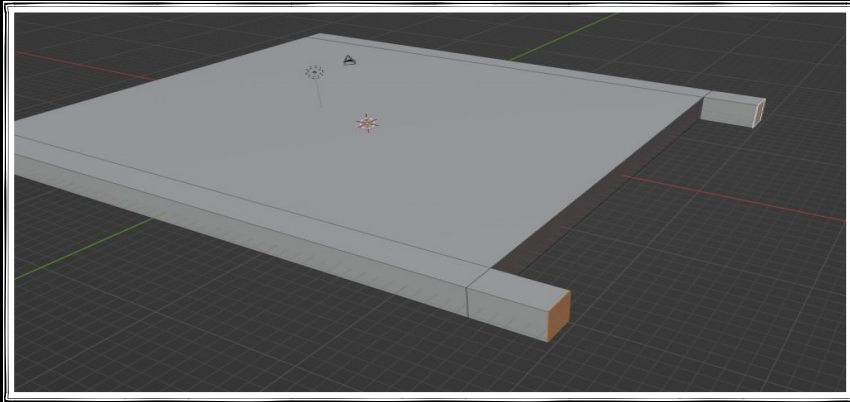
Substance Painter enhanced textures - seat



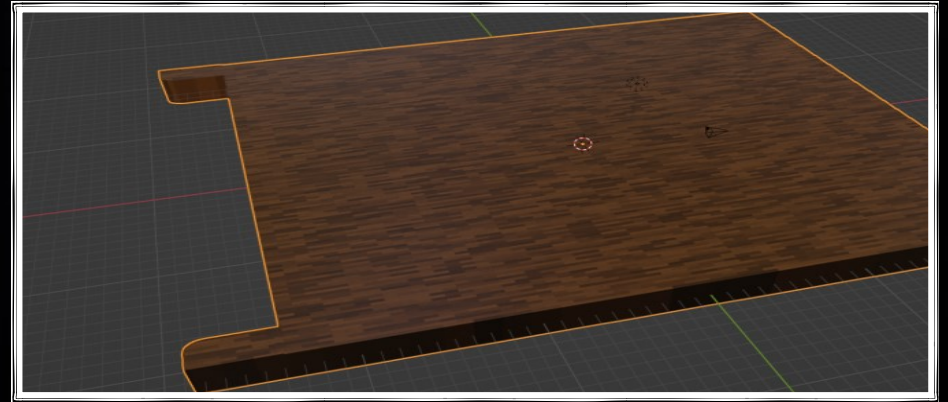
The seat's wooden frame was fairly straight forward to implement but the most difficult part was the cushions . Trying to arch the cushion to the same degree as the back of the wooden frame took a lot of time to get right without it looking stretched and unnatural.

Theatre Stage & Wall Lights

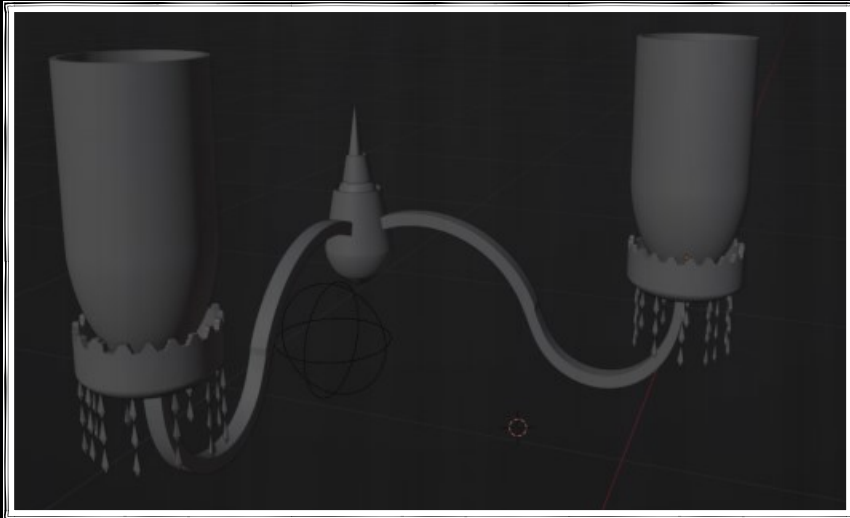
Blender model - stage



Blender added textures - stage



Blender model - light



Substance Painter enhanced textures—light



The stage asset was difficult to scale correctly as it needed to align with the distance between each side of the theatre wall, it took quite a few attempts to get the scale just about right but applying textures in substance painter to such a large object proved difficult because the textures were always stretched. In the end I used Blender to apply the textures. The double light asset was made using different pieces, starting with the glass bowls and ending with the small gems that dangle below. This was the first time using a curve modifier so I could make the stems curve down then upwards that hold the glass bowls.

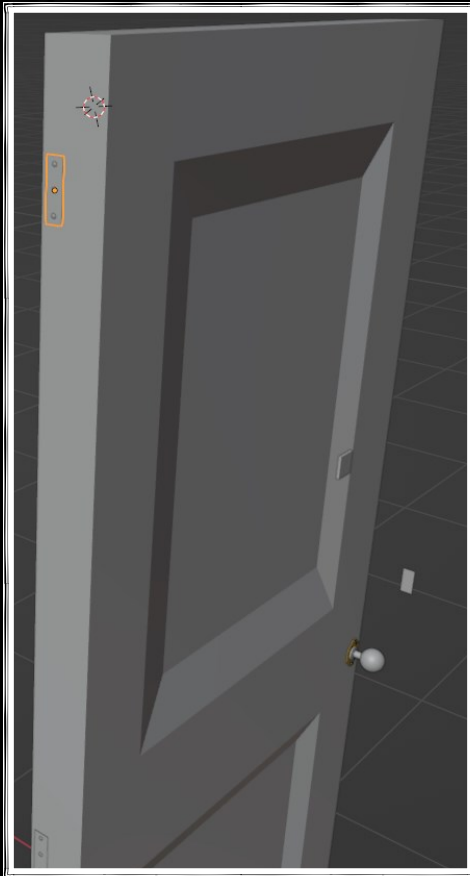
Purgatory

Doors & Pillars

The doors were made quite quickly, using only a block mesh and a few tweaks for the base. The difficult part were creating the door knob along with hinges and latch. In hindsight I went into too much needless detail with these parts due to the player rarely needing to look closely at the finer details like the screws and hinges.

The pillar was created very quickly by using a cylinder mesh and a torus. The torus needed smoothing and it came together easily as well as the textures created in Substance Painter.

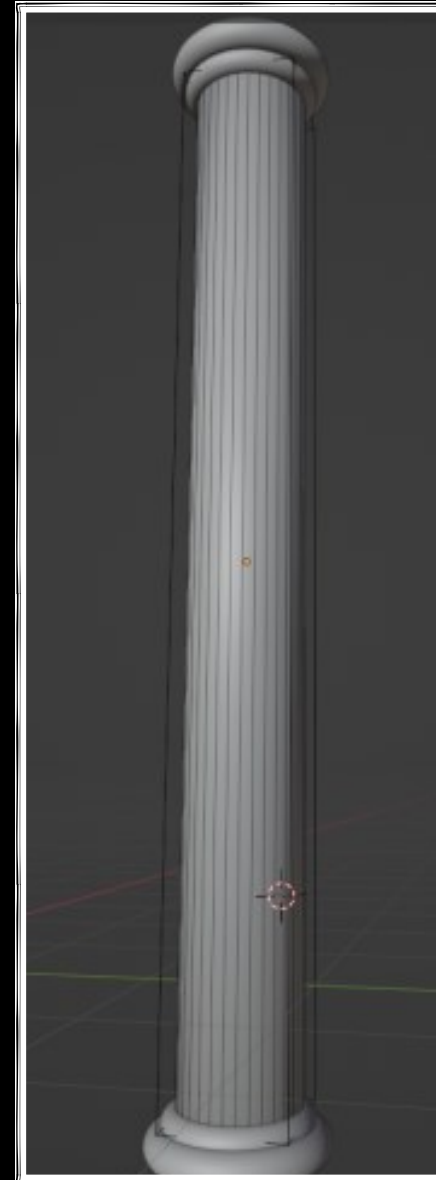
Blender model - door



Substance Painter enhanced textures - door



Blender model - pillar

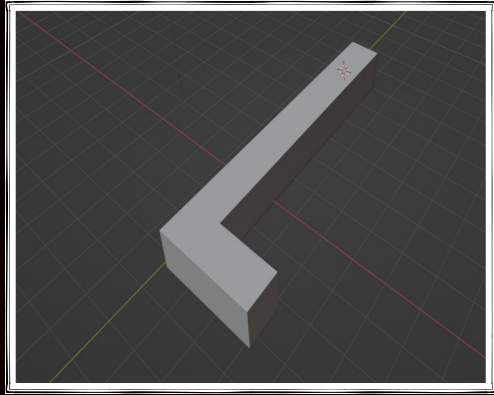


Substance Painter enhanced textures - pillar

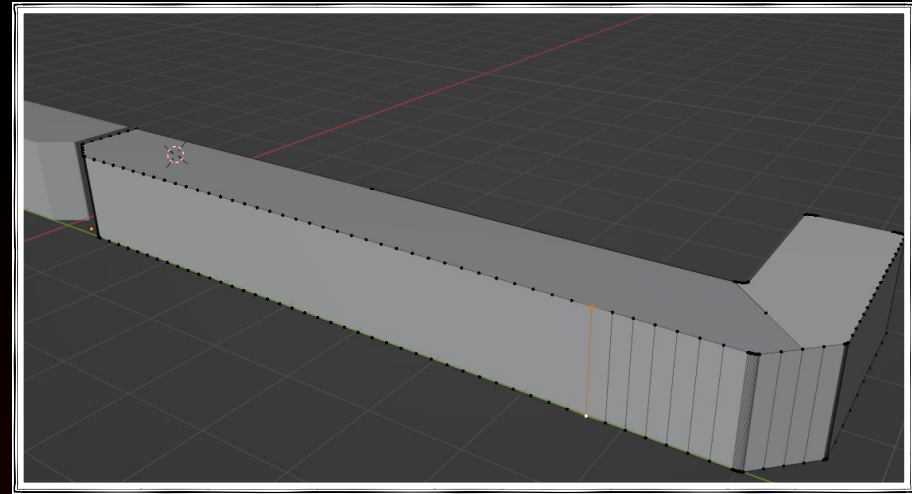


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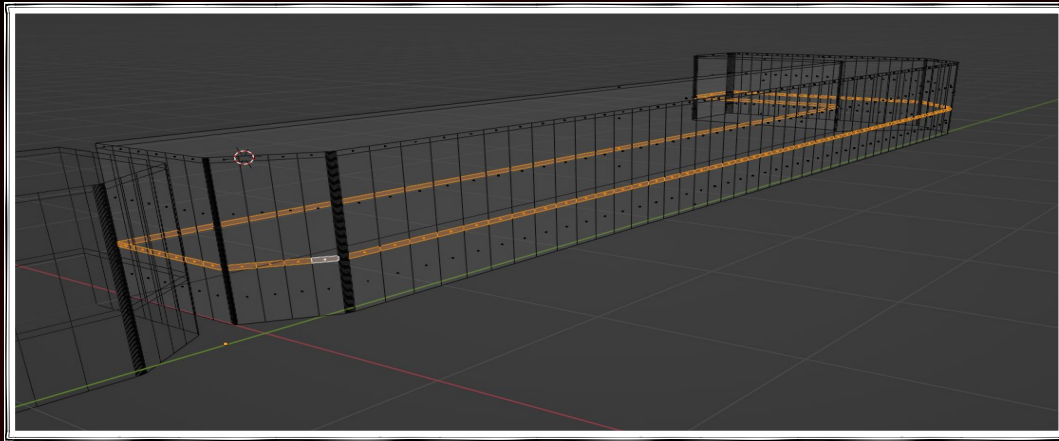
Theatre Bar



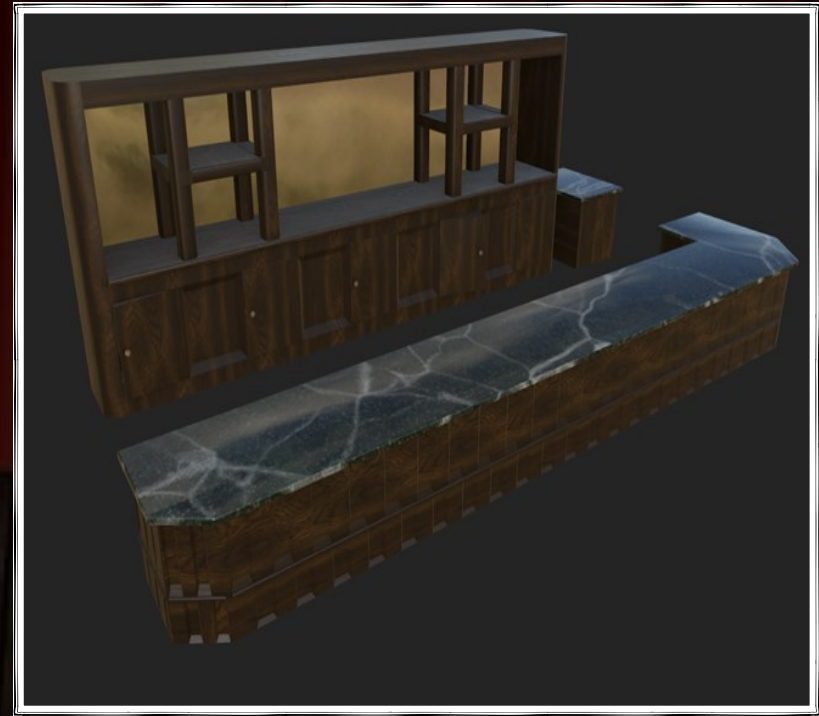
Blender model - bar



Substance Painter enhanced textures—bar



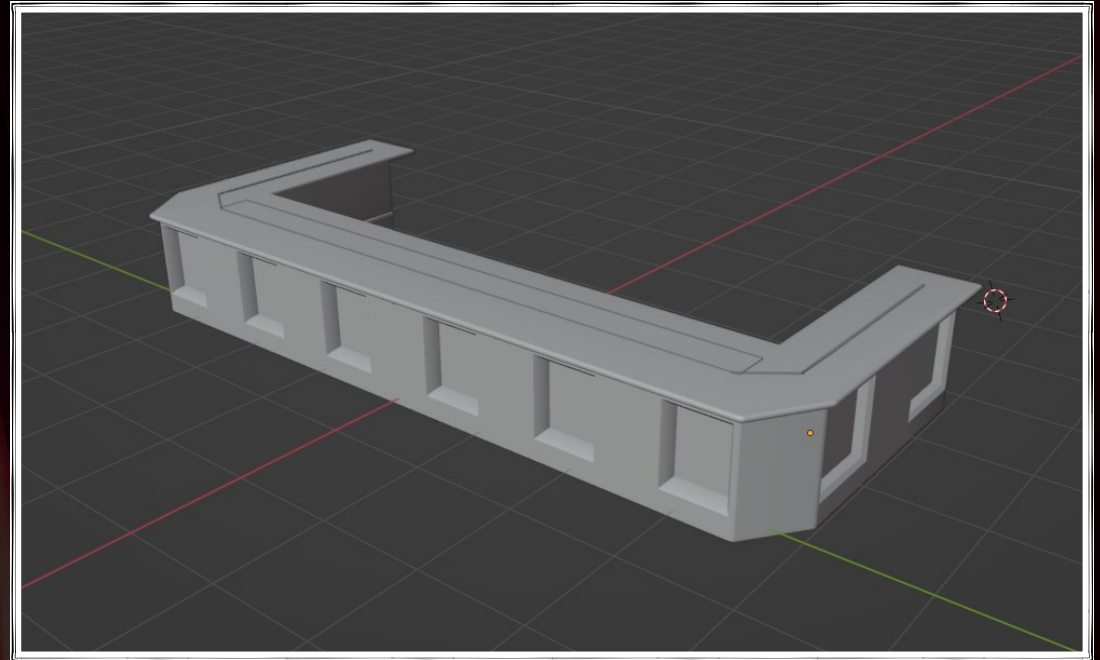
With the bar I began by using a basic cube mesh and scaling it into a rectangle, after this I added lines across so I could add indents to make the bar look more interesting (same technique as the door asset). The cabinet at the back took a little more time and I added in some cabinet doors at the bottom to make it look more practical. I made some of the cabinet doors open slightly as well to show that they were in use at some point in time. The texture work took a bit more time to get right due to the marble bar top needing coordinates changing so it didn't look stretched (a problem I had a lot with larger objects in Substance Painter).



Reception Desk

To save time I reused the bar I created before and cut it into half. Once I had done this carefully I mirrored the object then stitched it together to create a symmetrical desk.

Blender model - reception desk



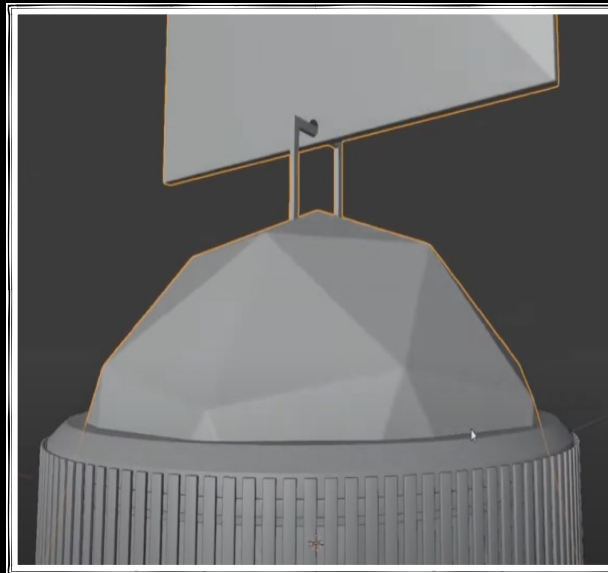
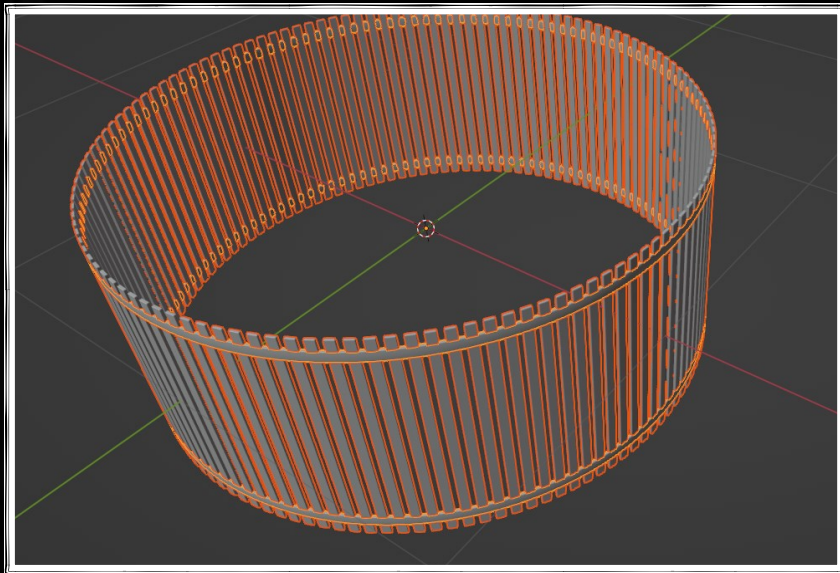
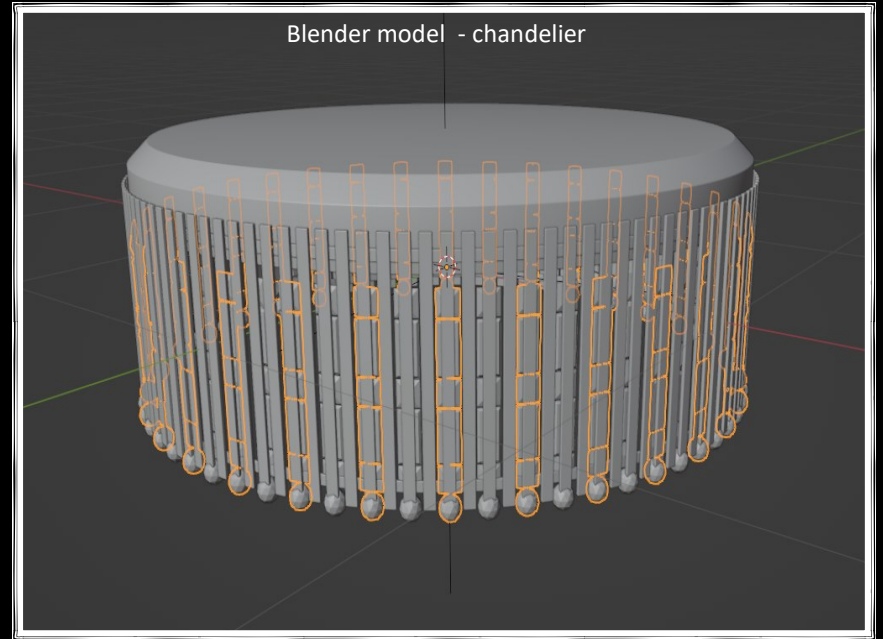
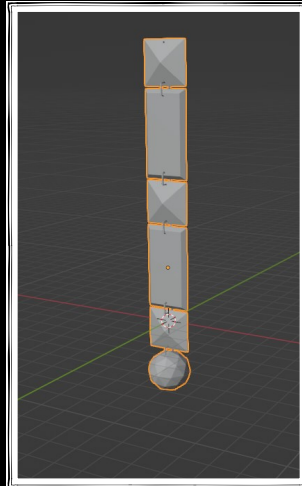
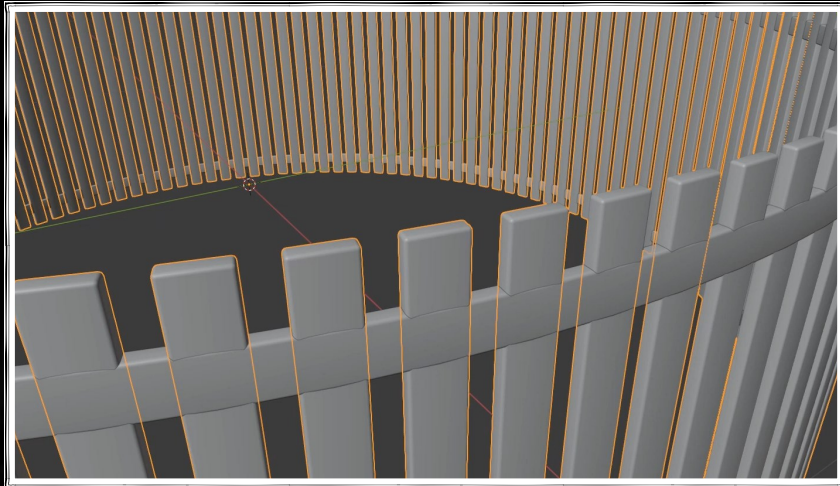
Substance Painter enhanced textures - reception desk



During the texture work I added in the poppy flower motif that I had placed on the theatre seats. This was to give the environment a feeling of cohesion through the design of its assets.

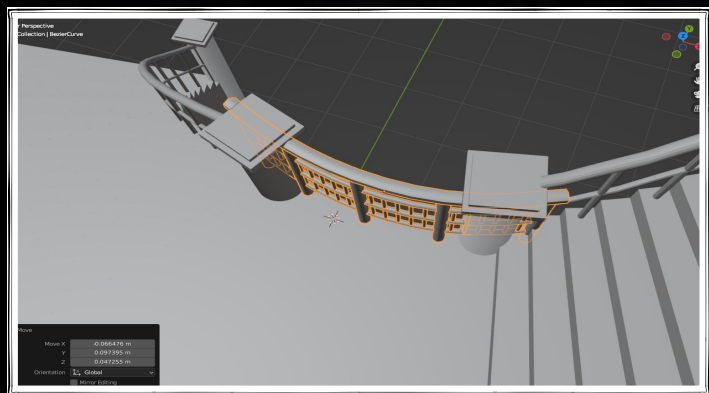
Chandelier

One of the first things that stuck out to me when thinking of an auditorium were the huge chandeliers usually found dangling from the ceilings. I knew I wanted to replicate these with an eye catching model along with textures. This was another model I went into far too much detail, creating the holes and glass lights together was needless as the player is far away from seeing these up close. Nether the less I took a lot of time creating this model using a torus and the array modification, once I had created the separate glass parts that would dangle below the main base of the light. I'm super happy with the end result and it really gave the auditorium more of an impact. The glass materials for the chandelier were created in Substance Painter but due to difficulties applying them to the Unreal Engine I created new materials in Engine.



Reception/Staircase

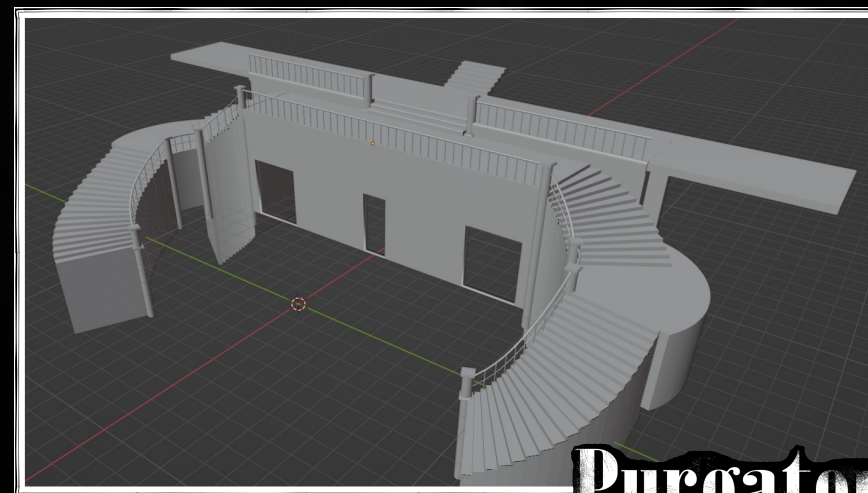
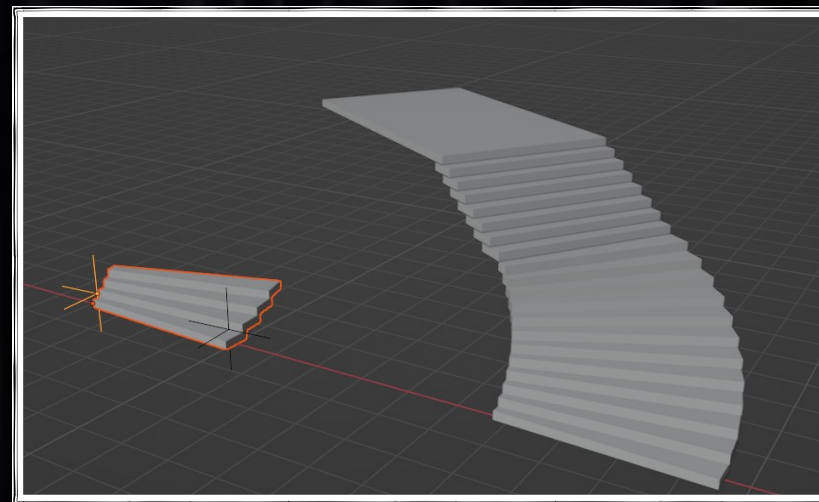
The reception area would be the first area the player would see, so I wanted it to be impactful. This was where my Resident Evil inspiration subconsciously appeared. I wanted the player to have multiple paths to take on different levels, a huge set of stairs on either side seemed like a no brainer. The part I struggled with the most was creating the curved stairs, I didn't need them curved but I thought it added so much more to the aesthetic, making the environment more interesting. The ground level would lead straight into the auditorium through a set of corridors and in the centre an office space for employees. I had to get all of the measurements perfect for this to align with doors and walls surrounding the area.



Textured asset in Engine - reception

When it came to texturing the space I used the Unreal Engine. I began in substance painter but I wasn't getting the results that I wanted causing me to save time and do it in engine via nodes. There were many issues with the UV mapping for this model, causing graphical glitches on the steps which I hope to fix before the end of the project. As a whole though I am happy with the end result of this asset, I think it gives a great first impression to the player and gives them multiple paths to choose.

Blender model - reception

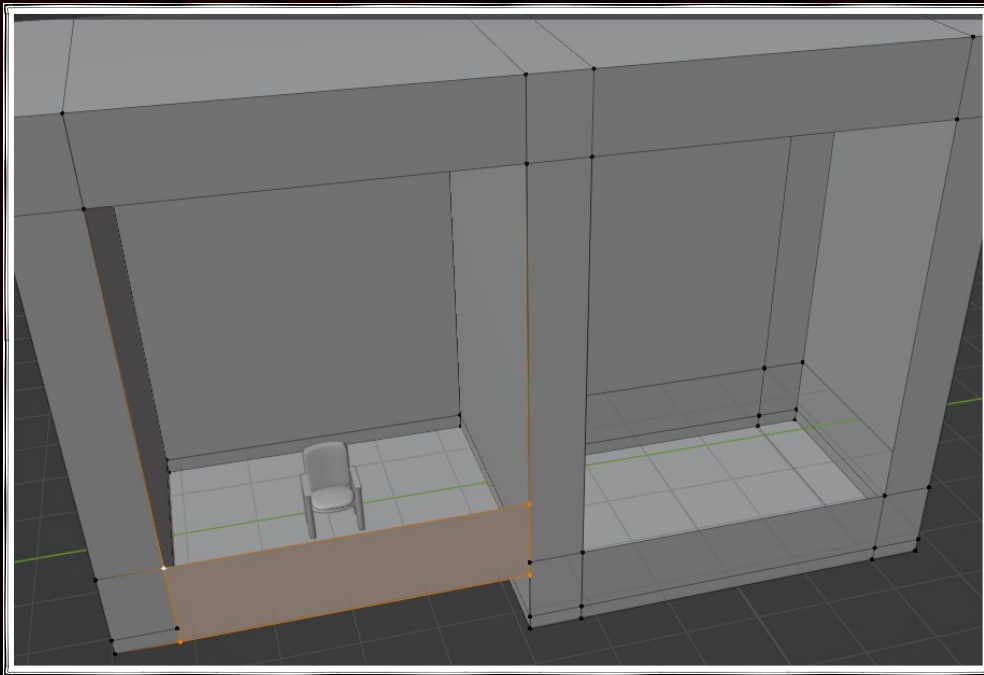


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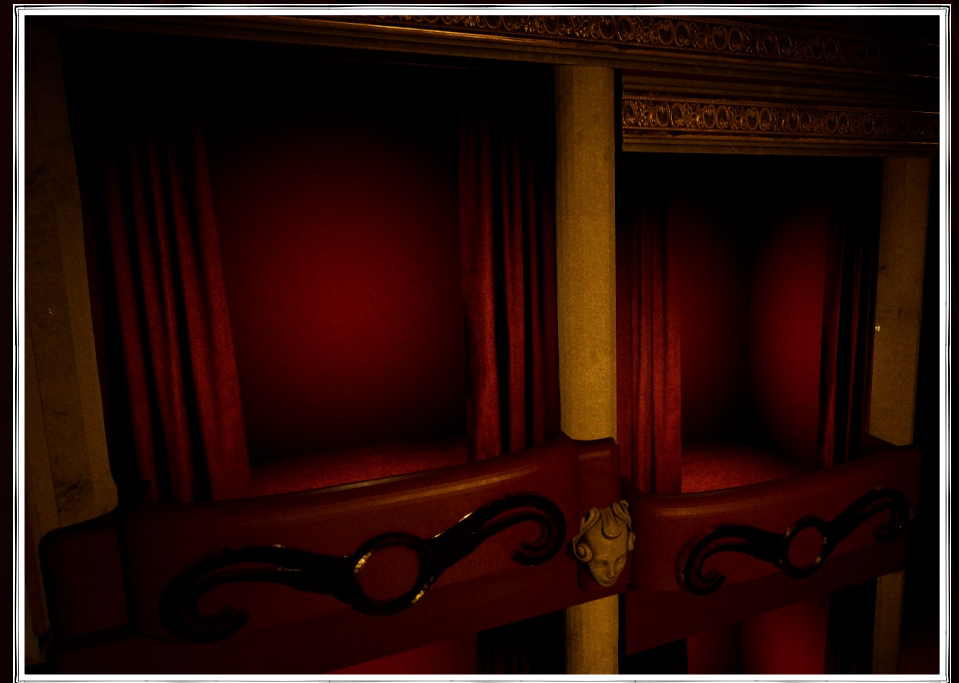
Theatre Boxes

An iconic feature of an auditorium are it's private boxes located at the sides. I wanted my theatre to include these as I feel like they add a lot to the visual style and would be fun to explore for the player. It took many attempts to get these right having problems with the scale size and balcony. In the end I made three separate parts to make it easier to work with, these parts were the main box, curtains and the balcony. Getting the balcony curved correctly was difficult and the décor on the outside is very basic. This is something I would have liked to have improved with more time. The main box itself changed sizes a few times, I had difficulty in getting the floor level correct for the player and also the size of the frames for the doors along with syncing it all up with the side walls I had made for said door frames. The pillars on the sides were added in at the end, this was a last minute decision as something didn't look quite right before they were implemented. The curtains were straight forward though and reused as the main curtains for the stage.

Blender model - private box



Textured asset in Engine - private box



The textures were a mix of Substance painter and materials created in the Unreal Engine connected by nodes. The reason for this was the difficulty in Substance Painter with textures being stretched and due to time constraints it was much simpler due to my own experience to create the materials needed in Unreal. An example would be the carpet and the interior walls.

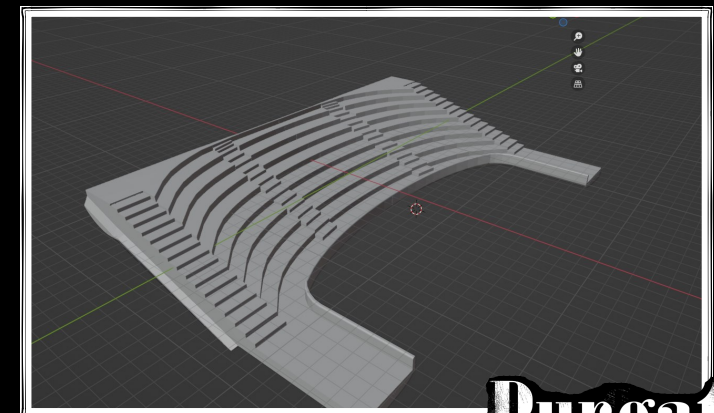
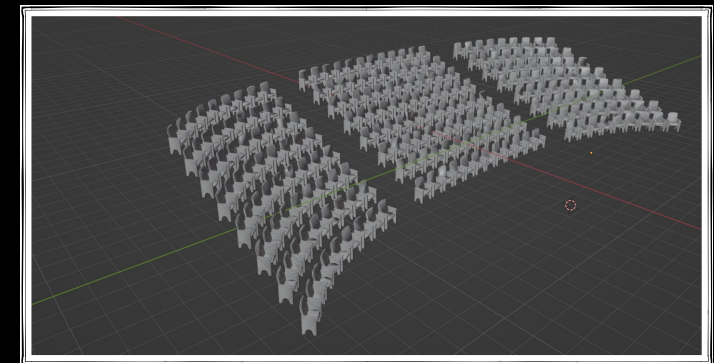
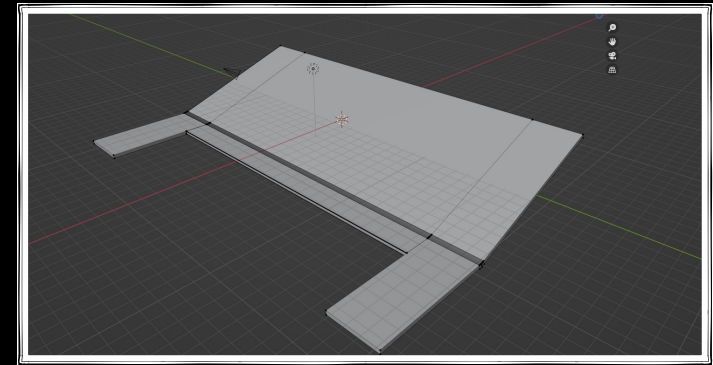
Auditorium Balcony & Floor with Seating

The biggest a most difficult asset to create was the auditorium seating floor. Instead of using simple geometry I had to create my own asset for the seating due to the curves and slopes. I went through many different versions changing scaling to fit with the surrounding geometry. The asset also brought into light the engineering that goes into creating a theatre. Things like slight inclines and turns to create subtle changes that effects the seating layout in a big way. Another issue was marrying these things with a videogame where perspective and collision count when playing. I had to make the seats spaced out enough so that the player could walk between the aisles without impacting the altitude of the seats. This was very time consuming and in the end I was only able to make the middle set of seats explorable to the player . I did some research into how other games got around this and I found that most of the time the player could not go between the aisles.

Textured asset in Engine - auditorium floor

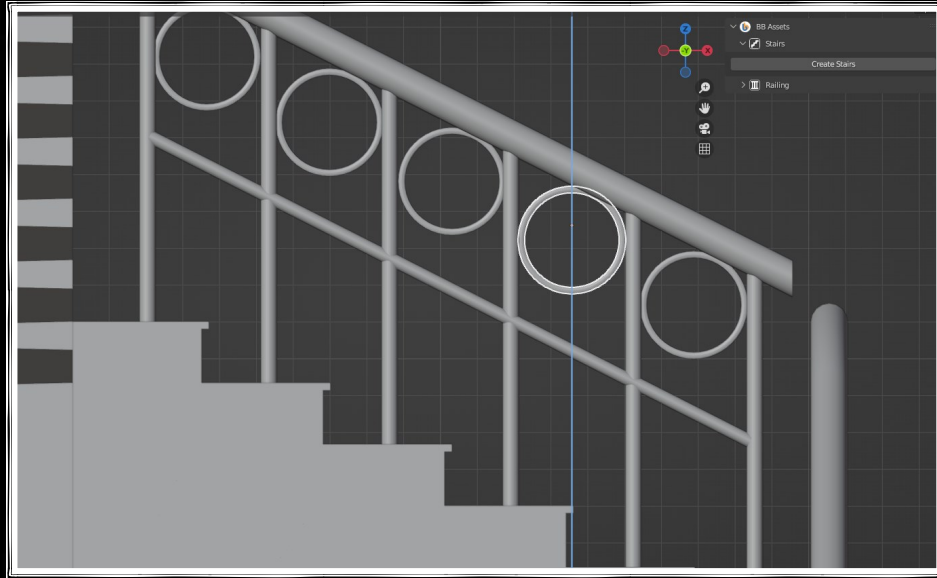


Blender model - auditorium floor



Grand Staircase

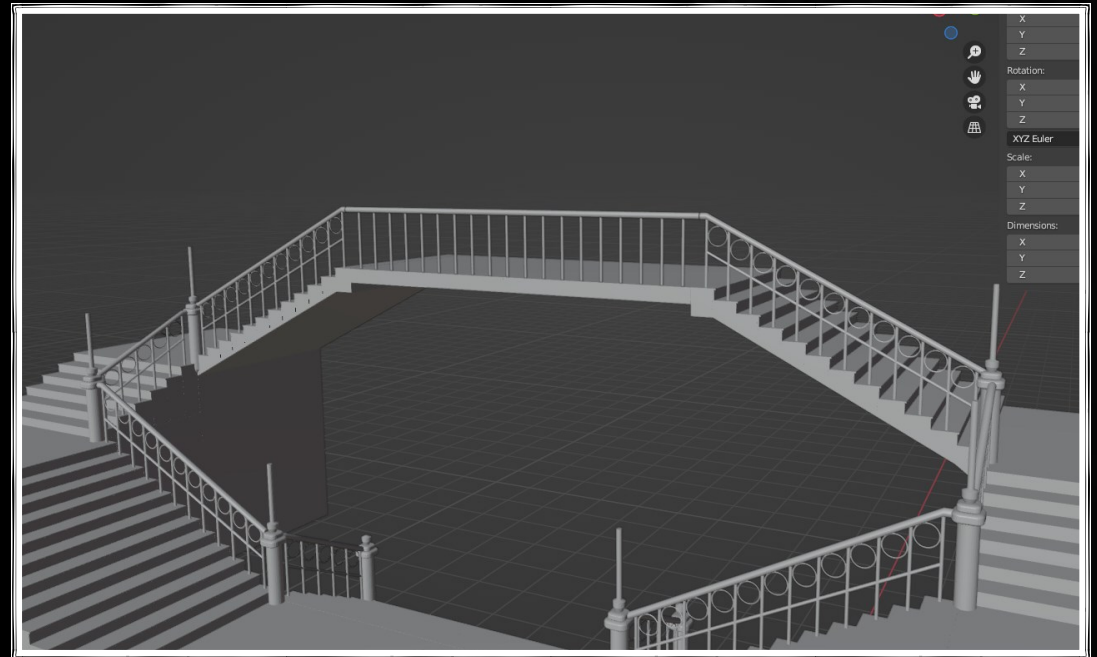
Blender model - side stairs



The side stair case was a difficult task due to it's size and intricacies such as the railing and lights. Originally I had basic railings but it looked dull and uninteresting. I added in circles in between each railing bar and it created a much more grand looking set that matched the theatre. There were a lot of problems texturing the stairs in substance painter resulting in the end dragging and dropping materials on to the model in the Unreal engine then connecting nodes to scale the textures correctly.

The lights were made separately as at the time of making the staircase I had not decided on the final design for the lights. In the end I reused the lights from the wall lights I had previously made to save on time.

Blender model - side stairs



Textured asset in Engine - side stairs

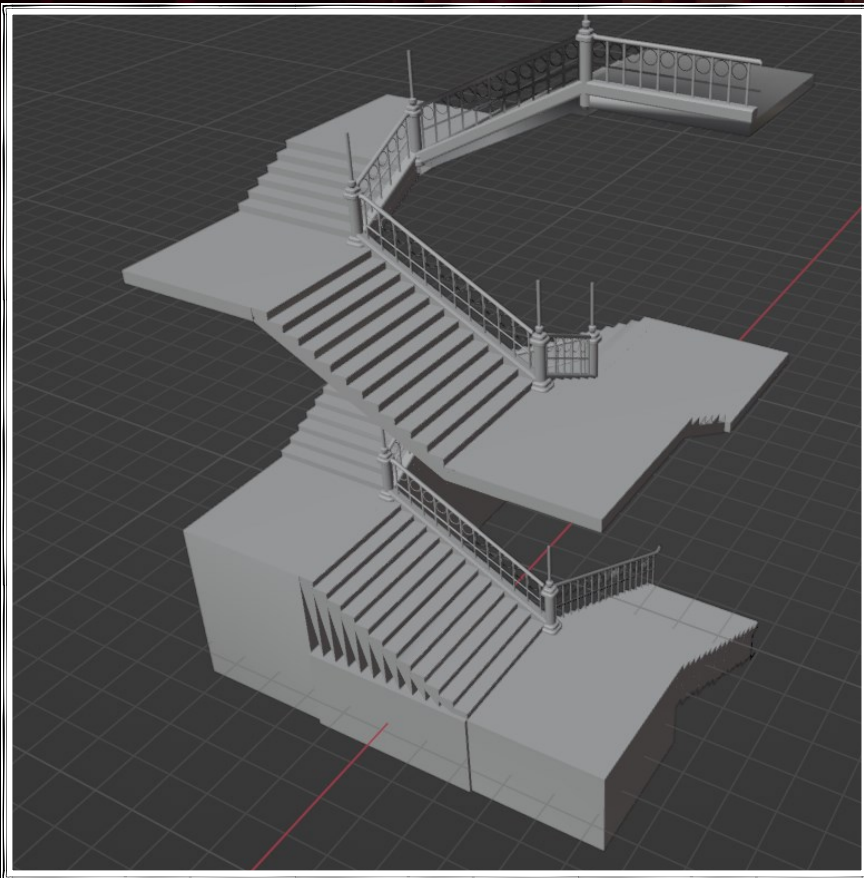


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High Staircases

In much the same way as the reception desk I reused a previously built asset this time the side stairs and cut them in half. I then tidied the mesh by sealing and then duplicated it above. I then created a small set of steps to join these meshes together to create the high staircase. Another time consuming model which took multiple rescaling to get it to line up with the surrounding walls and floors. There is an almost identical model of these days that I also made for the high stairs towards the back of the theatre, these would lead into the private boxes, the only difference being the bottom set of stairs needed to be cut back along with the railing.

Blender model - high stairs



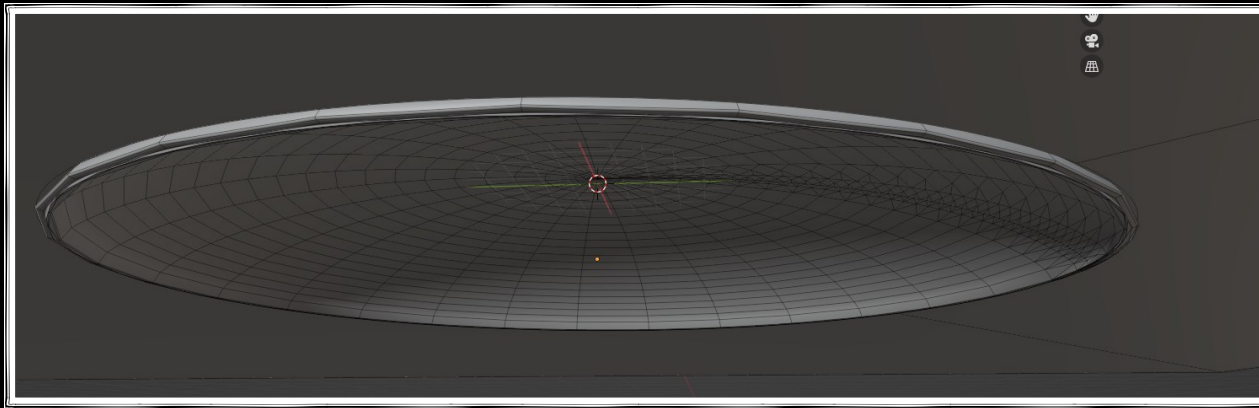
Textured asset in Engine - high stairs



The textures were placed in the Unreal Engine to save time, I would have liked to have taken my time painting the railings and adding to the realism and if I had the chance to do redo this asset I would have made it much similar to paint.

Auditorium Ceiling

Blender model - ceiling



The roof asset was difficult to scale correctly to get it in line with the rest of the blocked out theatre. There was a lot of issues with the faces of the model too, they would cross over and break the UV mapping.

Due to the difficulty with the UV mapping in the modelling software the texture work in Substance Painter along with the size of the model had a lot of issues. Eventually I got the texture to fit perfectly around the sphere of the rooftop to add the grand theme of the theatre. It was a model I knew that I needed as the roof top of a theatre is most of the time extravagant. The mural on the roof is an image taken from online as unfortunately I didn't have enough time to paint my own masterpiece.

Textured asset in Engine - ceiling

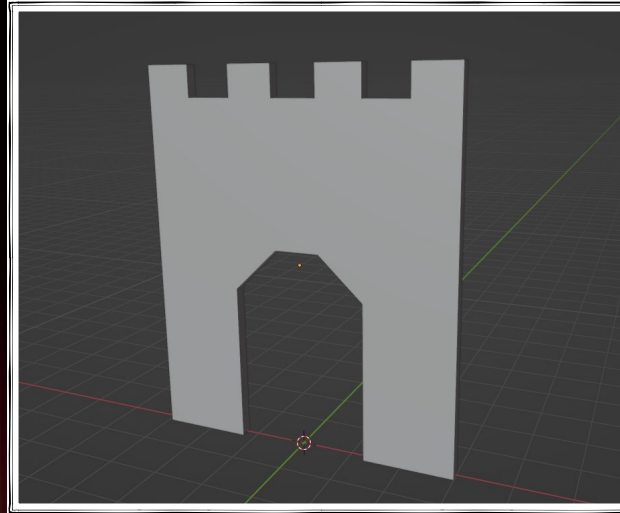


Purgatory

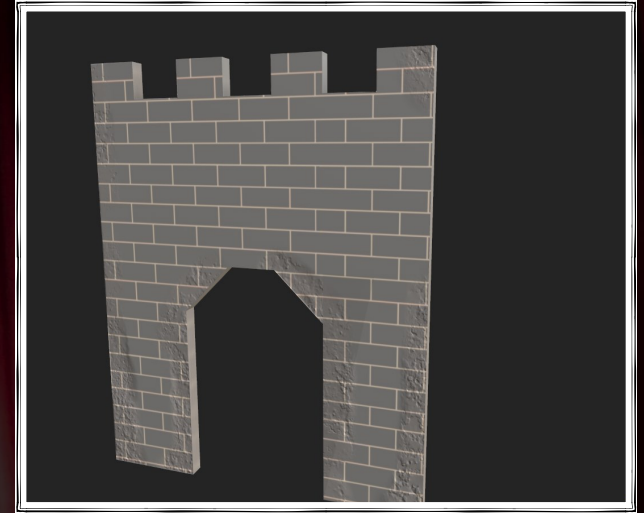
Stage Props

Once I had created the back stage area I realised it was quite sparse and empty. I filled the spaces in with pre-made assets from packs as best I could but felt as though the big props were missing. I decided to create simple models to use as large props these would be a castle and hillside. When texturing I decided to make the props look low budget so they didn't just look as though they were real hills and castle pieces. To do this I painted the hillside in a cartoon aesthetic as well as the castle. I also added a small amount of blood to the hillside for environmental story telling.

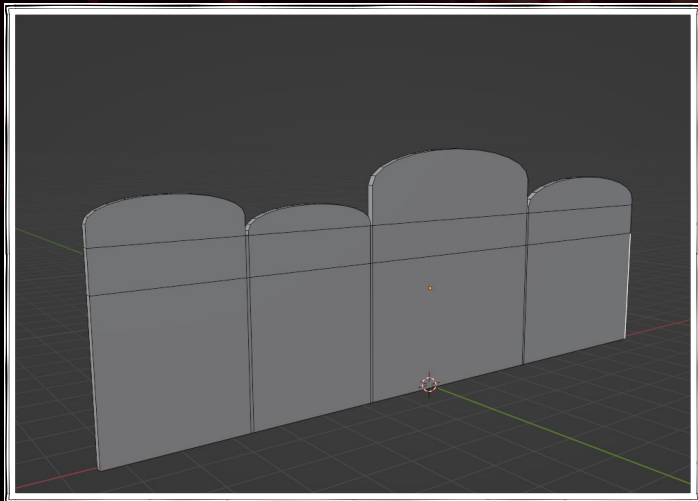
Blender model - prop



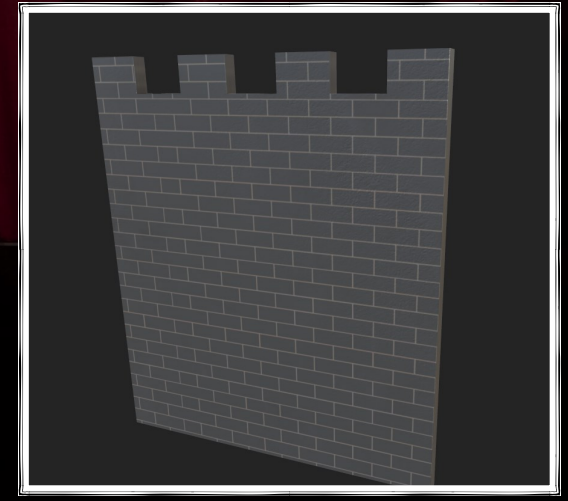
Substance Painter enhanced textures - prop



Blender model - prop



Substance Painter enhanced textures - prop



I would have created a lot more of these if I had the time as they were easy and fun to create, an English house and staircase

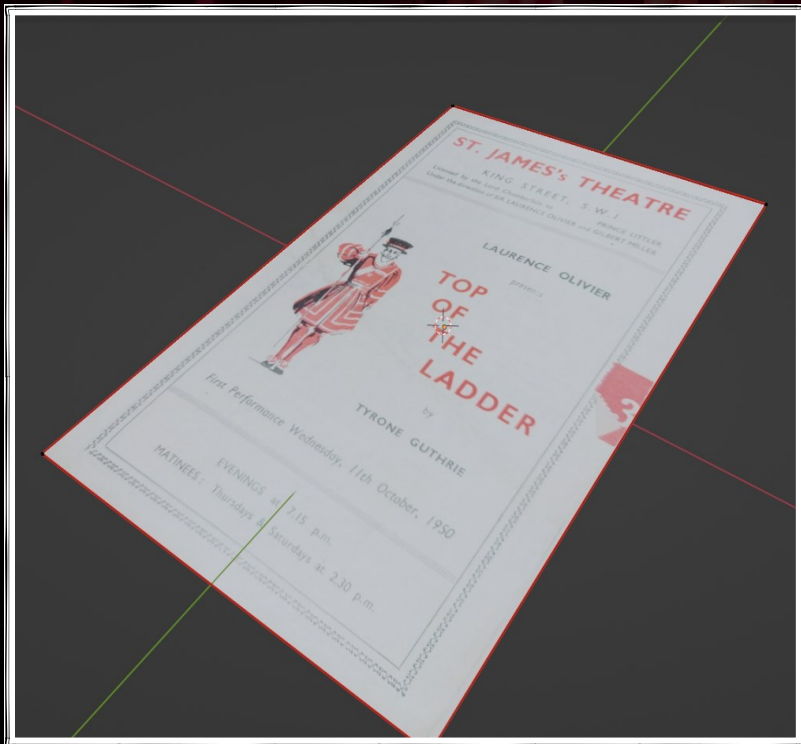
Purgatory

Advertisements

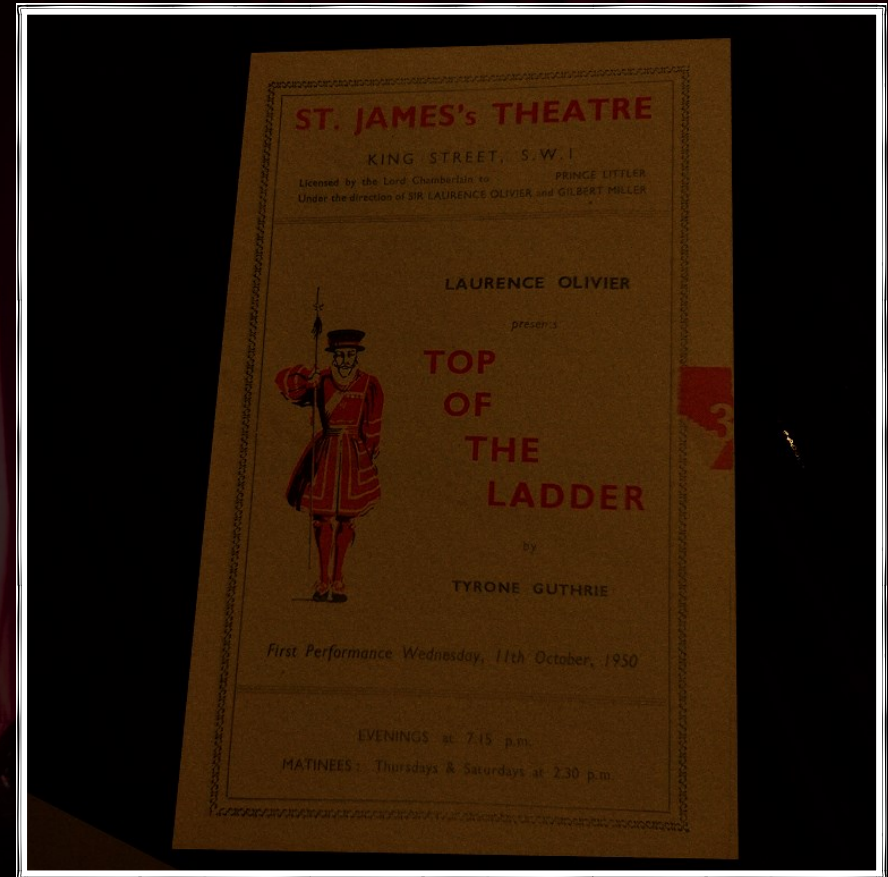
To help the environment appear realistic and used I created a simple plane mesh in blender and made the corners slightly curled to create a flyer for the theatre.

I would later re-use this model for my notes by changing the texture to save time.

Blender model - flyer



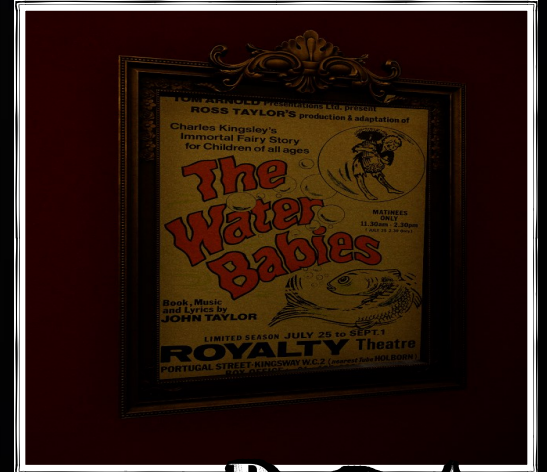
Textured asset in Engine - flyer



The texture work was done in Blender as this was the quickest and easiest way to do it, initially I wanted to create my own texture for the theatre but due to time constraints I settled for a real 1950s theatre advertisement found from an eBay auction.

Premade assets and photoshop

Using frames from an asset pack and placing my own plane inside of them I created posters, pictures, signs and paintings to immerse the player in the environment. These were mostly from images I found online of real items from the time period that the game takes place in. The signs were created by myself using photoshop, I felt as though they were needed from a gameplay perspective to help the player understand the layout of the theatre.



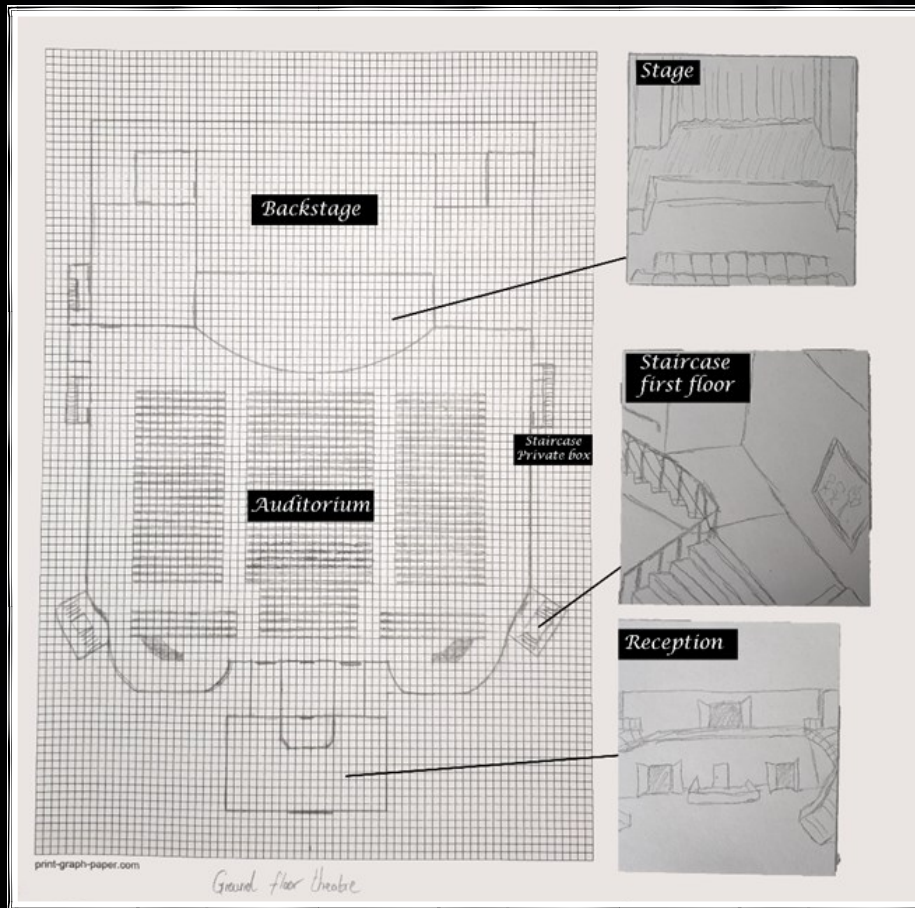
Purgatory

Level Design

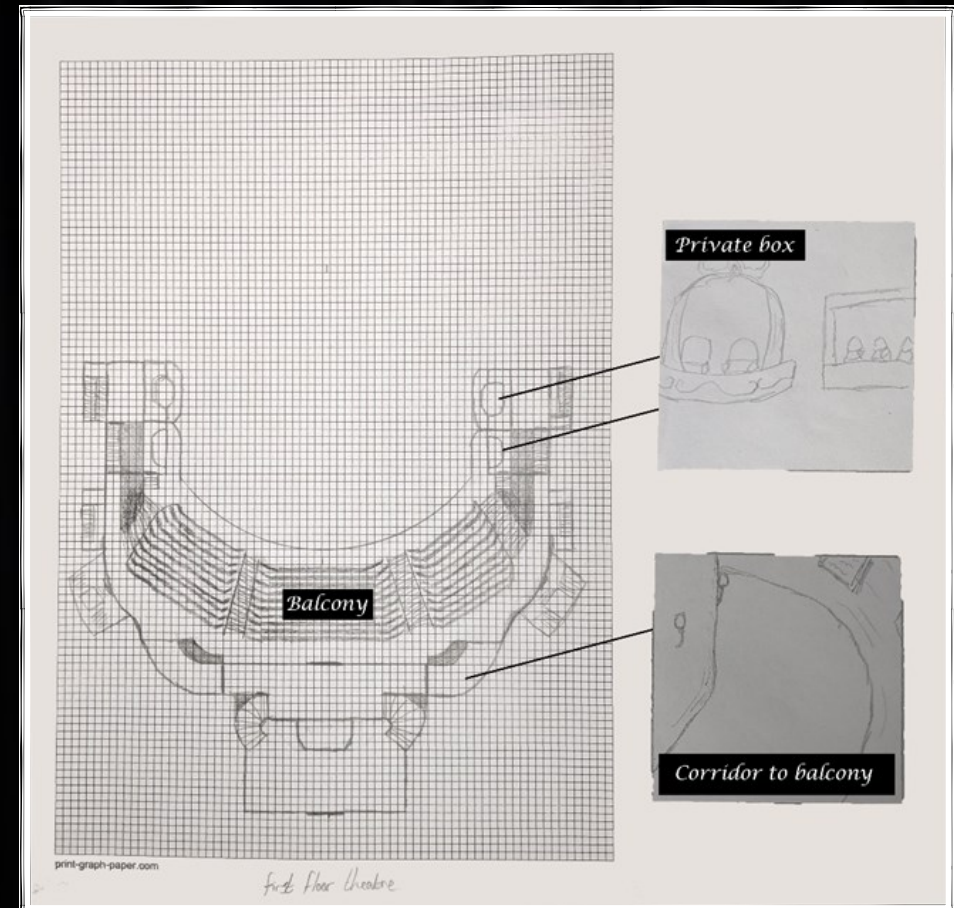
Purgatory

A pencil and a piece of paper is always my starting point when designing a level. With the help of Theatre layouts referenced online I began to draw out my own design using elements that I found interesting when visiting the Drury theatre. The stairs found at the side of the building were very inspirational to me, they were large and had marble pillars next to them and lights attached to the pillars between the hand rails, something I recreated when making my “side stairs” model. The reception area along with the colours I had in my mind were a subconscious call back to the Resident Evil Mansion from the 1996 Video-game.

Colour theme



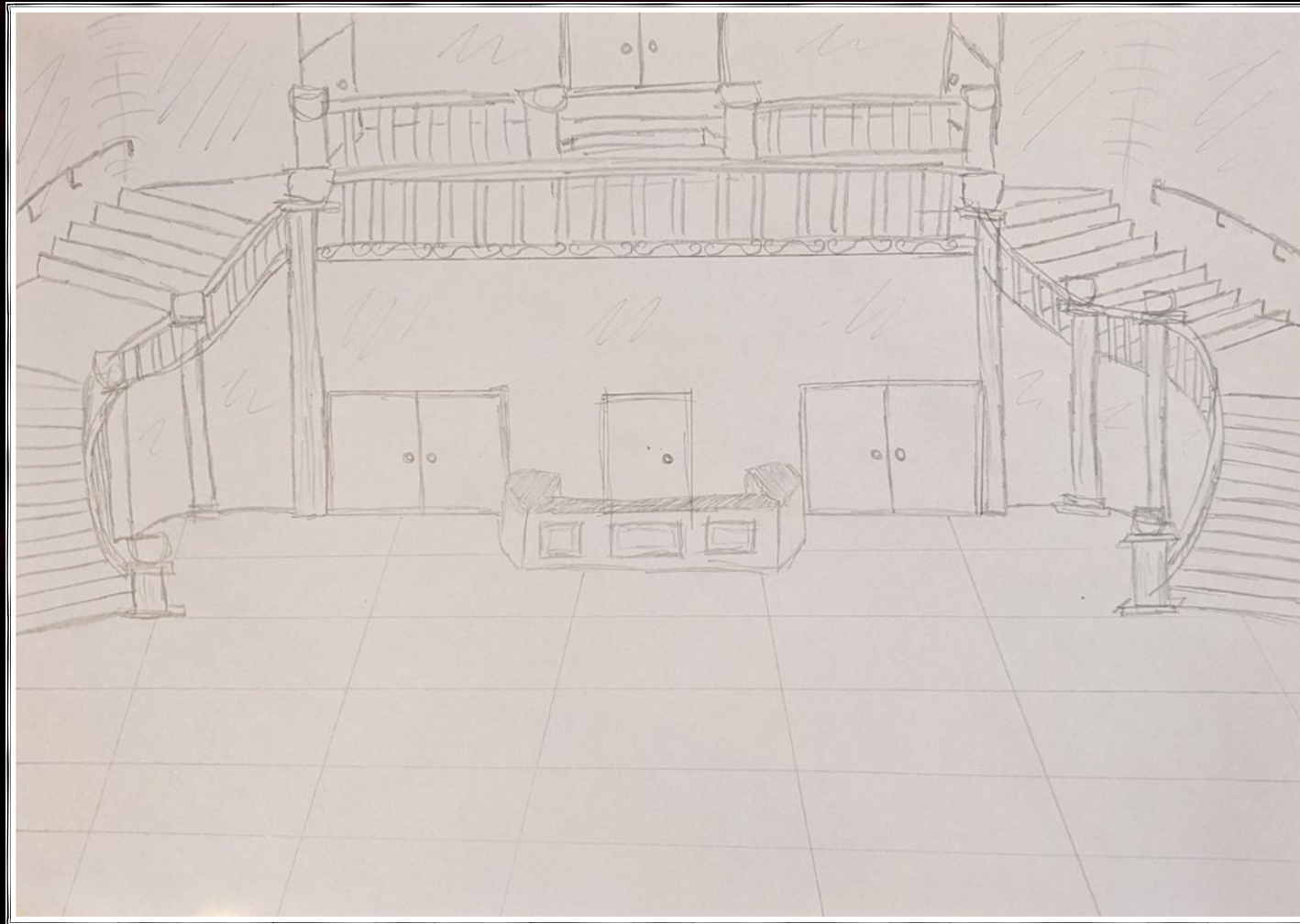
Theatre Layout:: Ground Floor



Theatre Layout:: First Floor

Purgatory

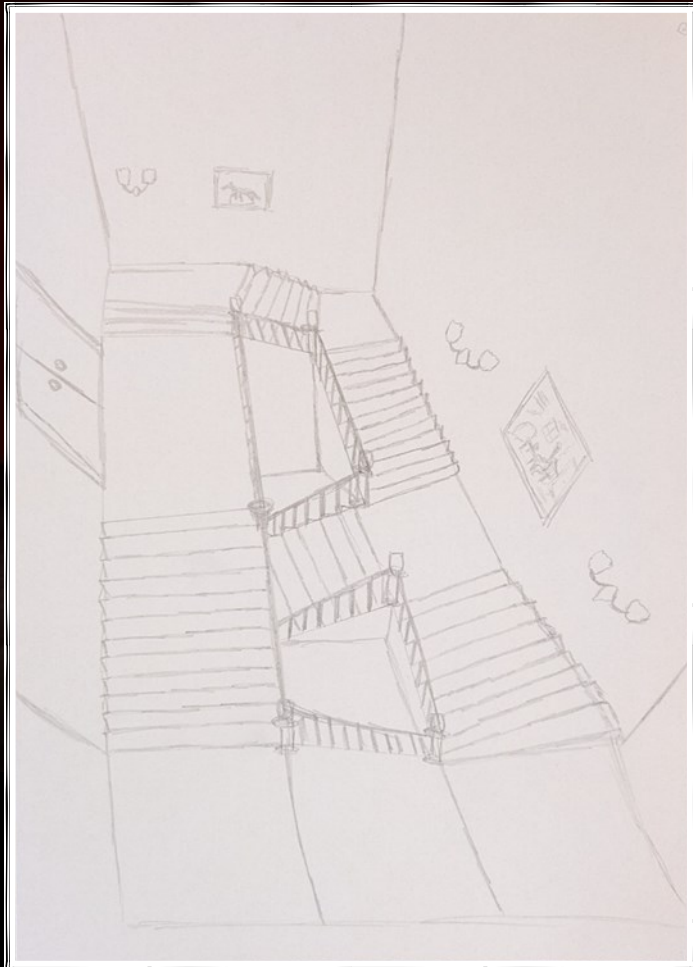
The reception area. The first room that the player will see upon entering the Theatre. Large winding stairs on either side of the room leading the first floor with a small desk in the centre for Theatre goers to purchase their tickets. A large chandelier lighting the room from the centre and double doors leading directly into the Auditorium. This room is the prelude to the openness of the Auditorium.



Theatre Layout:: Reception

Staircase located at the sides of the theatre leading to upper levels. These would be grand with lights on the railing pillars and paintings hung along the walls.

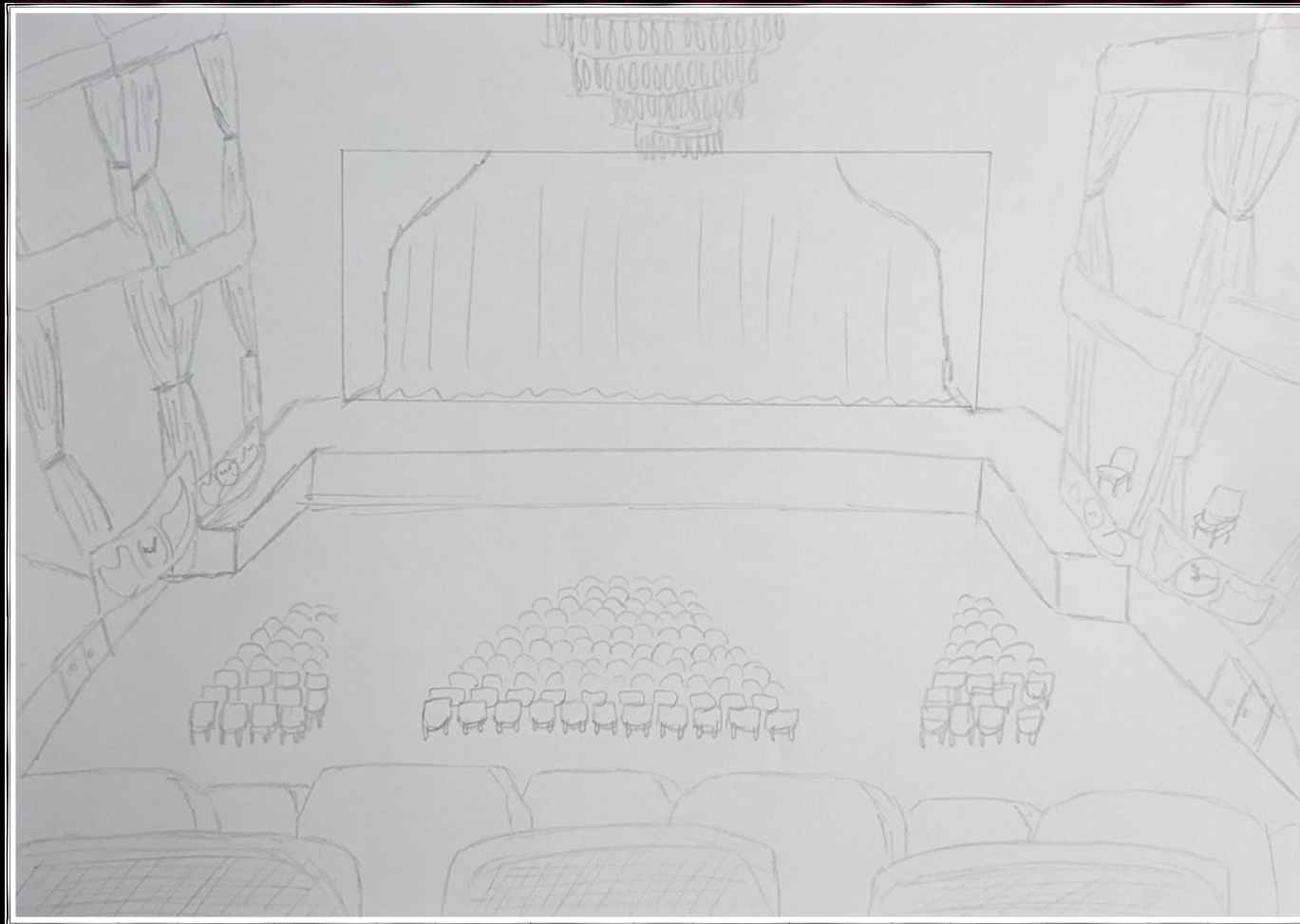
Theatre Layout:: Side Staircase



Theatre Layout:: Bar

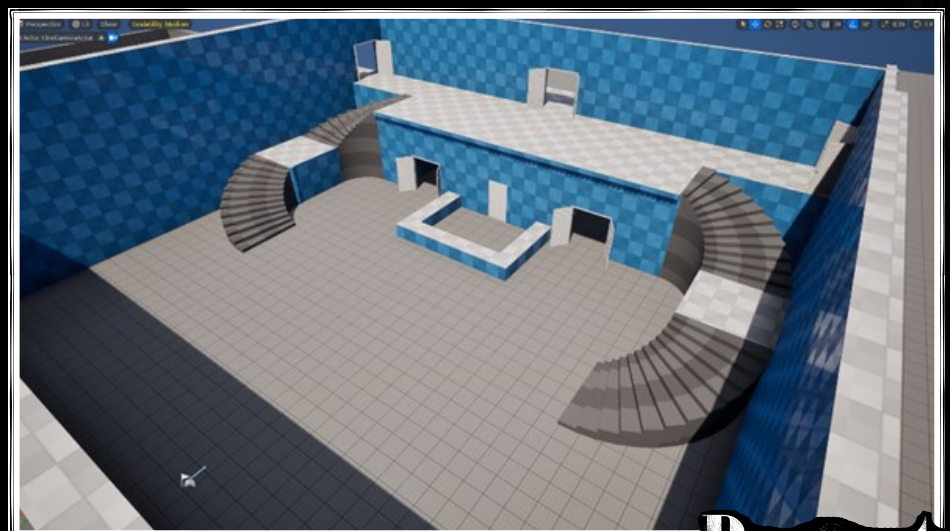
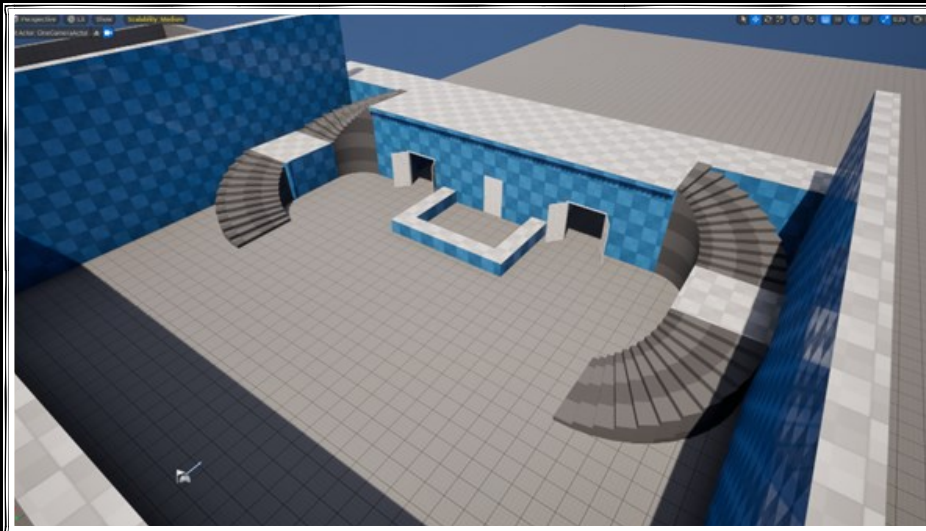
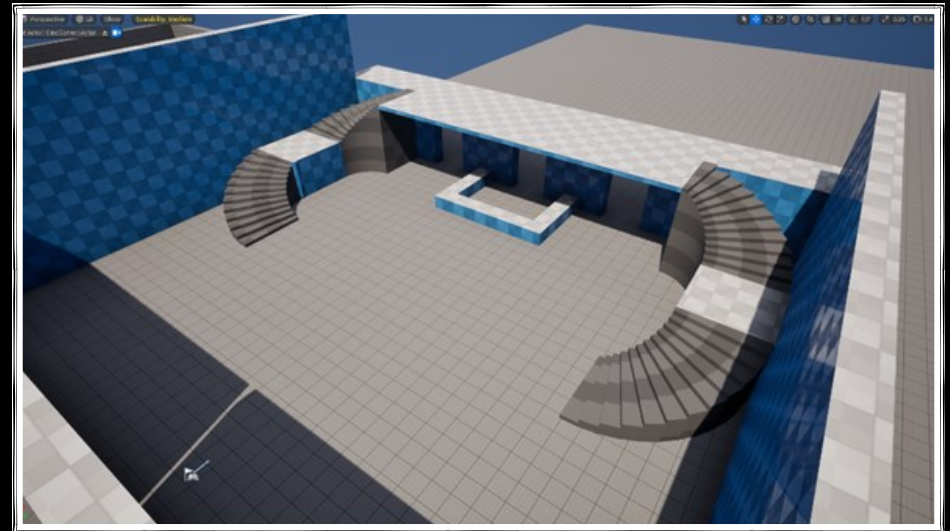
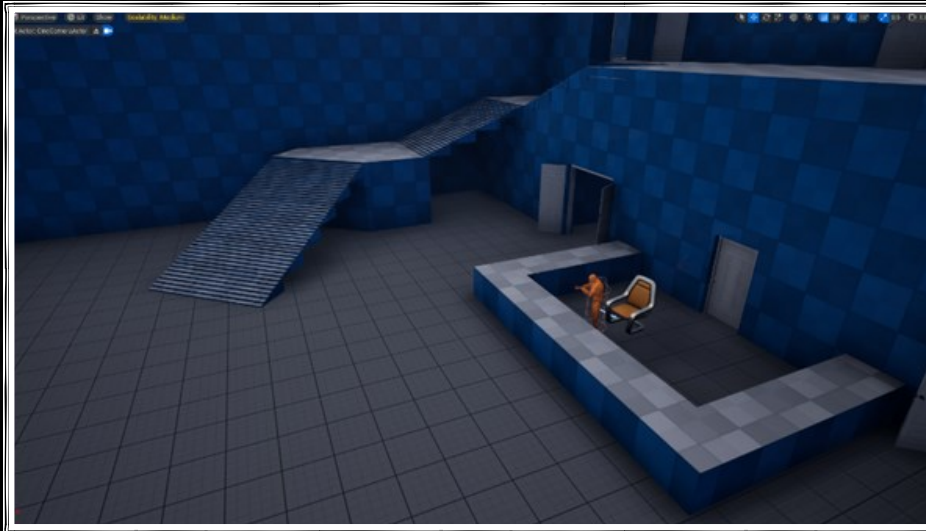
A stylish bar, wooden with a marble worktop. At the back a cabinet lined up with alcohol, glasses, and a reflective mirror to stare at whilst drowning sorrows. These bars would be located both sides of the entrance to the Auditorium, dimly lit by the old shades of orange from nearby wall lights.

The Auditorium, the largest and most awe-inspiring room. Used to make the player feel small and want to explore the building. Lighting is moody, the atmosphere is comforting yet surreal. A dream like room which could easily turn from a good dream to a nightmare in an instant. Private boxes can be seen from the sides, rows of chairs align the top and bottom floors and large chandeliers hang from an ornate ceiling.



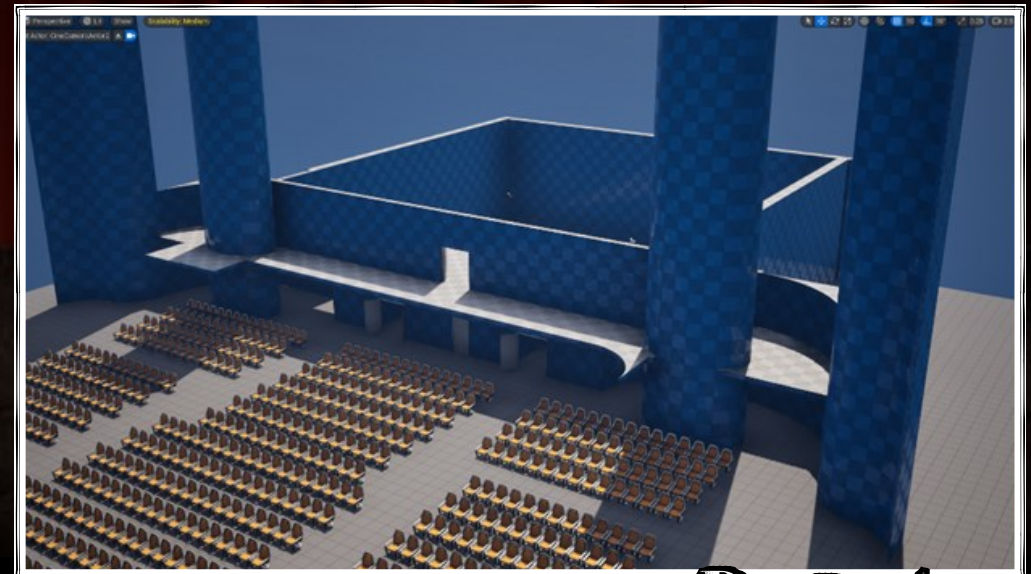
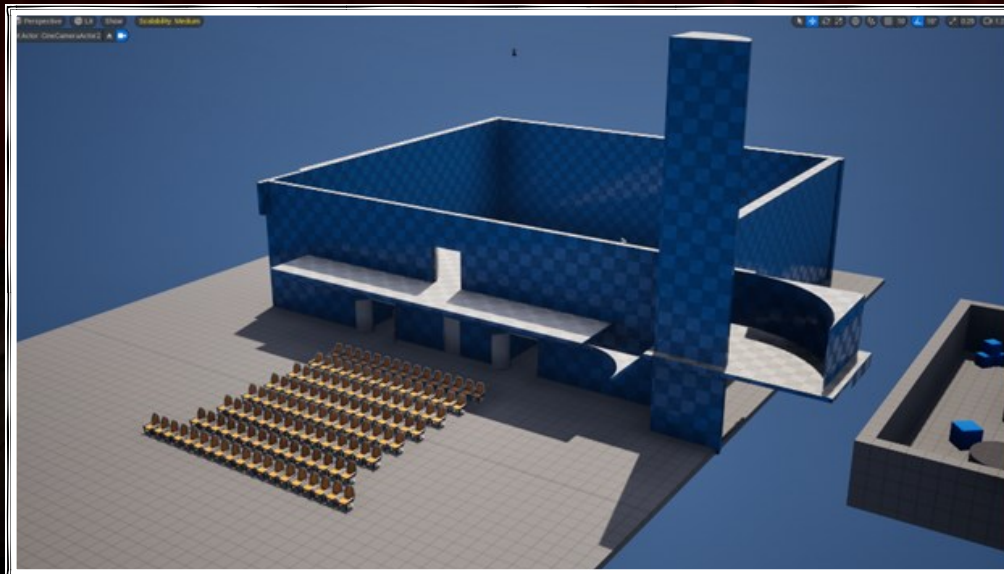
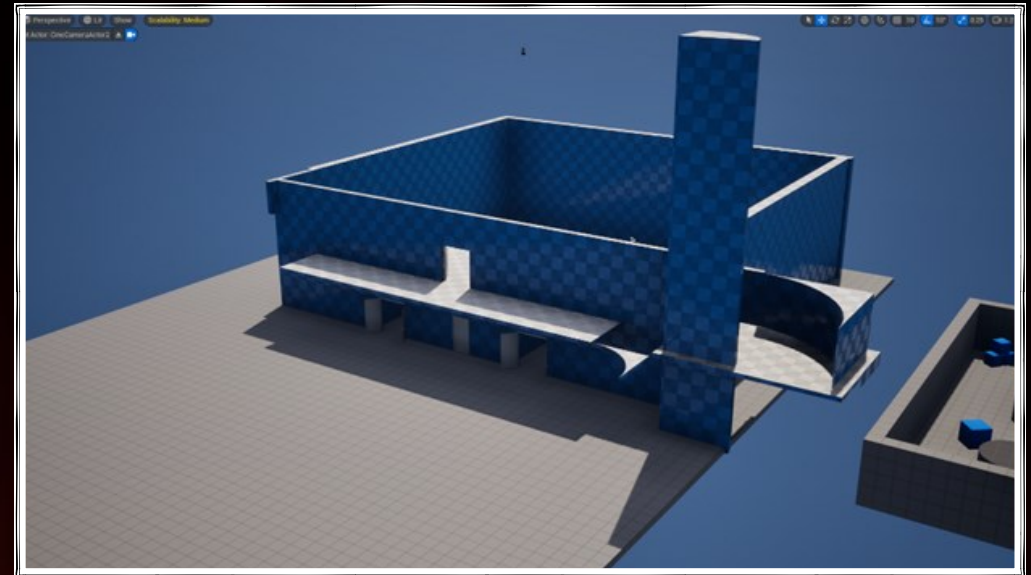
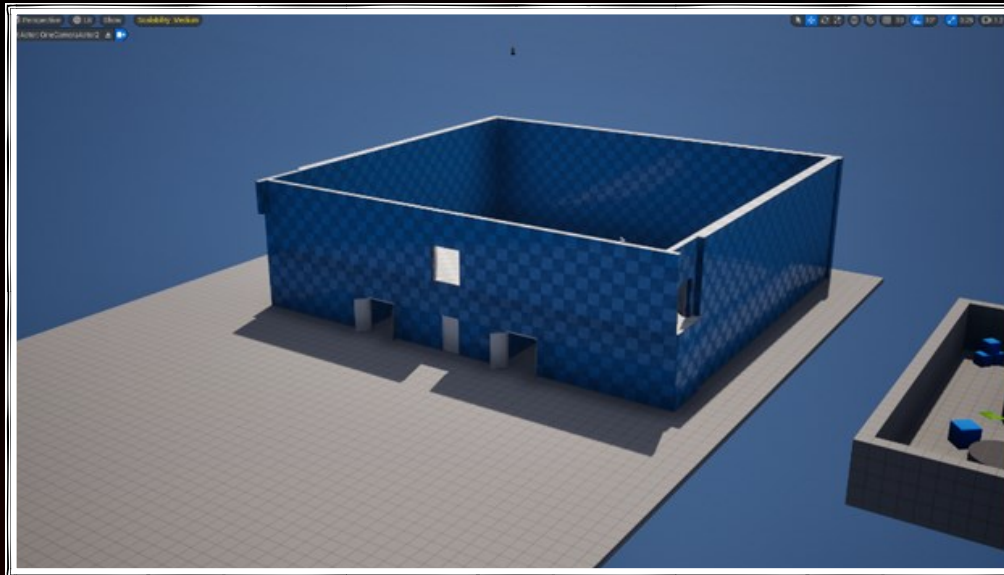
Theatre Layout:: Auditorium

With a basic layout sketched and a good idea for the atmosphere I began laying out simple geometry pieces in the Unreal Engine to block out the Theatre location. I began with the reception room, placing a door and an Unreal character to gain a sense of scale. This is something that proved to be extremely tricky and something to improve on for future projects. The scaling of the Theatre would change numerous times as issues such as character collision and depth would need altering for the first-person camera viewpoint. With each tweak it would have a knock-on effect to surrounding geometry.



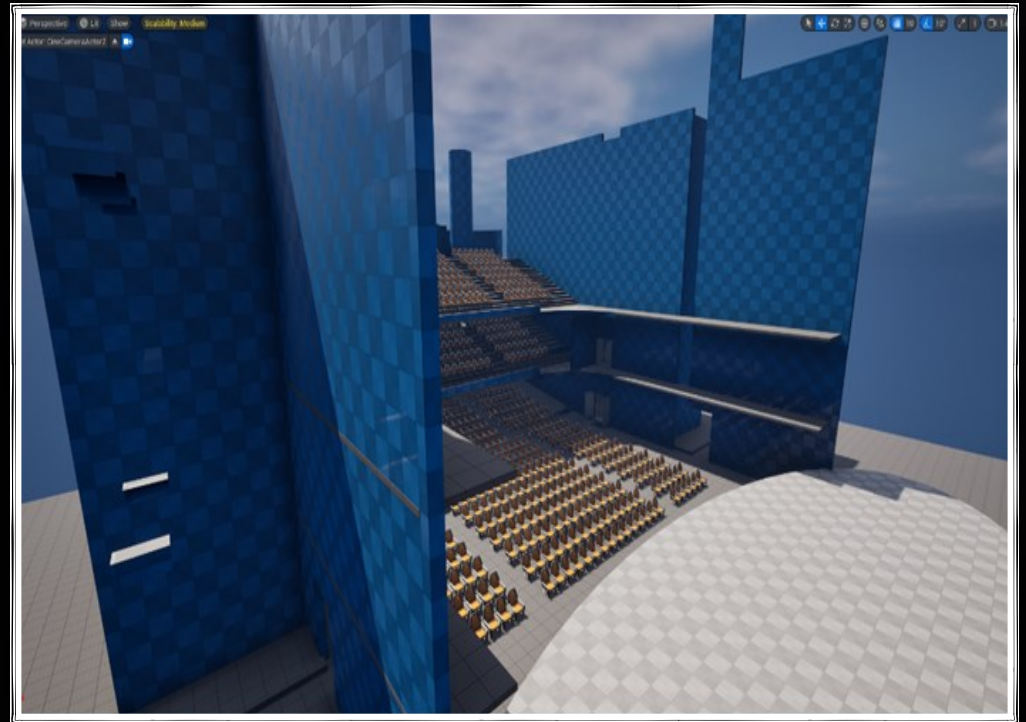
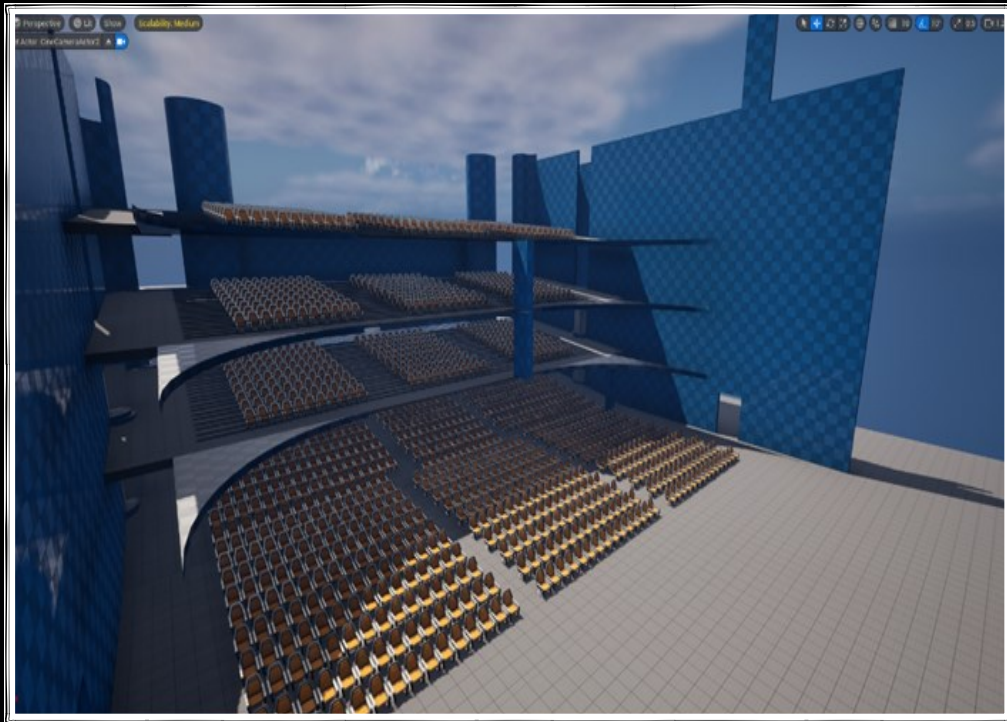
Purgatory

The next step was to move outside of reception and start blocking out the Auditorium. Following the same technique as the reception room I kept everything symmetrical (as a realistic theatre), I started with the first floor and worked my way outwards from there, adding large pillars, stairs, and seats on the ground floor.



Purgatory

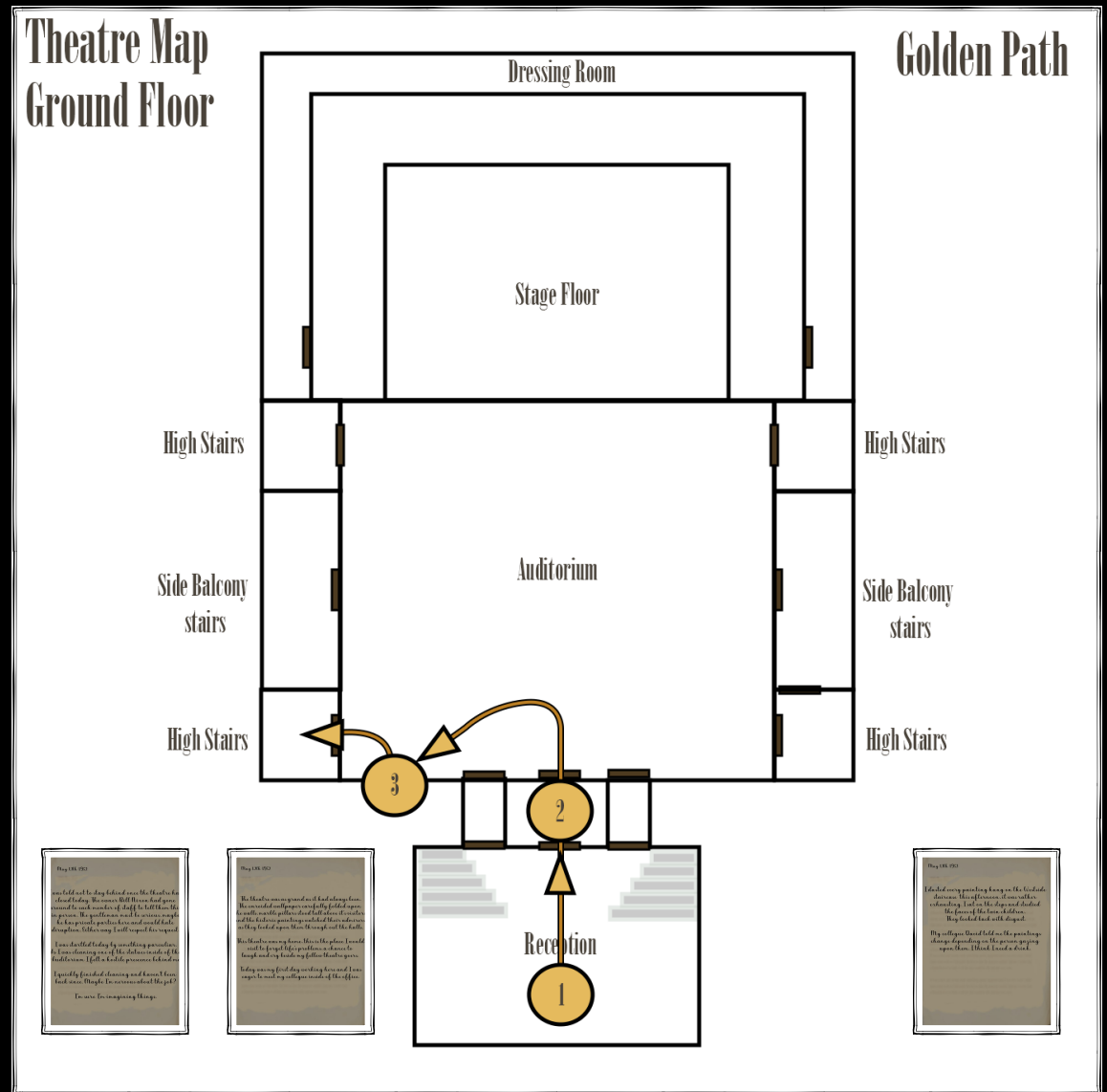
Things began to really open up as seating floors were added and surrounding walls. It wasn't long until I started to realise the scale of the building was too large, and thus began the many attempts to rescale the Theatre to something more realistic. As shown below, seats were removed, walls were brought inwards and an entire seating floor was removed. The reason for the top seating floor being removed was that it served no purpose for the player experience and nothing was lost visually with its removal. After a day or two tweaking the scale of objects and visualising the assets needed to be placed, this was when I began to realise that I had taken on too large of a task. If I wanted to create a project with high enough polish then I would need to rescope and re-think about my goals.



Map design

The project goal was to create a level that players would like to explore. To do this I tried to create interesting rooms and the ability to walk around in any order that the player likes. The problem with this was the level needed some kind of event to keep the player intrigued, this was something I had to constantly review because without a goal in mind the player wonders aimlessly and that isn't fun. To tackle this I introduced a story element and to tell this story are notes placed throughout the theatre. The notes must be collected in order to complete the level by progressing to the back stage, each note contains a clue to the location of the next one. The aim is to guide the player on a set path towards the end of the level whilst also enjoying a narrative.

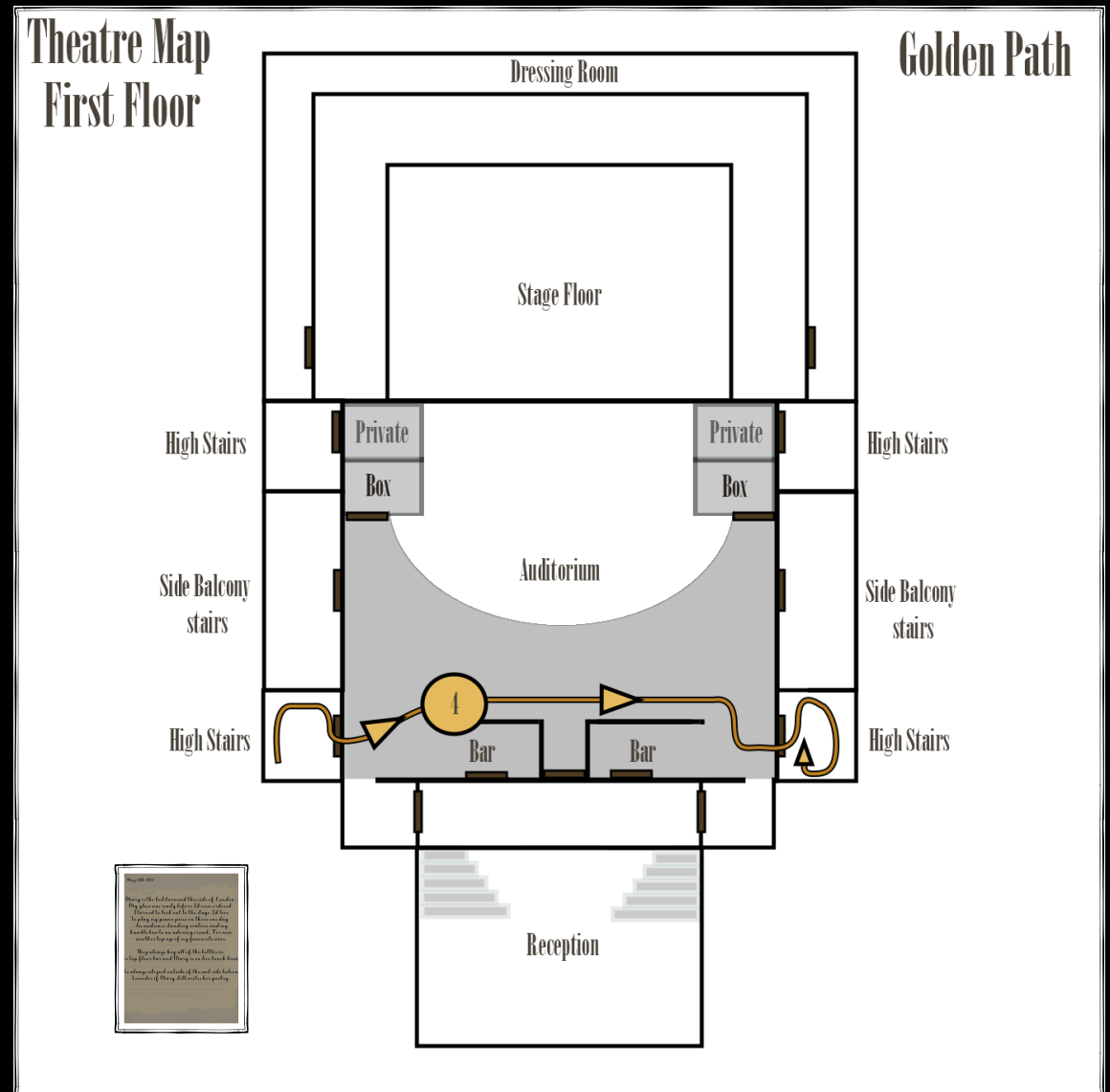
The player begins inside of the entrance to the theatre in the reception hall. They are spawned facing a bloody note left on the clean marble floor, once investigated the next note will spawn inside of the office with a vague hint to investigate the Auditorium statues. The third note is located behind the West side Auditorium statue and the player must find their way to the first floor bar for the next note. There are multiple paths that they can take to reach this floor either from the East side or West via the sets of side stairs or the High Stairs on either side. They can also go back into the reception area and take either sets of stairs leading up to the reception balcony, for this example the player takes the West side high stairs.



Purgatory

Map design

The player makes their way up the east side stairs and exits via the double doors leading to the bar area and the back of the first floor seating. The next note is found on top of the West side bar with clues to venture to the top floor for the next one. The player can only reach the top floor via the high stairs on either side, for this example they take the high stairs on the East side.



Map design

Now the player has reached the top floor they notice a sign on the wall directing them to the area mentioned in the previous note. The area is too dark to see and the player must switch on a light from the side of the wall. Now they can move down into the East side balcony hall, where lying on a table is the next note. This note contains a poem to find the next note which is located on the first floor seating area.

The poem is as follows:

“Three poppy fields for thou to sit with a golden
poppy thyself shall pick

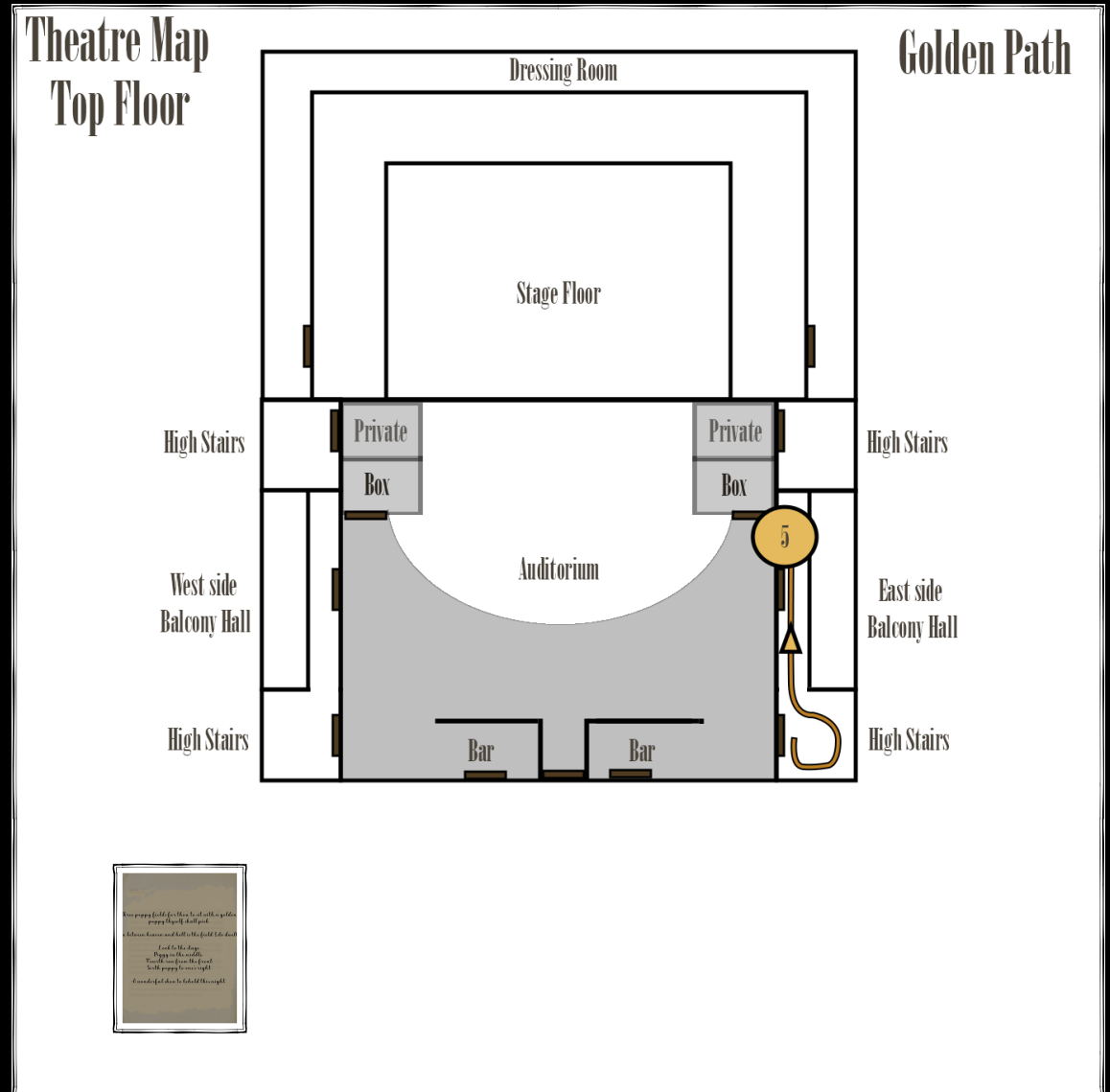
In between heaven and hell is the field I do dwell

Look to the stage, Piggy in the middle

Fourth row from the front, Sixth poppy to one's right

A wonderful show to behold this night“

The three poppy fields alludes to which floor the note is found, with “between heaven and hell” as the clue (there are paintings on each floor containing either a heaven or hell caption underneath them). “Piggy in the middle” refers to the seating in the middle, and the rest is straight forward. It’s an obscure puzzle and I wanted to have an inventory so the player can bring up the notes at a whim instead of walking back to remember the clues but this was unfortunately out of scope.



This note was moved at the last minute of production to use the unused Balcony Hall space and light switch mechanic. Originally the player re-enters the Auditorium and the note is located inside of a wine box behind the east side bar and contains a poem to find the next note which is located on the first floor seating area.

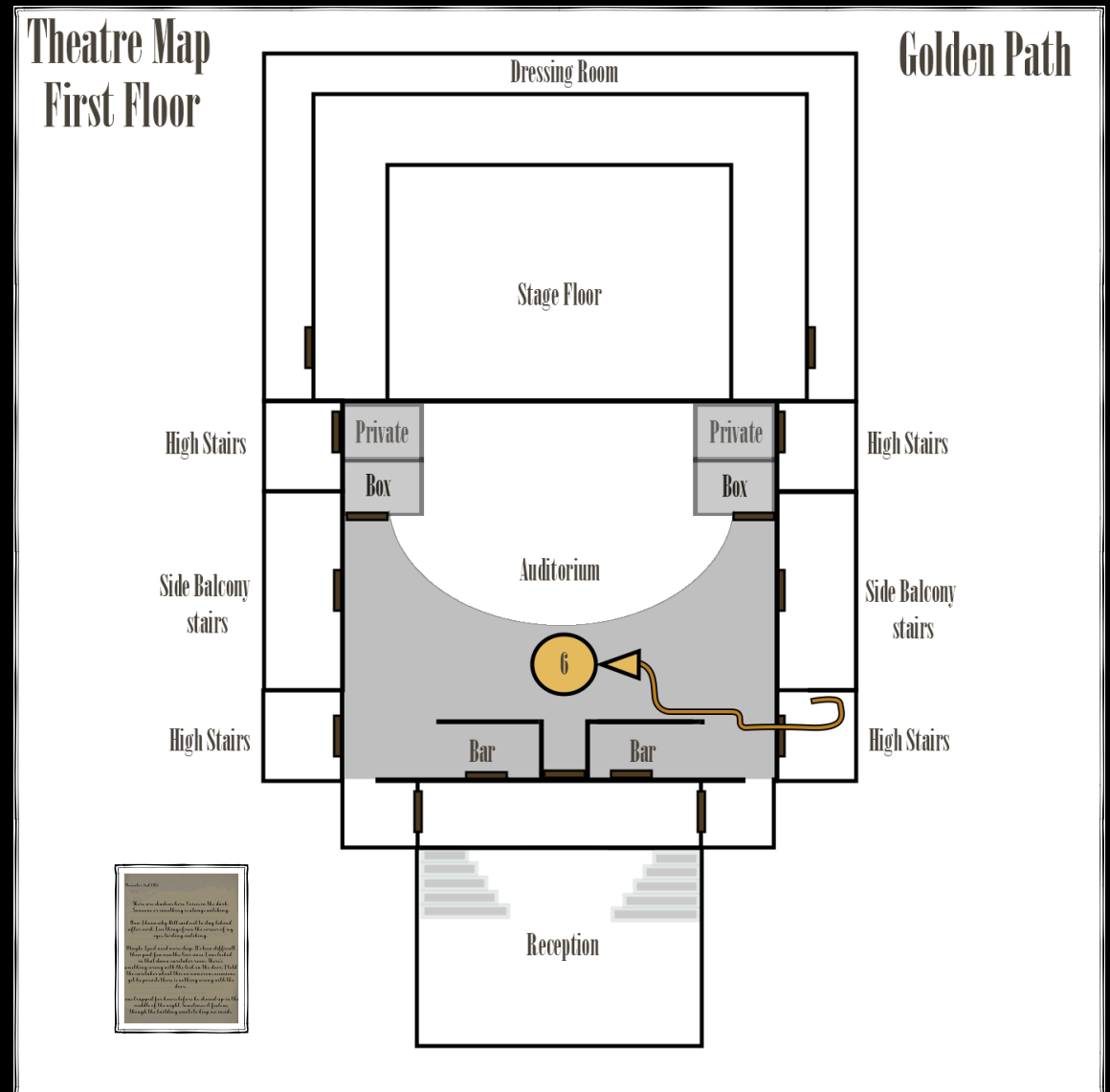
Purgatory

Map design

Once the player has solved the poem they exit the high stairs onto the first floor and head down the seating slope to the middle section where they will find the last note containing a diary piece.

The player is hinted to look into the caretaker's closet which can be found in between the ground floor and first floor on the east side high stairs, the player may have missed this room and must explore the theatre to locate it.

A last minute addition to make the caretaker's room stand out to the player was added lighting and audio. In the final build there is now a spotlight in front of the door and the player can hear a woman crying from inside once the correct diary note has been triggered.



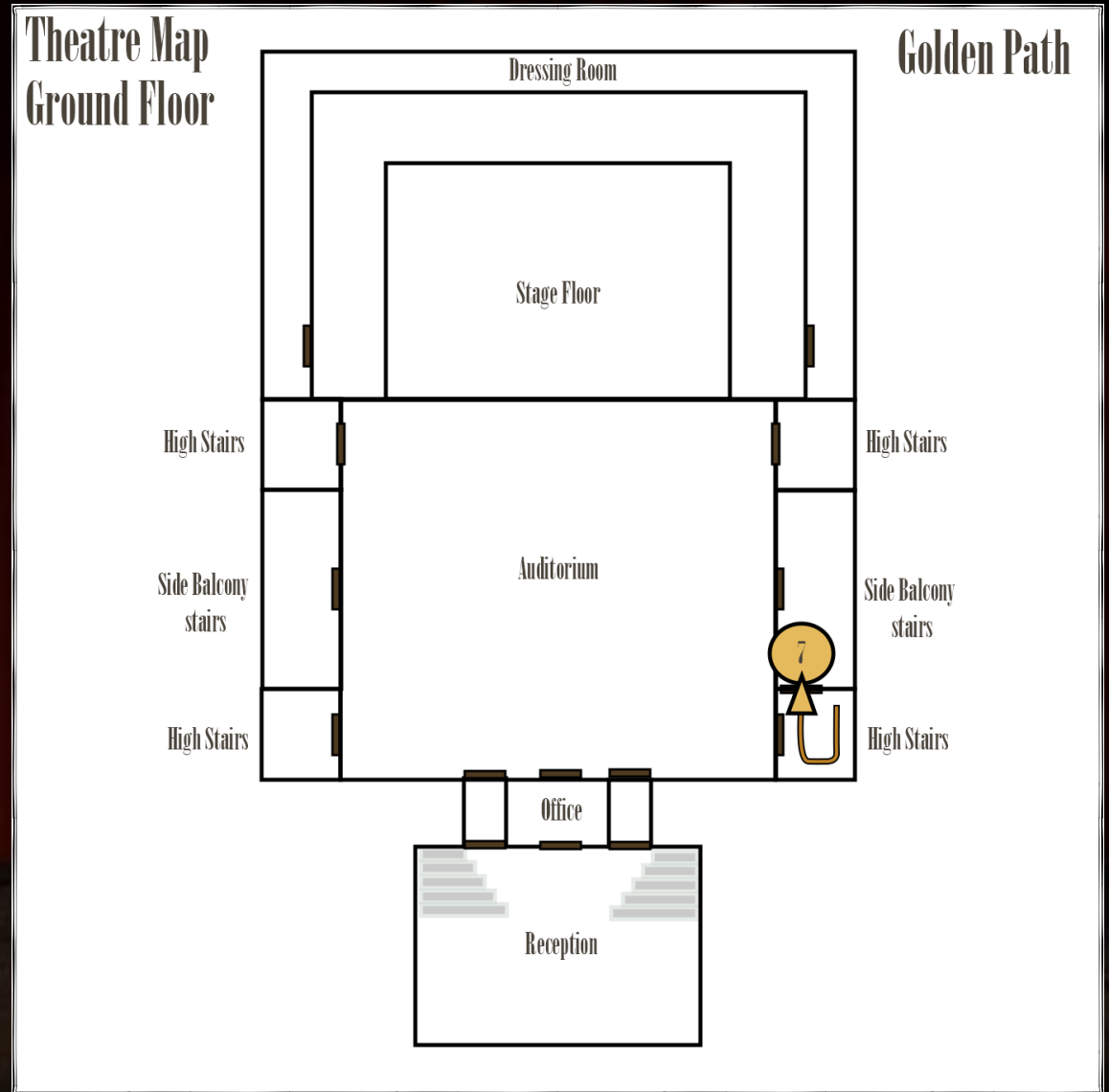
Purgatory

Map design

When the player locates the room and enters they witness an event which keeps them locked inside for a few seconds. Once this is over the player then exits the closet to see a note (this time a newspaper article) pinned to the staircase pole. The article gives a clue to the next location which is the private box on the east side, the player can reach this area by using the high stairs of the side stairs on either side, for this example the player takes the east side stairs to the ground level.



The newspaper article's clue can be a little trickier to spot, this was deliberate to get the player thinking a little harder. The clue can be found underneath the photo of the burnt theatre box where the article claims was the location the fire was first spotted.

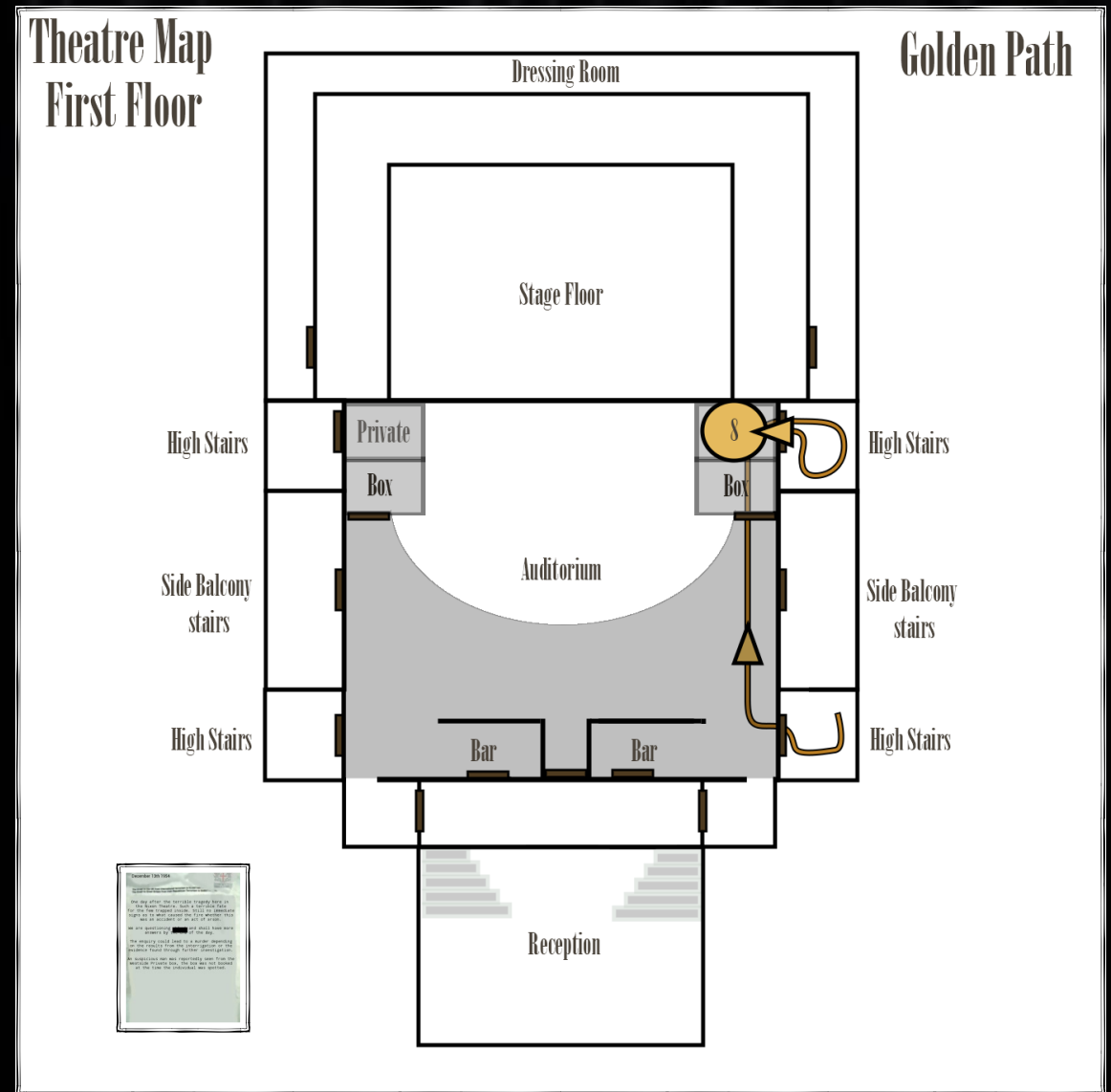


Map design

Once on the ground level and back into the Auditorium the player walks towards the stage and past the side doors until they reach the north east corner of the room with a single door. This is the only way to reach the private box rooms on the east side, the player enters them via a set of high stairs behind the single door.

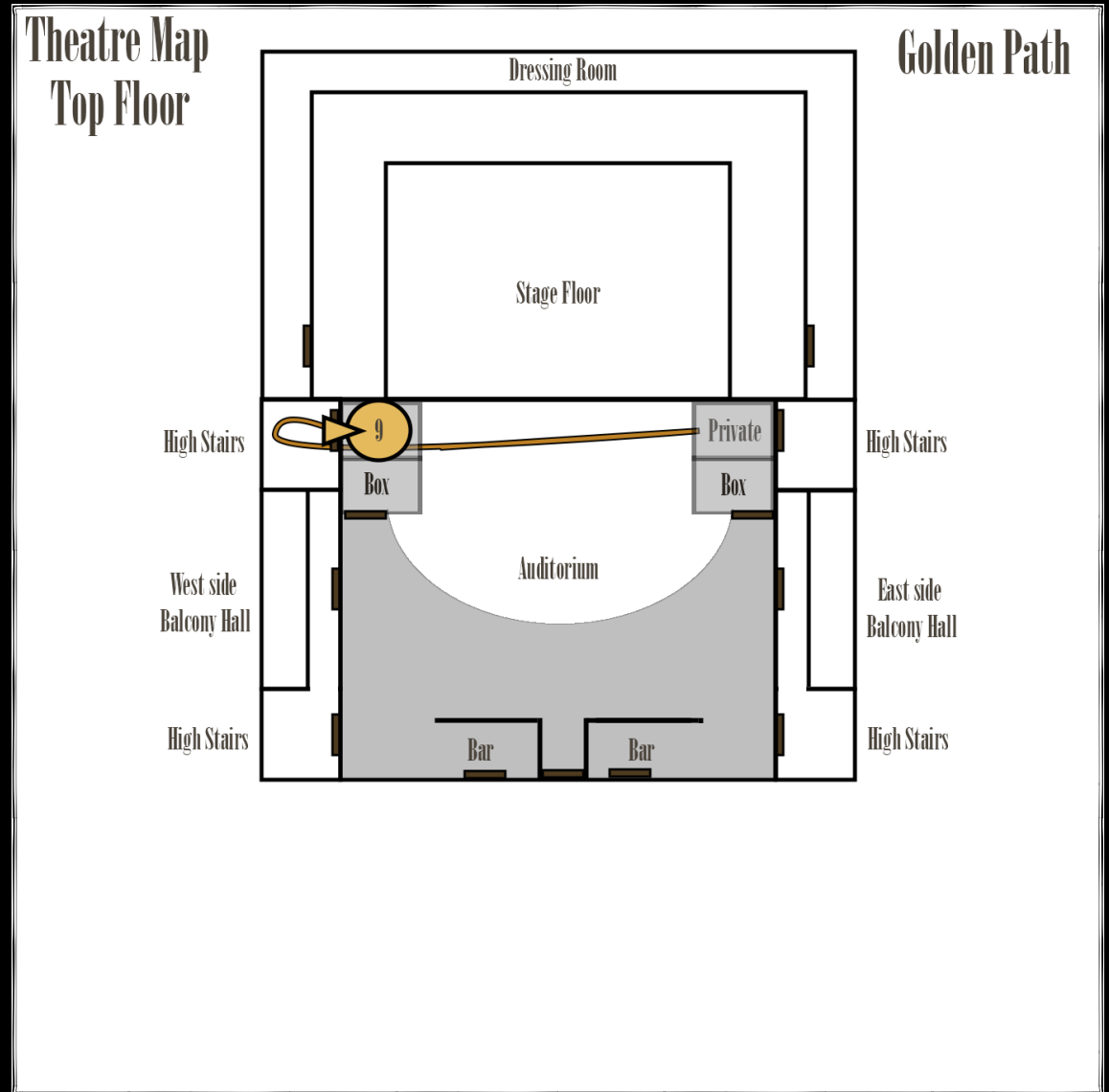
There is access to the first and top floor east side private boxes from these stairs and the note is inside of the first floor box placed on a table. This note is one of two police inquiries, with this one alluding the player to venture to the west side private box on the top floor.

Inside of the Private Box where the note is located the player can see a figure from opposite the Auditorium inside of the top floor Private Box. This was originally the only clue to venture to that area but at the last minute I decided to add extra text to the note as well due to player feedback.



Map design

The player must go back down the stairs and exit into the Auditorium room and walk to the opposite west side to enter the high stairs that lead to the private boxes in the same way as the east side layout. Once at the top the player enters the private box and is lured to go back into the Auditorium on the ground floor. The player comes across another police inquiry which hints to check out the West side middle stairs.

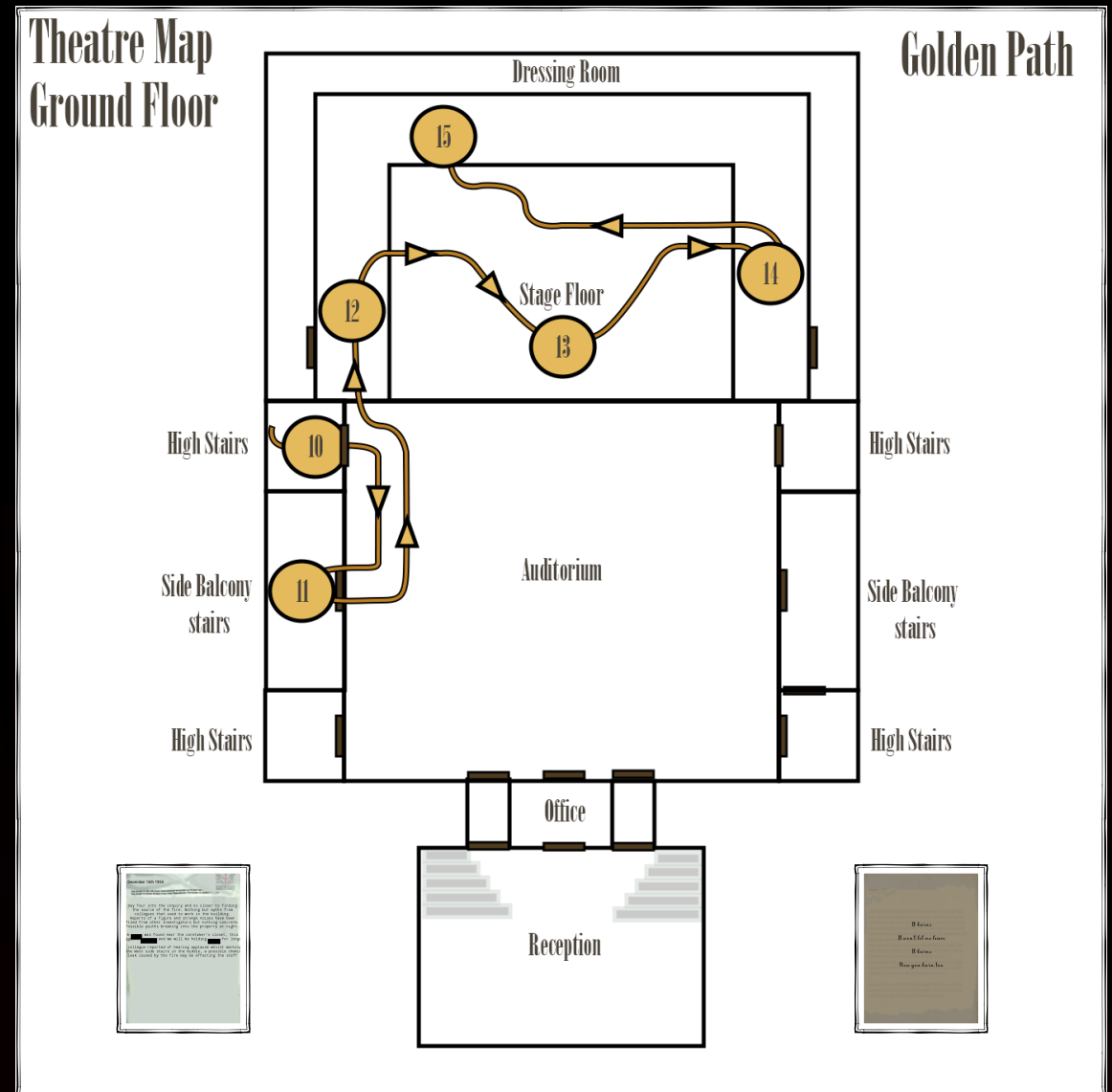


Map design

The police Inquiry guides the player to the West, side stairs where they will encounter another event. This event triggers steps and lighting that give access to and guide the player towards the back of the stage. Once on the stage the player can access from the West or East side where there will be a light switch on the wall. Turning this switch on turns on the lights backstage so the player can see the area. This triggers music and lures the player towards the piano on stage, once close enough the lights go out and a new light appears on the East side bottom corner of the back stage.

The player goes towards the light and enters a castle structure prop where a note is hanging from a shelf.

Once this note is read, new lights appear on the stage floor directing the player to a now accessible area on the back wall. Once the player enters this new area a sequence is played and the game ends and re-starts at the very beginning .



Purgatory

Lighting & Visual Effects

Purgatory

Spotlights

Spotlights were used not only to light the environment in a realistic way but also to provide affordance, to guide the player towards points of interest. A large portion of them were included inside of blueprints, an example would be the flickering spot light which until triggered is set and pointed towards the back of the stage. Once triggered this light begins to flicker to get the attention of the player to venture in that direction. Another example is the climax of the level located at the back of the stage, the player is led by spot lights that spawn when triggered towards points of interest and then finally the end of the level.

The map layout of the Theatre is lit



Spotlight that points the player towards the back stage



Spotlights

The spotlight puts the statue in frame, guiding the player towards it. This is the area in which a note can be found.



The bar is lit by a spotlight which sets the mood for this area, keeping it dimly lit.



Spotlights

The prop area back stage is lit by spotlights which keeps the corners darkened, increasing player imagination as to what is in the dark spaces.



The backstage must be lit by hitting a switch to turn on the spotlights. They switch on one by one in a set order to increase the player's anxiety.



Purgatory

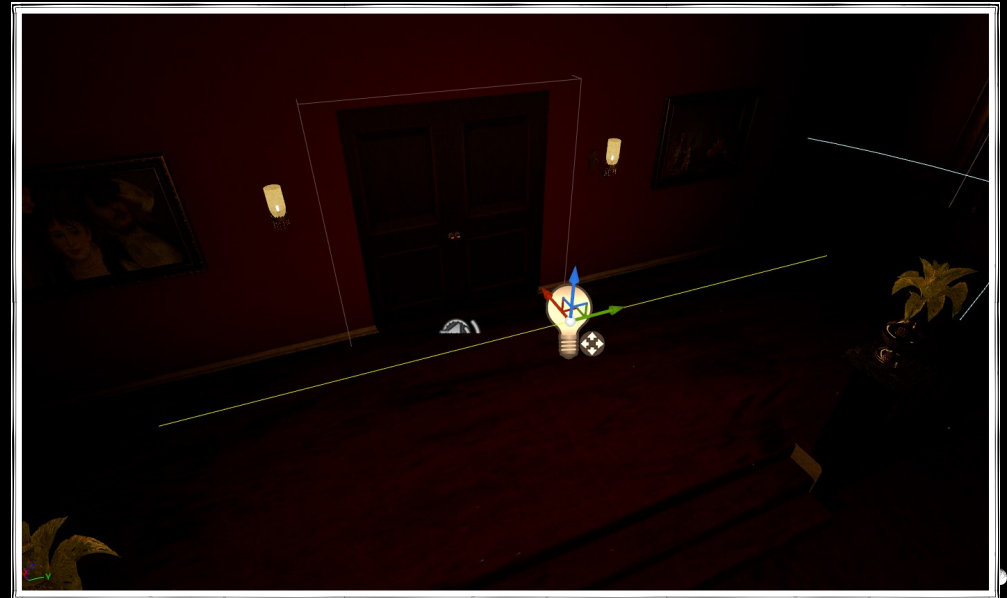
Point Lights

The level is filled with point lights mostly to just keep areas well lit enough for the player to see where they are going. They created a great use of the volumetric fog in certain situations but in others I had to remove the source and set it to zero due to the source of the lights being visible in the fog to the player. This wasn't a problem when placing the point lights inside of a wall light or chandelier but was an issue when they appeared to be floating in the air with no device for them to logically be emitting from. As with all of the lights there was a major performance hit due to the amount placed in the level, to tackle this I had to tweak settings so that the lights would not light when the player was far away. This was difficult due to the Auditorium being such an open area and a far view point. As another solution to performance I tried to cut the light count in half by using one point light for two lights close together. This had a negative effect on realism but it was a balance I was constantly fighting through out the project.

A point light lights up a huge area in the Auditorium from the chandelier, the source length was increased to give the illusion of light emitting from the chandelier.



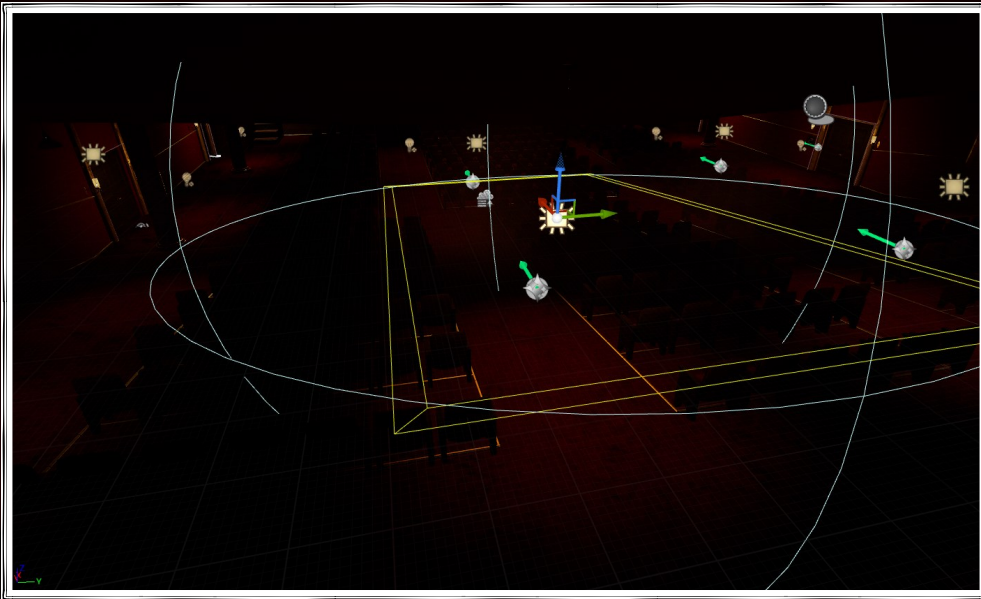
The source length was increased here to give the illusion that both wall lights are lit whilst trying to avoid point light count.



Rect Lights

These were used as sparingly as possible due to the highly negative impact on performance. I used them to light up large areas in a rectangular shape, for example the seating area or the corridors and other walk ways found throughout the Auditorium. Originally I had a lot more of these but had to swap them out for point lights because of the reasons discussed. I also used these lights in the bar area to light of the cabinets at the back containing the glasses and

The Auditorium walkways lit to guide the player.



The seats needed to bit properly lit half because it is needed during a puzzle and half because I spent a lot of time modelling them.



Reflective Spheres

Reflective spheres were placed in important locations to get the most out of the lighting system with reflections on assets.

Postprocessing

A crucial component to the atmosphere of the game was using a post processing volume inside of the Unreal Engine. I tweaked values in the lighting exposure compensation and applied a noise filter with intensity to give a classic horror on VHS effect. Vignette intensity has been added, this creates a slight dark circle around the edges of the camera and a lens flare for added realism.

Before exposure compensation



After exposure compensation



Before Lens flare



After Lens flare



Purgatory

Postprocessing

A small tweak but increasing the temperature setting in the post processing volume allowed me to add more of a warm glow. This was much closer to the colours and feeling I had of the Theatre when setting out on the project.

Before Temperature



After temperature



Purgatory

Volumetric Fog

Just as important as the post processing I placed a Volumetric Fog into my level and tweaked with the settings. It was difficult to get this right due to having a detrimental effect on the performance of my project. I managed to get the balance as best as I could though giving a much more atmospheric and spooky vibe to the Theatre with it's lights casting a foggy space.

Before Fog intensity



After Fog intensity



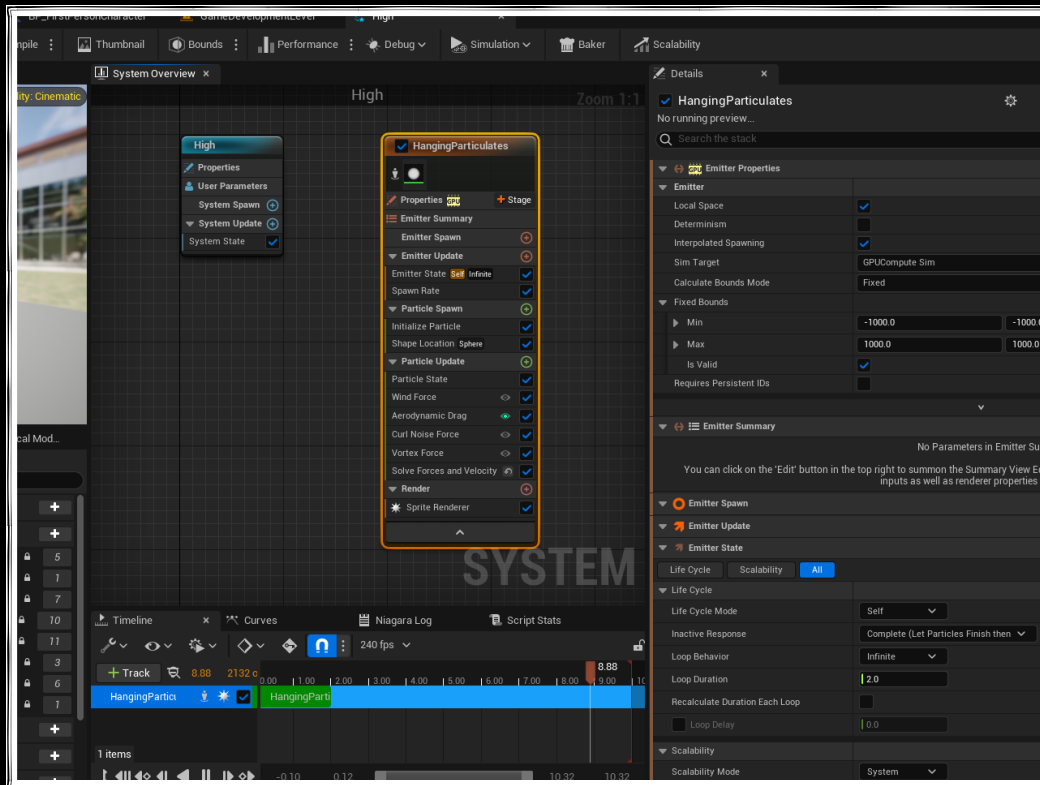
The fog was also tweaked to give an orange glow, something I went back and forth with from red to orange but decided to match the colour of the lights for consistency. The height and falloff values were also tweaked so that the player could not see into the back of the stage when in the auditorium as this broke the immersion.

Purgatory

Dust Particles

As an extra bit of polish for the game and to make it look less like a still picture and more alive, I set out to create some dust particles. This particle system took a lot of tweaking as it had a negative effect on performance, which was very frustrating as I wanted to have these all over the level. To compromise I spawned less of them and only used them in certain locations such as areas which contain lights, to give off the impression that they were all over the level but hidden unless you see them when stood in the light.

Particle Blueprint



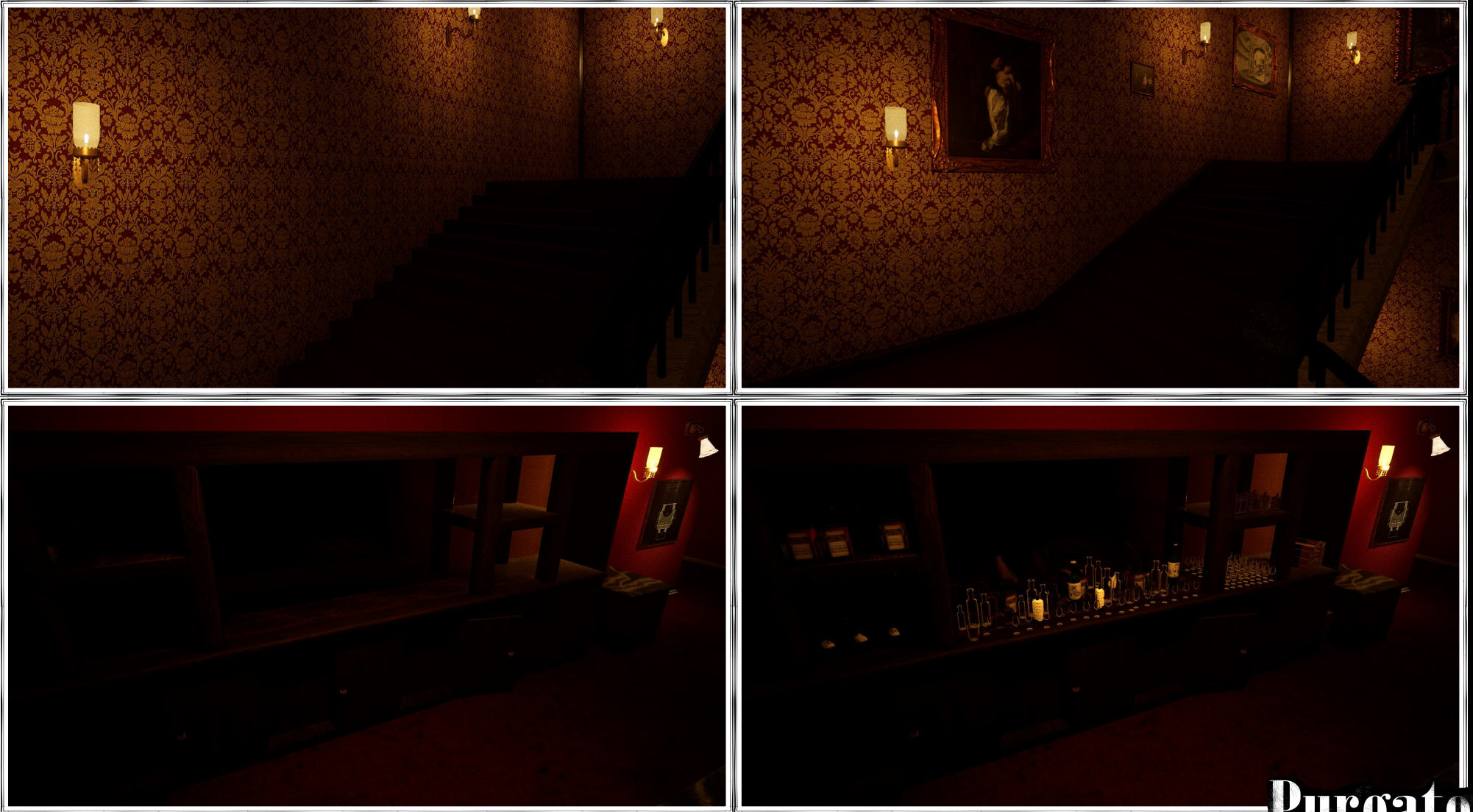
Particle showcase



I created three different versions of this particle, each with different amounts of particles spawned (this was so I could use smaller ones for point lights and larger ones for reflective lights due to a larger area). I also tweaked the way the particles spawn by spawning some into a cone shape to use for a spot light.

Trimming/meshing

Towards the end of the project, there was a need for added polish. With a small window of time left and a refocus away from creating solely my own assets, I used asset packs from the Unreal Market place to fill the environment. I used paintings, glasses, chairs, tables, vases and many more to make the Theatre more believable. There was also a need to add trimming around the walls such as skirting boards and corners for the walls to make everything look less blocky.



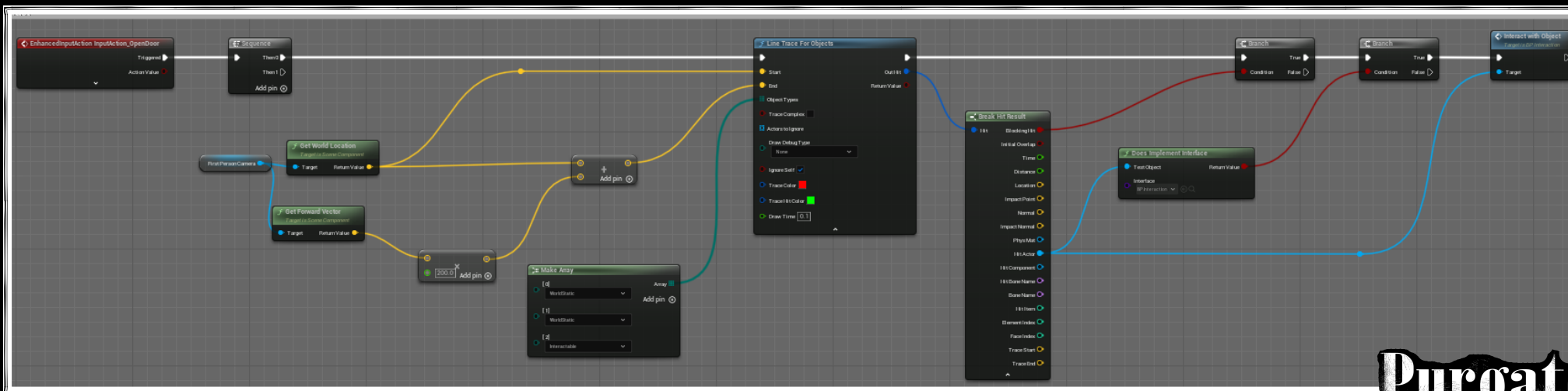
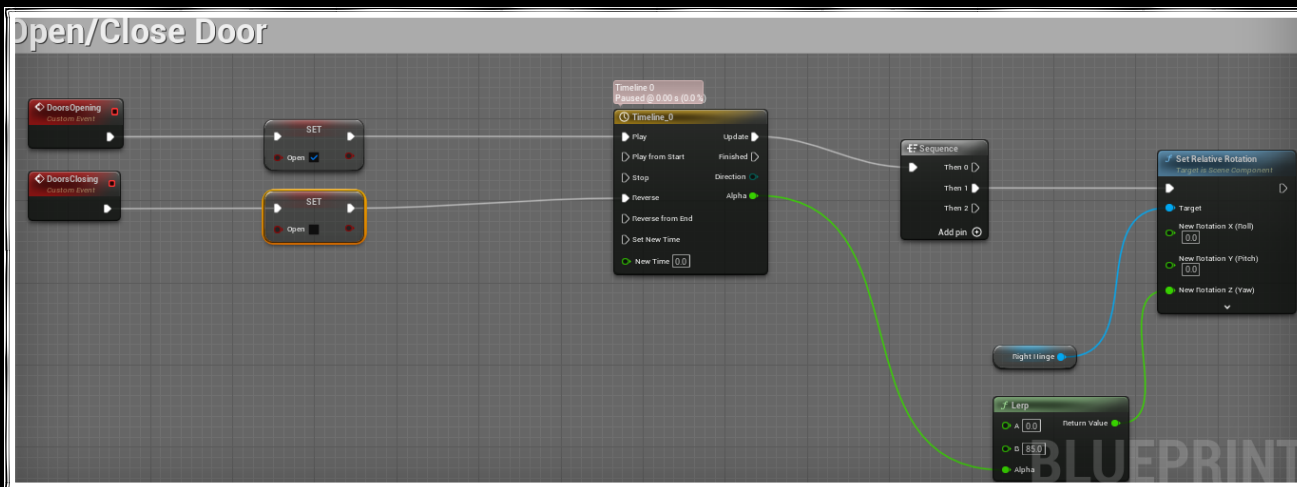
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Blueprints

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Doors

The lighting made a world of difference in setting the mood and atmosphere of the level but to immerse the player to the next level I needed something that would increase the interactivity that the player had with the game. The first and most obvious way to do this was to have interactive doors which the player could open and close as they wished. To do this I created an “input action” blueprint (BP) for the button presses, created a function “interact with object” and then created the event inside of the player’s BP using a “line trace” to find said objects. Once prompted at the correct distance the doors would open via a “timeline” then close after a few seconds. The player is able to also close the doors themselves if they wish to. The doors also contain sound effects and attenuation.



Purgatory

Fallen Painting

The west side set of high stairs is already a fairly creepy area in my opinion due to the lighting and paintings but I wanted to make the player a little more on edge but in a subtle way. To do this I looked at what I could do with the paintings on the walls and use them in interesting ways to give a sense of unease.

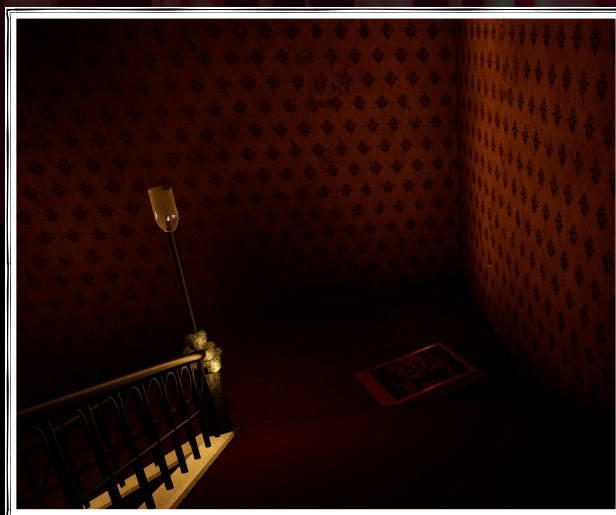
I did this in a couple of ways but the first one was once the player walks past a certain point on the stairs they will hear a loud crash behind them, once they turn around they can see that the painting on the wall has fallen to the ground.



1

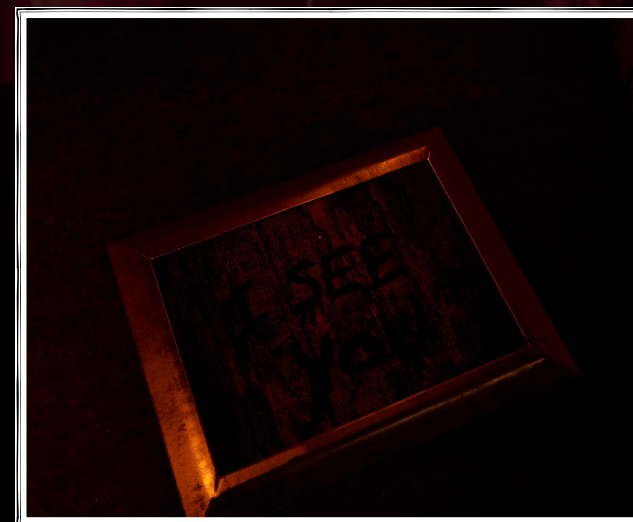
This was done by giving the painting physics and gravity once the player had triggered a collision box. Sound effects were also added so the player has their attention brought to it. There is a bit of luck involved on whether the painting falls in the correct place, it usually works around 80% of the time but on the odd occasion the painting lands on it's side.

The player can either carry on up the stairs or inspect the painting for a closer look.



2

If they get close enough they will see the words on the back of the painting "I see you".

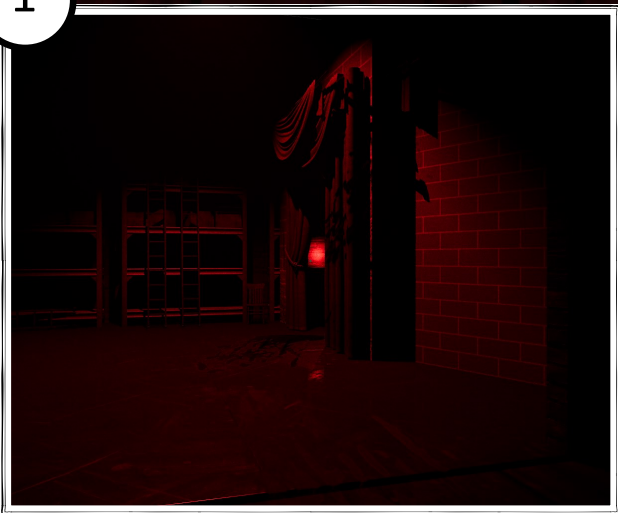


3

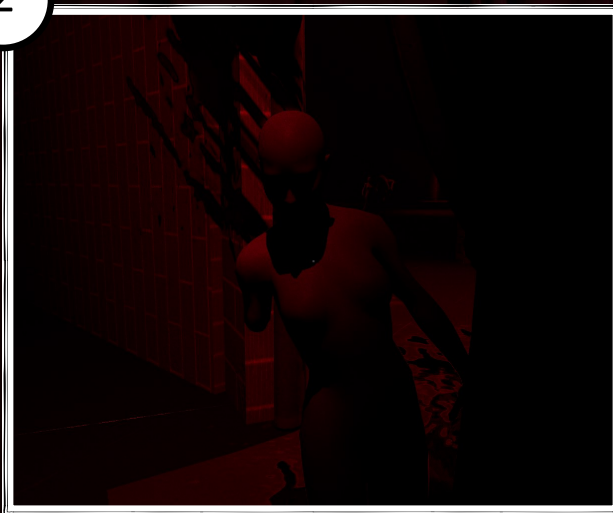
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Final Scare

1



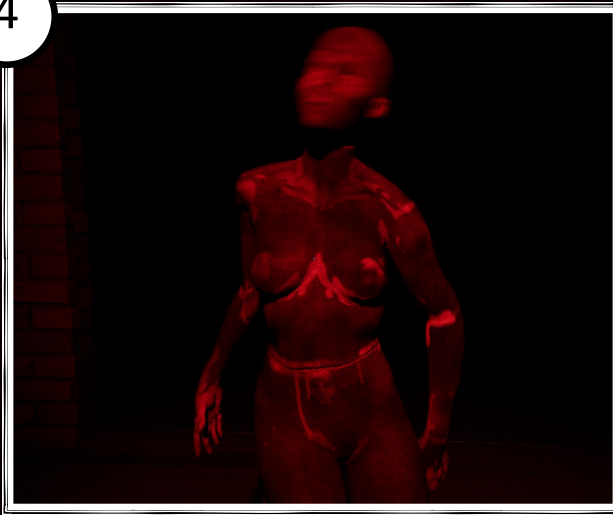
2



3



4



This is the climax to the level, I needed an increase in tension and a payoff that keeps in line with the genre. To do this I decided on a confrontation with the figure seen through out the level albeit a very limited one due to scope and time constraints. It begins when the player enters the back stage and approaches the pianist playing the piano. Once the player is close enough the lights go out, intense music plays and a red light appears guiding the player into a castle structure prop. There is also a trail of blood leading into this structure for extra affordance and story telling. Once inside there is a note seen hanging from a shelf, once read the player can hear a breathing sound coming from behind them, they turn to see a mannequin has appeared in the doorway.

New red lights in the stage area are spawned once this has been triggered that guide the player towards the back wall. There are multiple mannequins that have also appeared along with the antagonist figure that can be seen quickly crawling along the floor.

Once the player reaches the back wall and enters through the doorway a cutscene is triggered where the player comes face to face with the antagonist and meets a final end.

There is a lot going on here, there are multiple blueprints talking to each other, there are the lights which when triggered change their intensity and colour, the mannequins which appear with collision enabled, decals for the blood trail, music cues, walls appear and disappear to keep the player contained in the area and there are multiple sound effects with attenuation not to mention the crawling mannequin makes a return.

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Figure in the shadows

When the player collects one of the notes they are guided towards the private box on the opposite side. I wanted to add more affordance to communicate this whilst also creating a spooky event. I decided on spawning the level's antagonist to appear at that location when the player enters the correct area which would then vanish when heading in that direction.

2



1



This was a simple hide mesh and appear when prompted blueprint, the actor is then destroyed by a trigger on the stairs that the player heads down after the event is shown.

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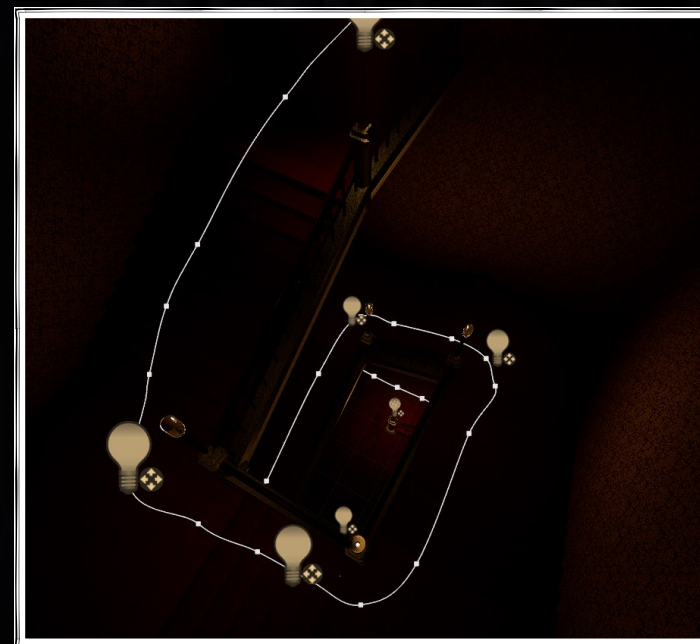
Piano player

1



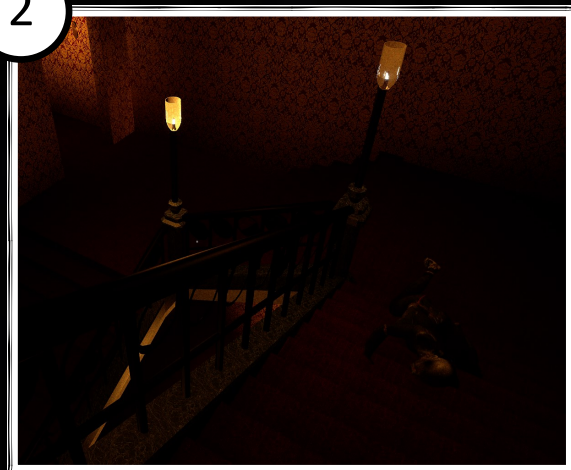
Once the player reaches the top private box, piano music can be heard coming from the piano on stage. Upon a closer look the antagonist of the level has appeared playing the piano. I used actors to play music once triggered along with attenuation for realism and a simple hide and appear node for the pianist with a set animation for extra polish.

Example of the spline along the staircase



Crawler

2



When the player heads back down the stairs I wanted to give them another event that they may not expect. I decided on created an actor that would give the illusion if crawling up the stairs that would vanish when hitting the player. I used a crawl animation for this and a spline track.

Haunted Paintings

Most players would not notice this slight change but I wanted to create a subtle scare event that would make the player question whether the event had happened. This was to change the paintings on the walls via a trigger point by swapping the materials inside of the blueprint actor. I was only able to do this for three paintings but with more time I would have added many more in different areas of the theatre. The pictures are all real works of art that change from a seemingly normal painting to something more horrific as shown below.

1



2



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Falling body

1



There is a body hanging from the ceiling that is hidden until triggered, once triggered the blueprint toggles the gravity, hidden mesh and physics to “on” causing it to fall from the ceiling. The actor is destroyed after a few seconds upon landing.

This event is triggered by the player entering the top floor box west side. I wanted to create another subtle event where in this case it’s a “blink and you’ll miss it” situation.

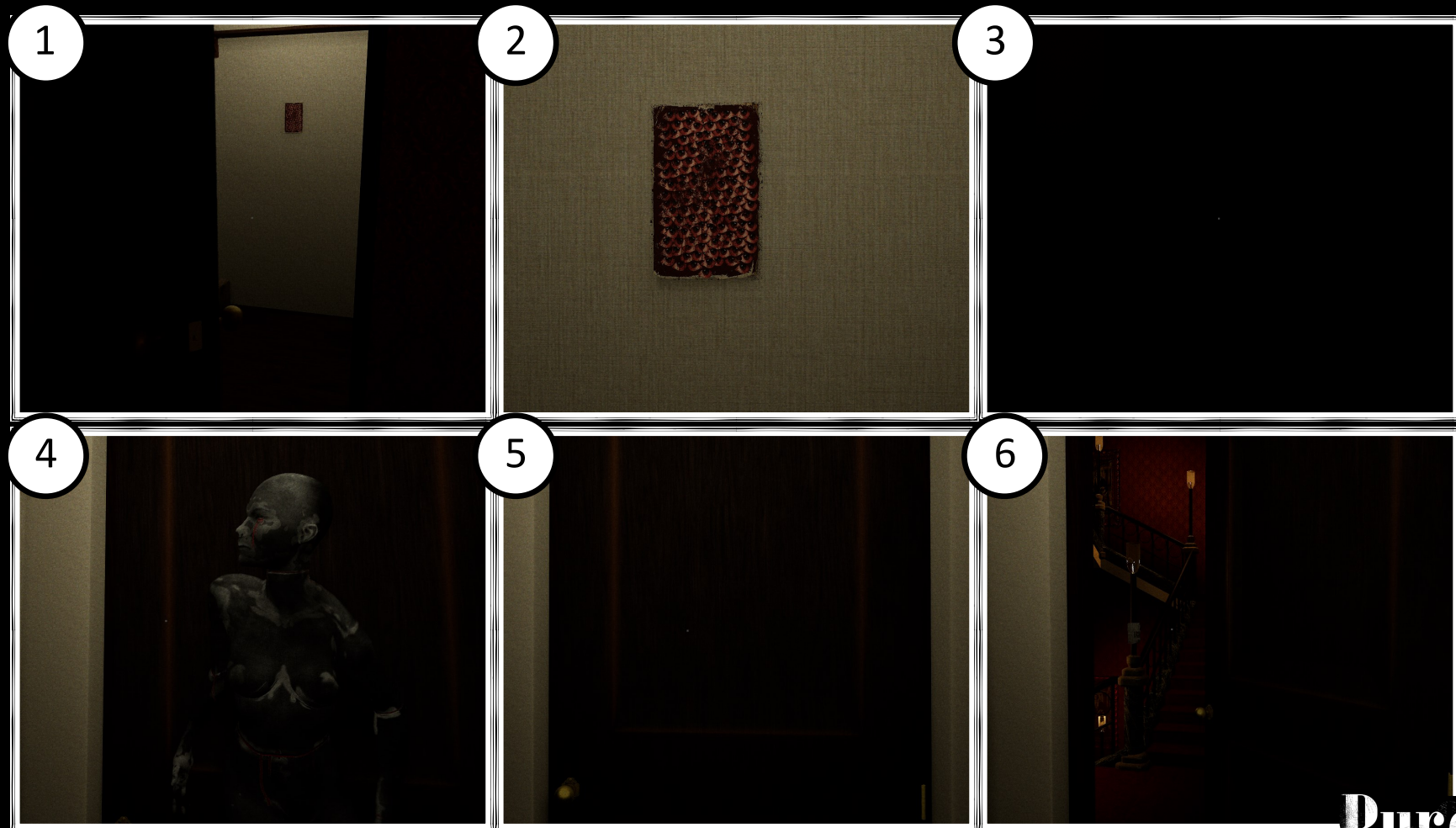
2



Purgatory

Caretaker's Room

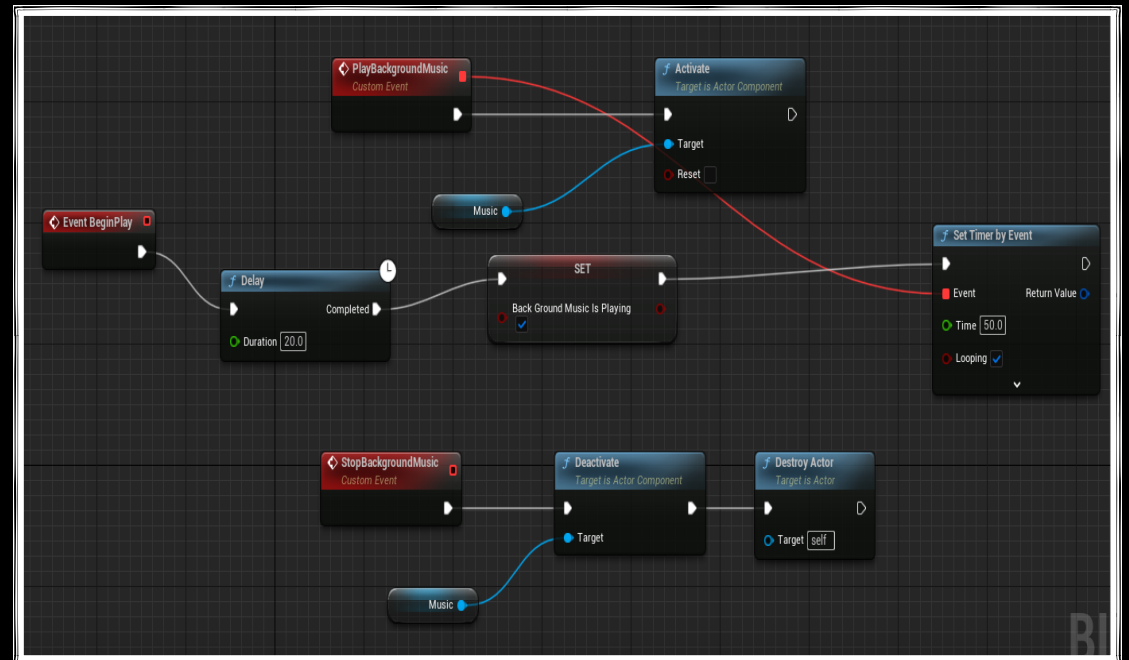
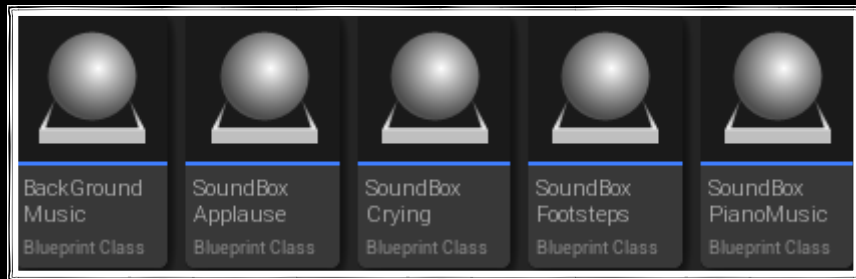
The player is drawn to the sound of a crying woman from behind the door. Upon opening they see a page hanging from the wall, this appears after a certain diary note has been read. Once the player has entered the closet, the door is automatically closed and locked. The light goes out and the player hears a heavy breathing sound, once this has ended the light turns on for a second, blood appears on the walls and the antagonist appears through the door screaming at the player before the light goes out once again. After a few seconds the light turns back on, the door is unlocked and the event is over and a newly placed note is waiting for them outside. This was made using hidden meshes and decals along with sound nodes as well as changing the intensity of the light. Nodes were added to the door to stop the player interacting with it whilst the event takes place.



Sound effects

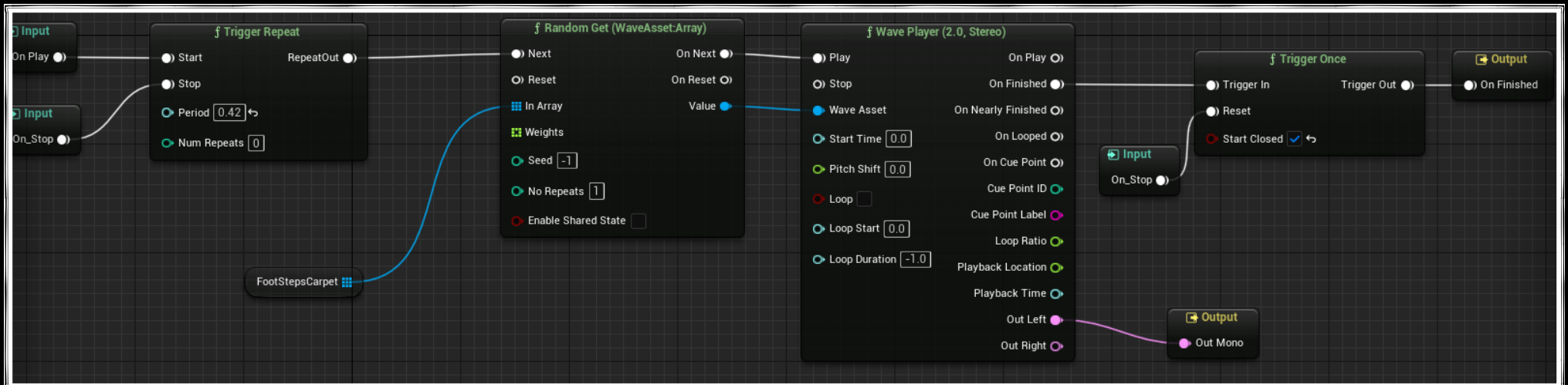
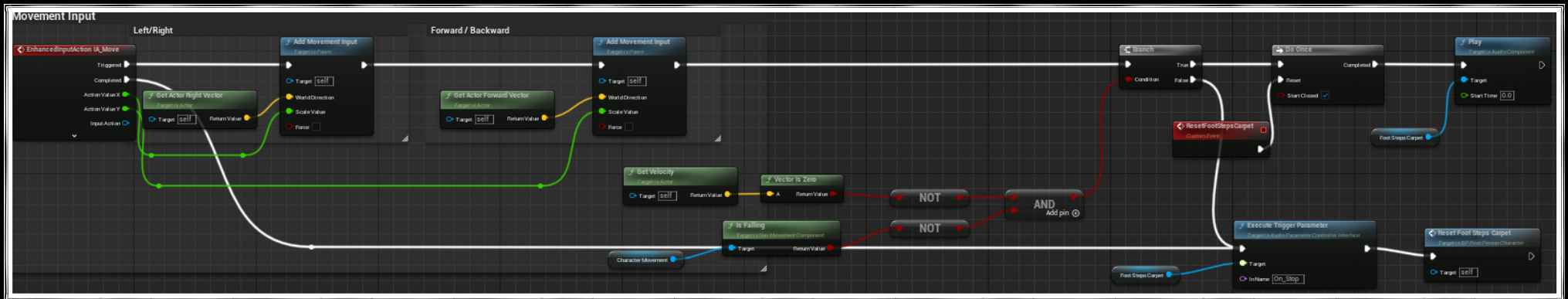
One of the best ways to create a foreboding atmosphere in the horror genre is the use of sound. As with all of my blueprints I wanted to add more sound to the overall experience. I created blueprints which would play haunting music when I chose as well as a never ending sound of an electric fan. The fan makes the Theatre sound as though it's alive, I turned the volume very low and distorted the sound to obscure it.

The pianist will play the famous moonlight sonata when triggered by the player, a not so Suttle nod to the original Resident Evil and also due to the fact that it's the perfect piece that sounds beautiful yet eerie at the same time.



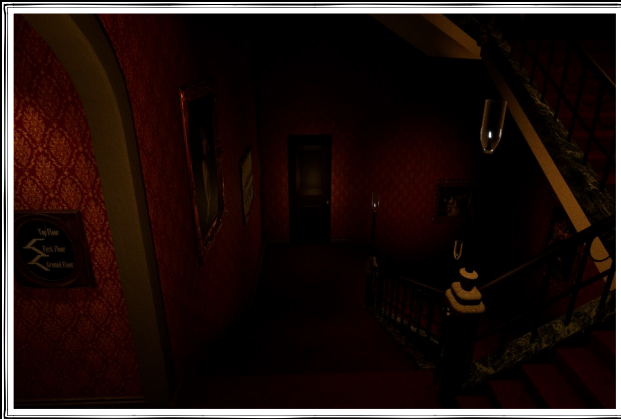
Player Footsteps

One of the most important sound effects were the footsteps, without these it breaks the immersion that you are playing as a person in a real place. I had never used Unreal Engine's meta sound system before but with the help of YouTube tutorials and some of my own tweaking I managed to get the effect working by connecting the meta sound to the first person character's movement nodes. The end goal was to have different sound effects depending on the surface that the player is walking on but this had to be cut due to the deadline and only the carpet sound (which is the majority of the level) can be heard.



Woman Crying

Upon collecting the final Diary note, the player must next visit the caretaker's room. This is hinted in the note but for extra impact, environmental storytelling and affordance the sound of a woman crying is triggered from the room.



Footsteps

Simple trigger placed in the East Side High Stairs sets off the sound of footsteps from above. Maybe the player is not alone?



Applause

This Sound is triggered the same as the footsteps and whisper except conditions need to be triggered such as the player having read a particular note. This blueprint connects to the door as well as curtains, pianist, piano music and flickering light.



Whisper

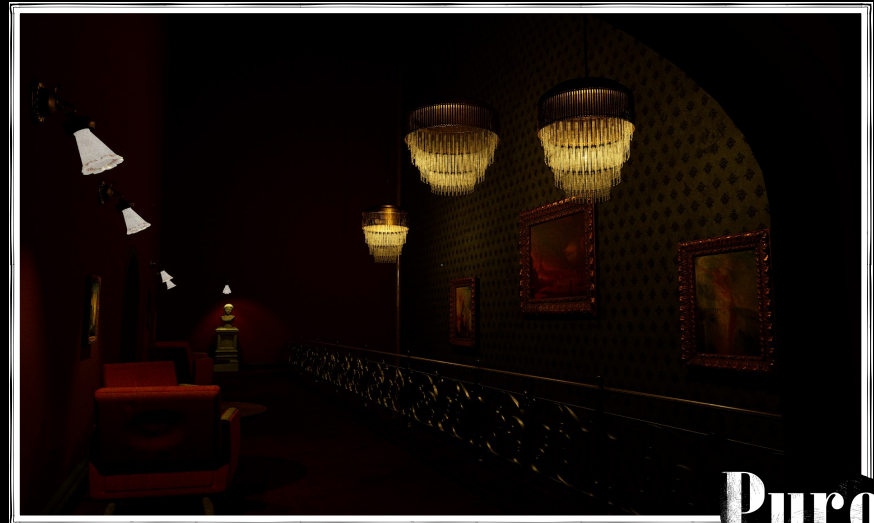
This works the same way as the footsteps but the sound has no attenuation so the player hears the whisper with clarity when stepping into the dark hall next to the West side Balcony. This was a recording of my own voice as this was the quickest and easiest way.



Purgatory

Light switch East side

The light switches are interactable by using the same logic as the doors. Once the action button is pressed whilst looking at the switch it will turn on the lights on down the hallway. To add a layer of polish I made the toggle in the light move position when the switch is interacted with, this was by telling the toggle component to rotate when interacted with. In hindsight I would have liked to use the light switches as a central part of the game-play. Maybe to solve puzzles etc but this was out of my scope and what I had originally planned.

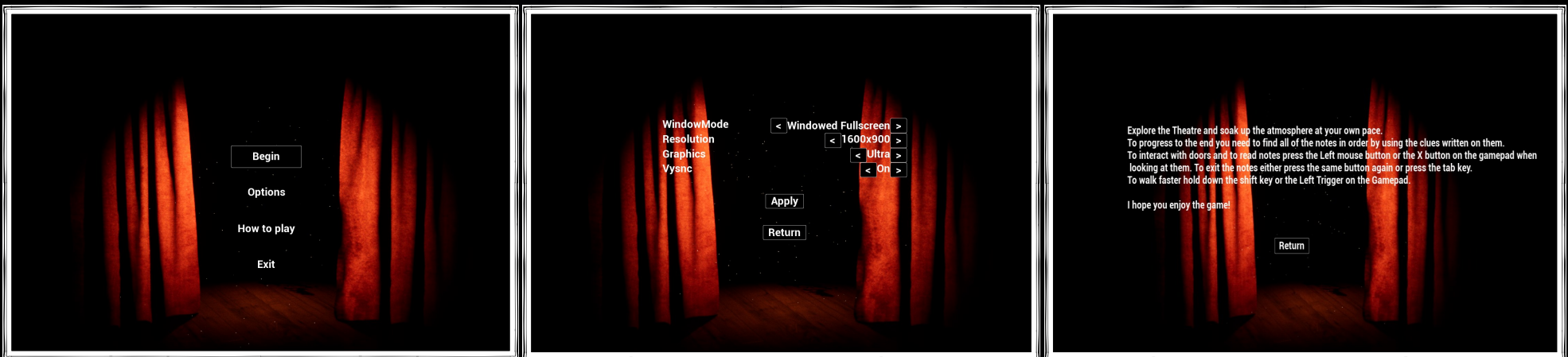


Main Menu

A last minute bit of polish was giving the game a menu screen. This was to help promote the project as more of an interactive videogame rather than just a set piece. I created a new empty map and placed a few actors for the background screen, these were the Theatre curtains, the dust particles, a spot light and wooden floor.

Due to the difficulties in performance I added an options menu so players can tweak the graphics to their own experience. Unfortunately, I tested this at the very last moment and when in medium to low graphical settings the lights performance settings will change when playing. This mean they will go out unless the player is very close to them, completely ruining the experience. The High, Epic and Ultra settings all work fine but have performance issues on my own machine, for the optimal I would suggest High settings.

There is also the option to take a look at how to play the game, I thought this was important to avoid frustration for anyone coming into the project with no knowledge of what the project is about or what keys to press to interact with the notes. If I had more time I would have made this menu available in real time via a pause game screen, so players could switch the settings or quit when they choose.



Purgatory

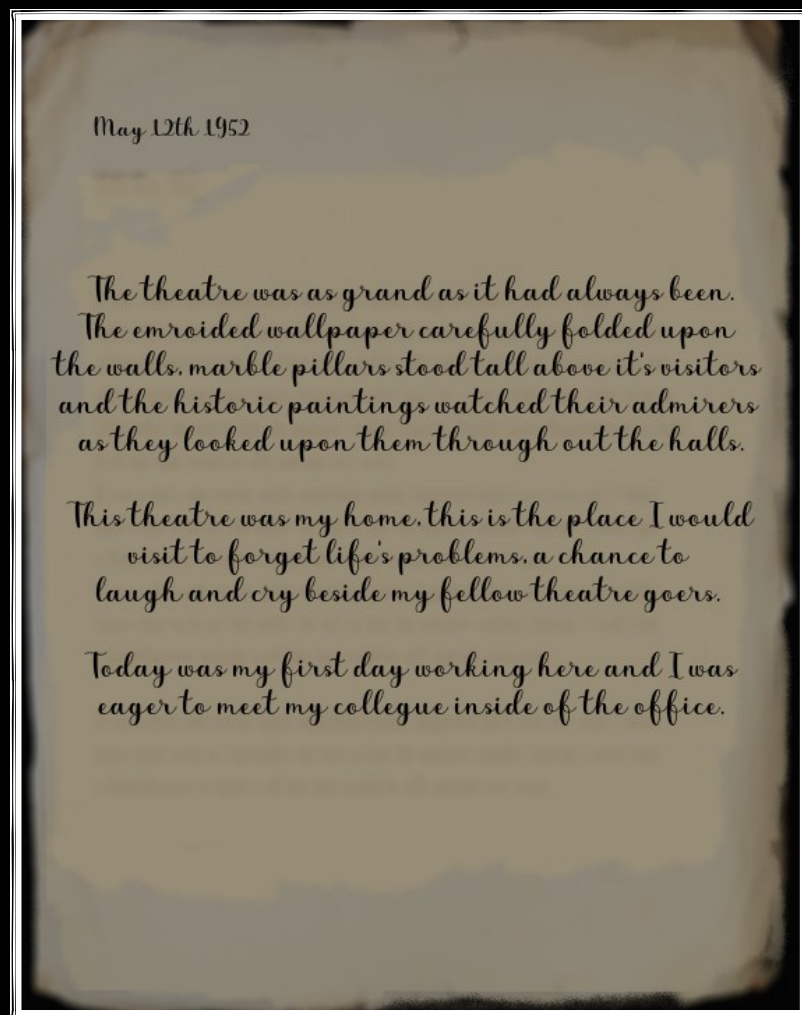
Narration

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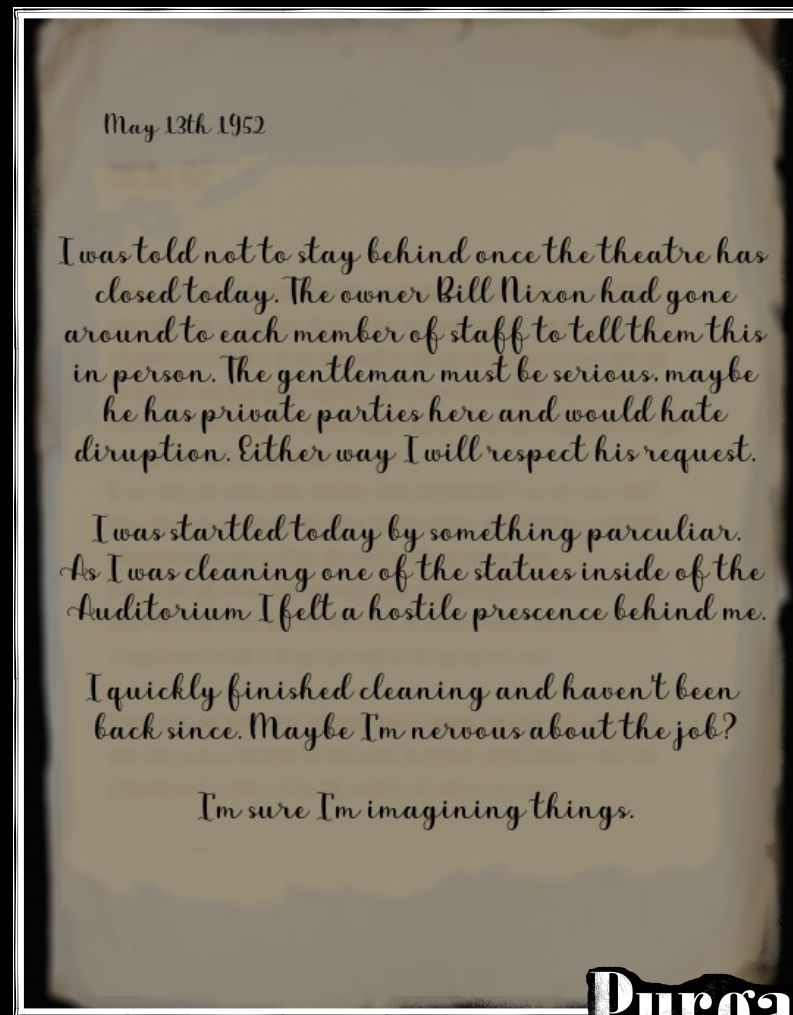
Narration

During the end of development there was something missing to tie the elements together for the player experience. The level needed some kind of progression so that I could create an ending to the game, the quickest solution was to create a series of notes for the player to interact with which would guide them to the end. I tried to make them as interesting as possible, to do this I wrote an interesting story which revolves around a former employee of the theatre and the theatre itself and what the events witnessed could mean to the player and also the notes themselves are clues also to locating the next one and progressing through the level. These notes were created using photoshop, they were made to the best quality as possible given the time I had left with the project, at this point I had only a few days.

Diary page 1



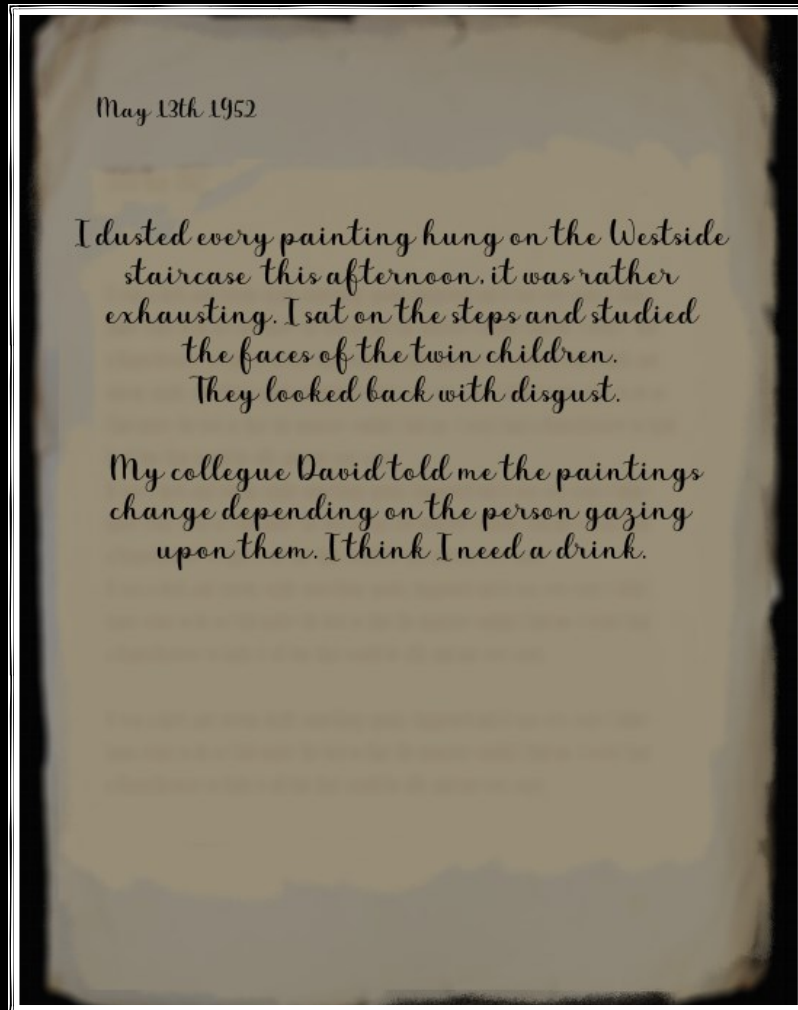
Diary page 2



Narration

The notes tell a story of a woman who was a theatre enthusiast and written from her perspective. I tried to make the English sound more from the 1950s era of someone who would regularly visit a location like the theatre (a refined English rather than broken).

Diary page 3

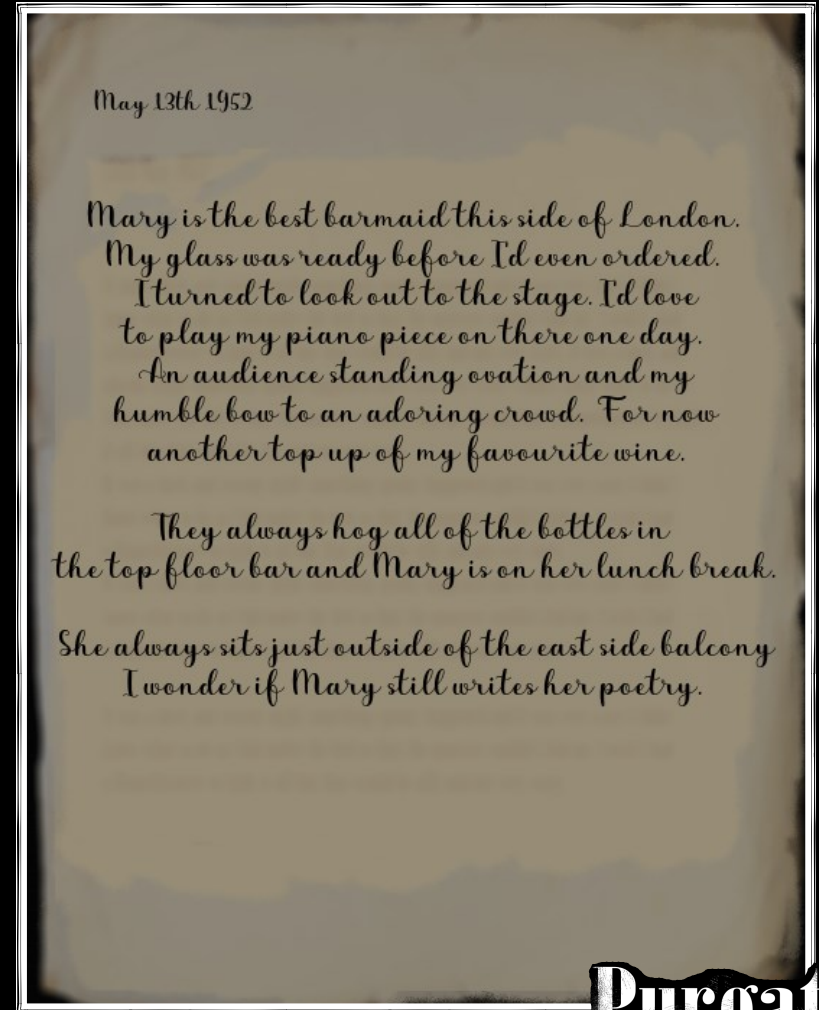


May 13th 1952

I dusted every painting hung on the Westside staircase this afternoon, it was rather exhausting. I sat on the steps and studied the faces of the twin children. They looked back with disgust.

My colleague David told me the paintings change depending on the person gazing upon them. I think I need a drink.

Diary page 4



May 13th 1952

Mary is the best barmaid this side of London. My glass was ready before I'd even ordered. I turned to look out to the stage. I'd love to play my piano piece on there one day. An audience standing ovation and my humble bow to an adoring crowd. For now another top up of my favourite wine.

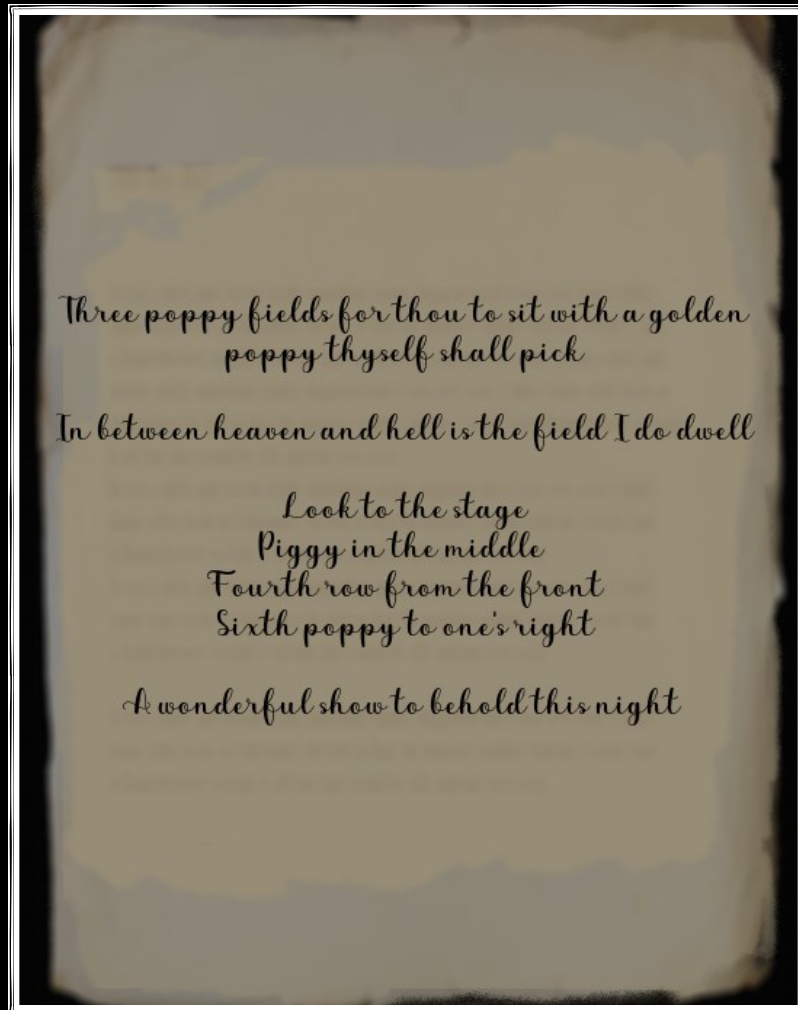
They always hog all of the bottles in the top floor bar and Mary is on her lunch break.

She always sits just outside of the east side balcony. I wonder if Mary still writes her poetry.

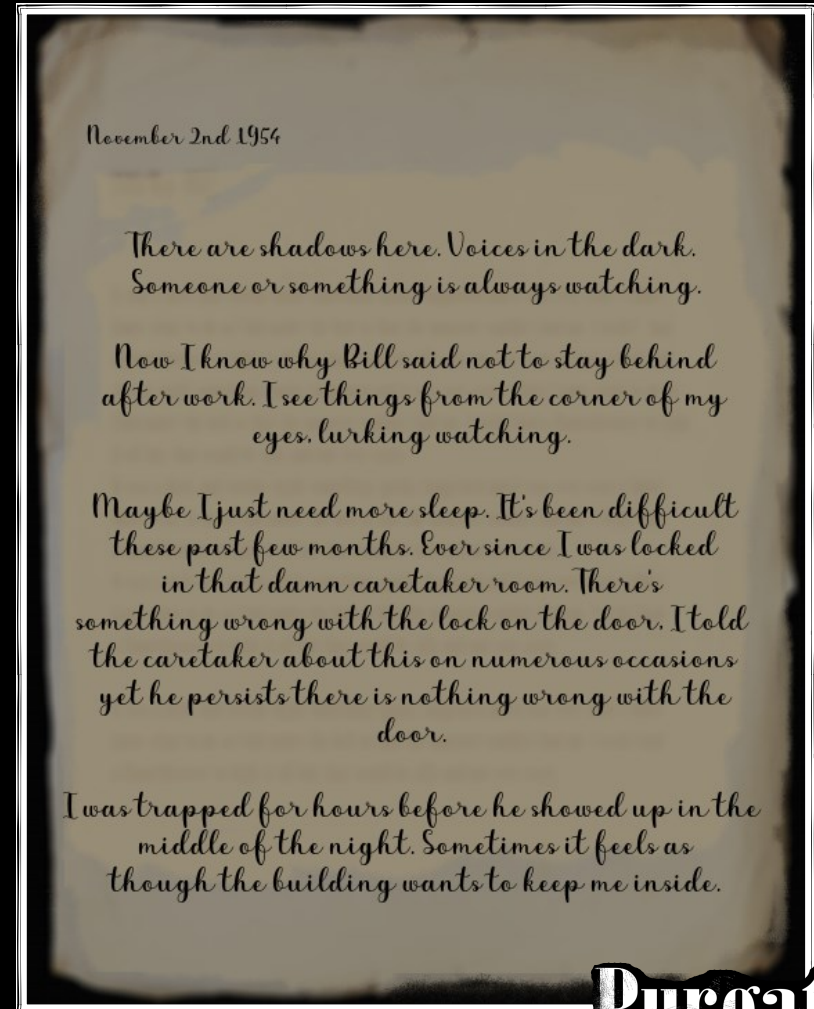
Narration

The poem was an attempt to give the player more of a puzzle to figure out the next note's location rather than a simply description like the rest of the notes. I had feedback that it was too difficult at first, so added a few extra words to help the player understand which way they should be facing when counting the theatre rows of chairs.

Poem



Diary page 5



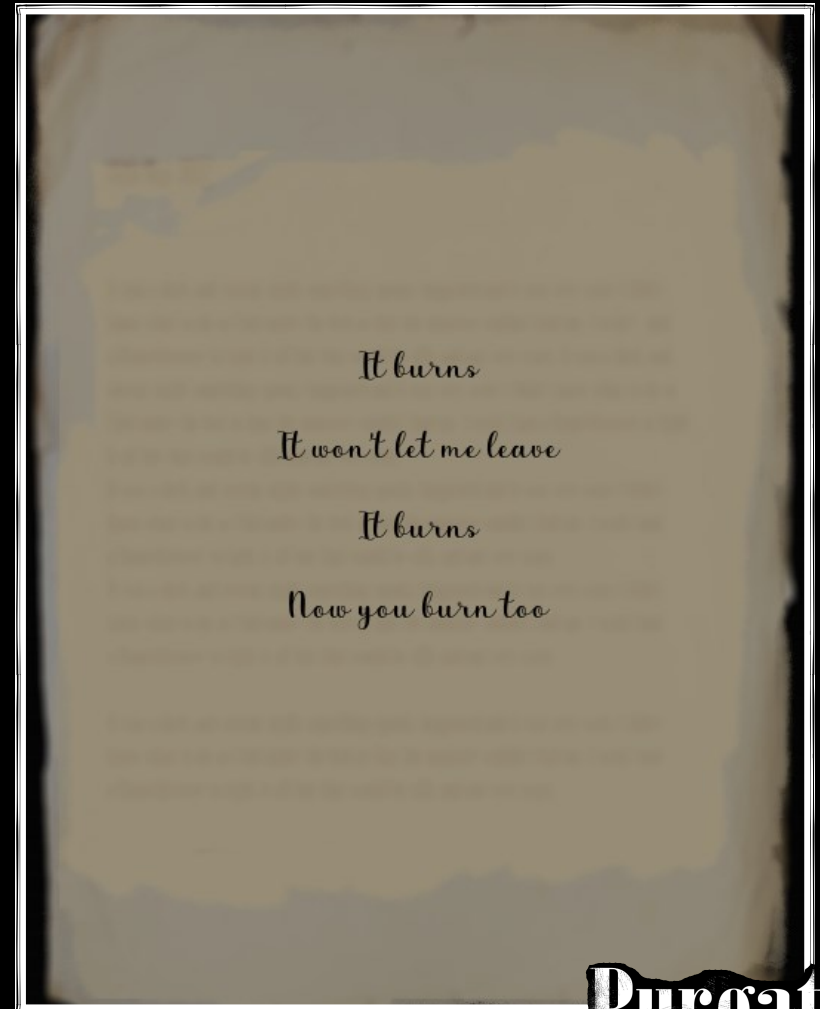
Narration

As the story unfolds the clues as to what happened become more apparent and tells a story of the Theatre being set on fire. I communicated this through a news clipping, this was found online and I tweaked it in photoshop adding the font and making the page look as though it had been burnt.

Newspaper Article



Antagonist page

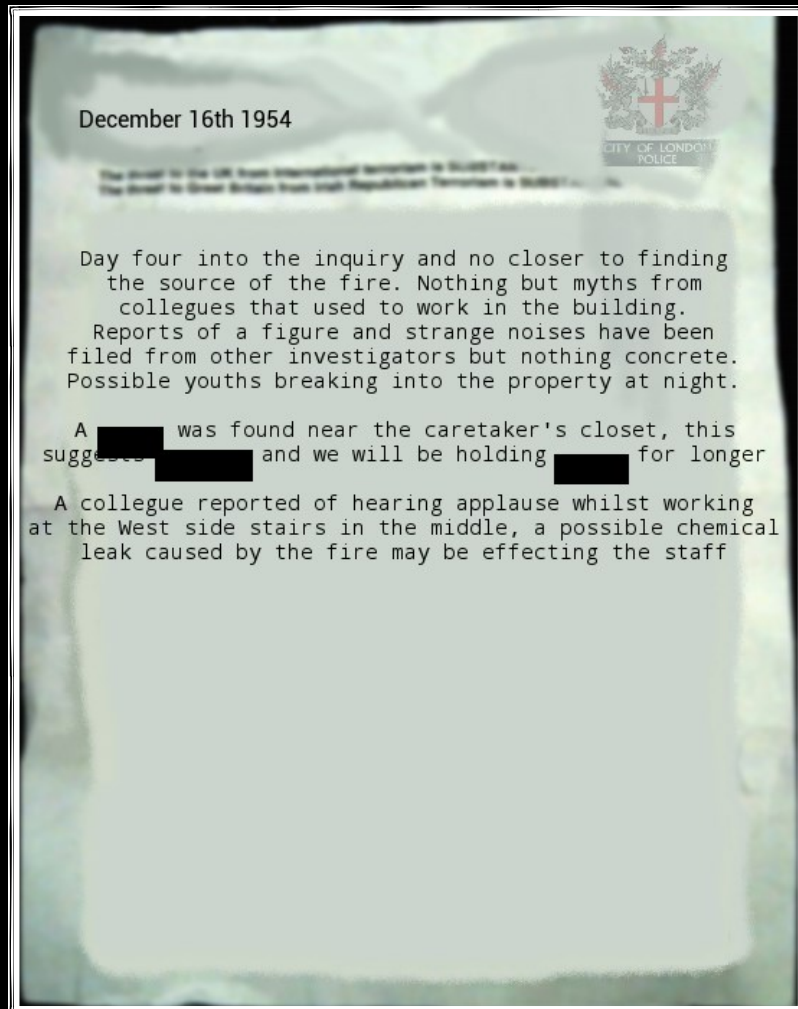


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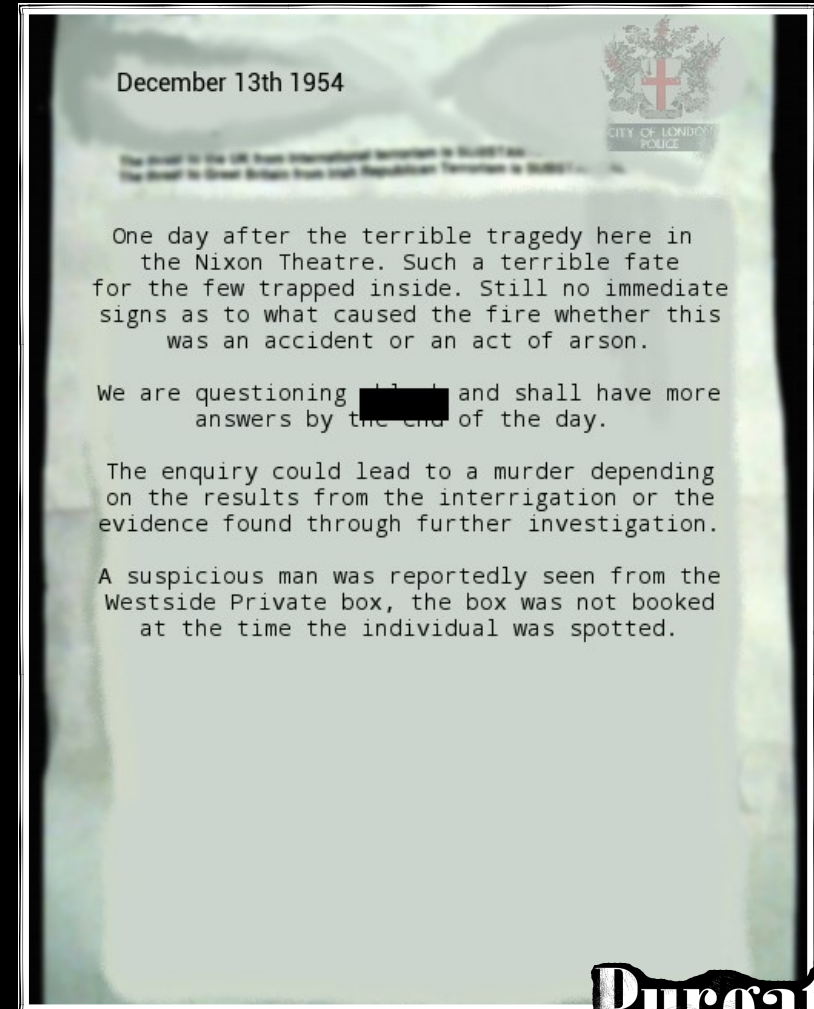
Narration

The next set of notes were also made from a real photo online, in this case real police reports but I tweaked them in photoshop and added my own text. The blacked out words are to give the player a chance to make their own conclusions as to who or what caused the fire. If I had more time I would have made all f the notes a higher quality but I think that they do the job well enough at conveying the story and setting.

Newspaper Article



Antagonist page



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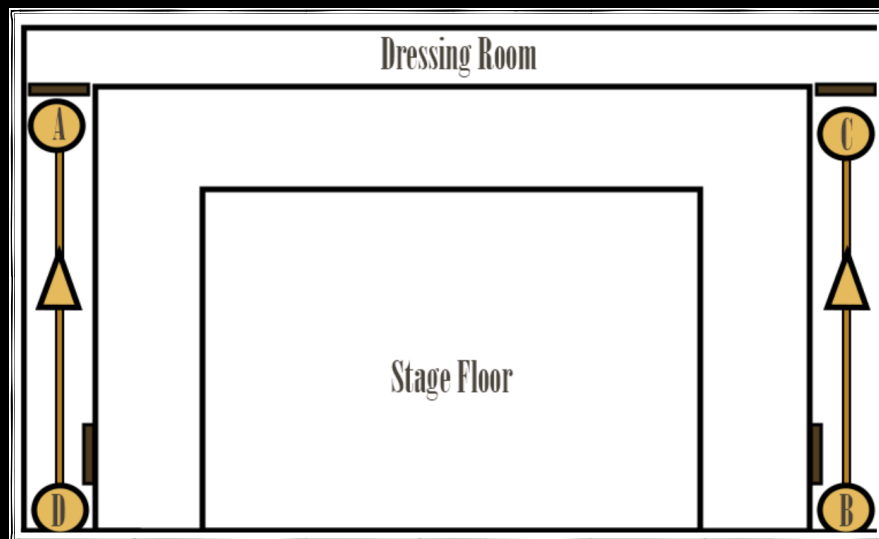
Cut Content

Purgatory

Never ending hallway

One of the big cuts I had to make was “The never ending hallway”. There are two doors at the side of the back stage that lead into a hallway and would lead to a back dressing room. I ran out of time to finish this area and tried to make an interested effect to still keep the hallways but never let the player reach the dressing room. The idea was to make a never ending hallway as part of an event for the player. They would reach the end and unknowingly be teleported to an identical hallway on the opposite side of the theatre. I had the teleport working and I used all of the tricks I could find to try and hide it the player that they were being teleported but unfortunately I could not get it to a high enough standard in time and instead locked off the area entirely. Luckily this was fairly simple to do as there were no important events or notes to collect in this area for the player so making the cut just had to be done.

Diagram showing how the loop sequence would play out



Purgatory

Final Thoughts

Purgatory

This project was a culmination of everything I have learnt at University over the past three years. It was also a reflection of my own personality, wanting to do everything myself but finding out the hard way that sometimes that's just not possible. All aspects of game development interests me, the modelling, lighting, scripting, sound, narration, design and everything in between, so it's difficult for me to pick just one of these components to focus on. Instead I opted to try to hit all of these to a high level in one project.

There were a few unforeseen issues that cropped up such as my first venture into 3D modelling with a hit on performance and not understanding just how long this would take to remedy with having no past knowledge in this field. I knew that there may be issues with the 3D modelling but I wanted to push myself and learn something new and this was achieved.

I think that I managed to hit my main goals from the initial proposal and that was to create an atmospheric and interesting environment for the player to explore.

I would have liked to have spent more time on the animations and visual effects but the scope of the project did not allow for that to happen and instead I had to make tough decisions on which components to put more focus on to. I also underestimated the sheer size of the environment, it turns out that you could make an entire game based on this one location. The environment needed more trimming to make it look less blocky and the level of interaction could have been improved upon such as being able to pick up items and use keys to unlock doors. For future projects I will take much more consideration into the scale of the environments when scoping out the work.

Overall this experience has made me grow considerably as a game developer, I was able to test my strengths and strengthen my weaknesses whilst creating something I am truly passionate about.

The show has ended, the curtains draw closed and the auditorium empties.

I made it out alive, lets see where the sequel goes....

Purgatory



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