



Level Design for AAA Games

Author: Hyun Jong Won
Advisor: Dave Culyba

Independent Study, Fall 2018

Career Objective

- Long Term Goal: Secure a **Level Designer** position at a **AAA game company**

Application Rejections

Thank you for your interest in Zynga for Level Designer

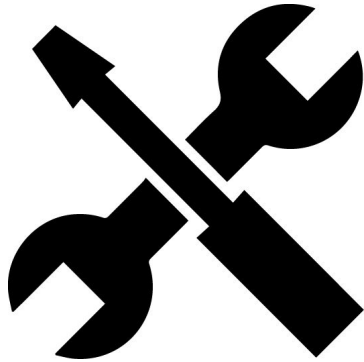
Zynga Recruiting Team <no-reply@jobvite.com>
Reply-To: "no-reply@jobvite.com" <no-reply@jobvite.com>
To: Hyun Jong Won <hwon@andrew.cmu.edu>

Thu, Mar 29, 2018 at 5:31 PM

Dear Hyun Jong,

Thank you for your interest in Zynga and the Level Designer role. We've carefully reviewed your background and experience, and though we do not have a position that is a strong match with your qualifications at this time, we will be keeping your resume active in our system. We will continue to use our database to match your profile with new opportunities and will reach out to you if we find an opening for which you may be qualified.

Upon Reflection...



Missing Design &
Technical **Skills**



Lacking **Portfolio** of
Level Design Work

Course Objective

- Long Term Goal: Secure a **Level Designer** position at a **AAA game company**
- Short Term Goal: Learn and practice level design skills by **creating portfolio-piece game levels** based on existing AAA franchises.

Job Requirements

LEVEL / ENVIRONMENT DESIGNER (SINGLE PLAYER)

Summary:

Level / Environment designers are the creative force behind our narrative-driven content, crafting engaging gameplay experiences through sequences of level setups they design and produce.

Responsibilities:

- Plan and model simplified geometry environmental layouts, place game objects, and script level progression
- Perform extensive level play-testing, reviews, and iteration
- Collaborate with artists, programmers, animators and other game designers to craft the vision of your levels and the game
- Act as producer for levels you design, as well as other parts of the game, facilitating communication across disciplines, clearing dependencies, and ensuring deadlines are met
- Design and champion gameplay systems, conventions, and scenarios
- Additional responsibilities may be assigned as needed

Requirements & Skills:

- Eye for art composition, architectural concepts, and an ability to create evocative shapes
- Good working knowledge of Maya, 3DS Max, or similar 3D package
- Understanding of simple scripting/programming concepts using a language such as C#, Lua, Javascript, or Python.
- Proficient and effective communication skills
- Welcomes criticism and collaborates well as part of a diverse team, innovating without losing sight of the gameplay vision
- Desire to be a part of the Naughty Dog team
- Preferred: 3+ years designing and scripting single-player levels for console games

As part of the Naughty Dog application process, candidates should expect to complete a design test.

[APPLY NOW](#)

https://www.naughtydog.com/greenhouse/job/790886?gh_jid=790886

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Job Requirements

1) Plan and model simplified geometry environmental layouts.

= Ability to create **evocative shapes**, eye for art composition.

= Knowledge of **3D packages and level editors**, such as Maya, 3dsMax.

2) Script basic gameplay mechanics and trigger events.

= Knowledge of simple programming concepts and **scripting languages** (C#).

3) Perform level play-testing, reviews, and iteration.

= Ability to document **bug lists**, and implement design changes to the level.

Course Syllabus

To explore, practice, and develop a **vertical slice of the level design processes**, focusing on the design patterns and conventions of AAA action adventure titles.

Course Content:

- 1) Level Brief & Research
- 2) Blockmesh
- 3) Gameplay Mechanics & Metrics
- 4) Scripted Events
- 5) Playtests & Iteration

The Last of Us
Pittsburgh Incline



Pittsburgh Incline: Level Brief

Last of Us: Level 1 Brief

Hyun Jang Won

The level takes place in Pittsburgh, based on the original story of the Last of Us. Situated between Bill's Town and the Suburbs, the setting primarily takes place in downtown Pittsburgh.

We have recently concluded from a survey that Pittsburgh is underappreciated by many players, who describe it as being "too repetitive and intense action-focused." We attribute this symptom to the sequence of constant enemy encounters and battles, and believe that inserting more memorable, slow-paced moments of exploration and environmental storytelling will help in improving the gameplay pacing as well as add more character to the environments' cultural heritage.

It is envisioned that the level will center around one of Pittsburgh's funiculars - an inclined railroad - that connects the hillside neighbourhood of Mount Washington and downtown. The overall goal of the level is to secure a medicine from a pharmacy located on Mount Washington, hence the incline should act as the center arena both as the mode of transportation as well as obstacles that present challenges to the player.

Key Emotional Goals

- Feeling of **Suspense** in being chased by the enemy
- Feeling of **Relief** in escaping from the enemy
- Feeling of **Curiosity** in the environment's history
- Feeling of **Wonder** in lookouts / scenery

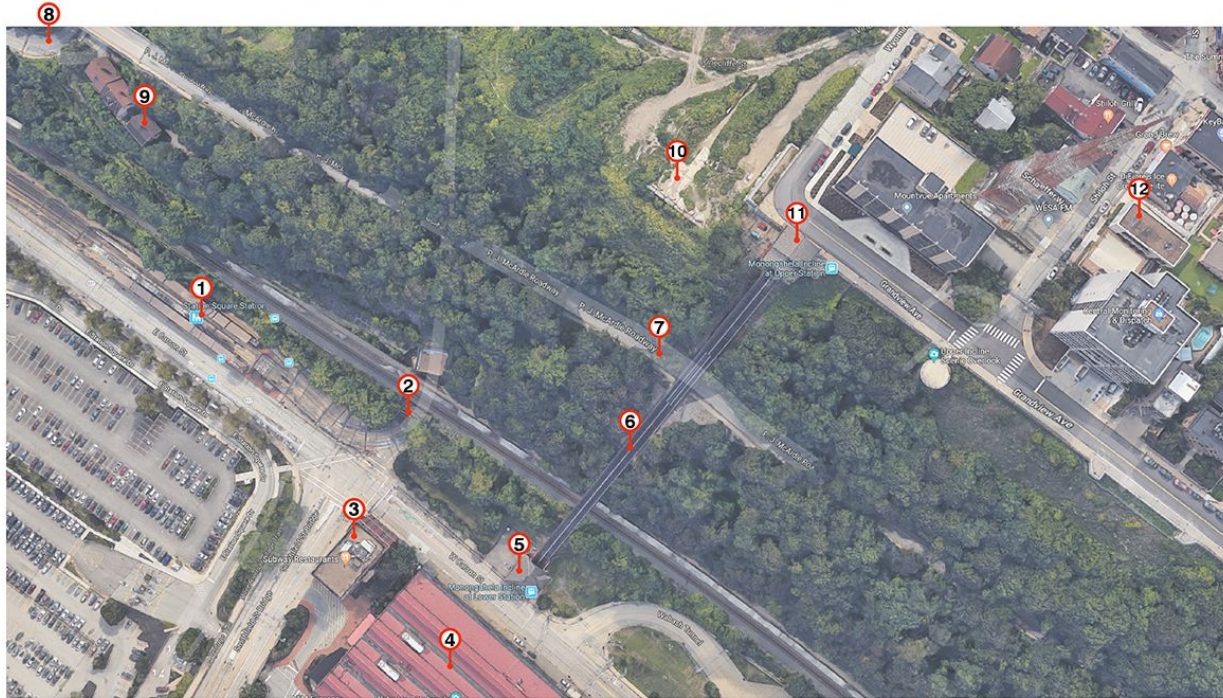
Key Gameplay Goals

- **Exploration** of environments iconic to Pittsburgh
- Environmental **puzzle solving** involving cooperation
- **Light Enemy Encounters** with options for stealth playstyle.

Key Environmental Narrative Goals

- Convey **atrocities** and **greediness** of the Hunters (storage facility?)
- Convey **historical events** leading up to the present
- Capture cultural + **industrial heritage** of Pittsburgh
- Convey the **beauty** of Pittsburgh's scenery along the River(?)

Pittsburgh Incline: Google Maps



- 1. Station Square Station
- 2. South Busway Tunnel
- 3. The Gatehouse Building
- 4. Station Square Building

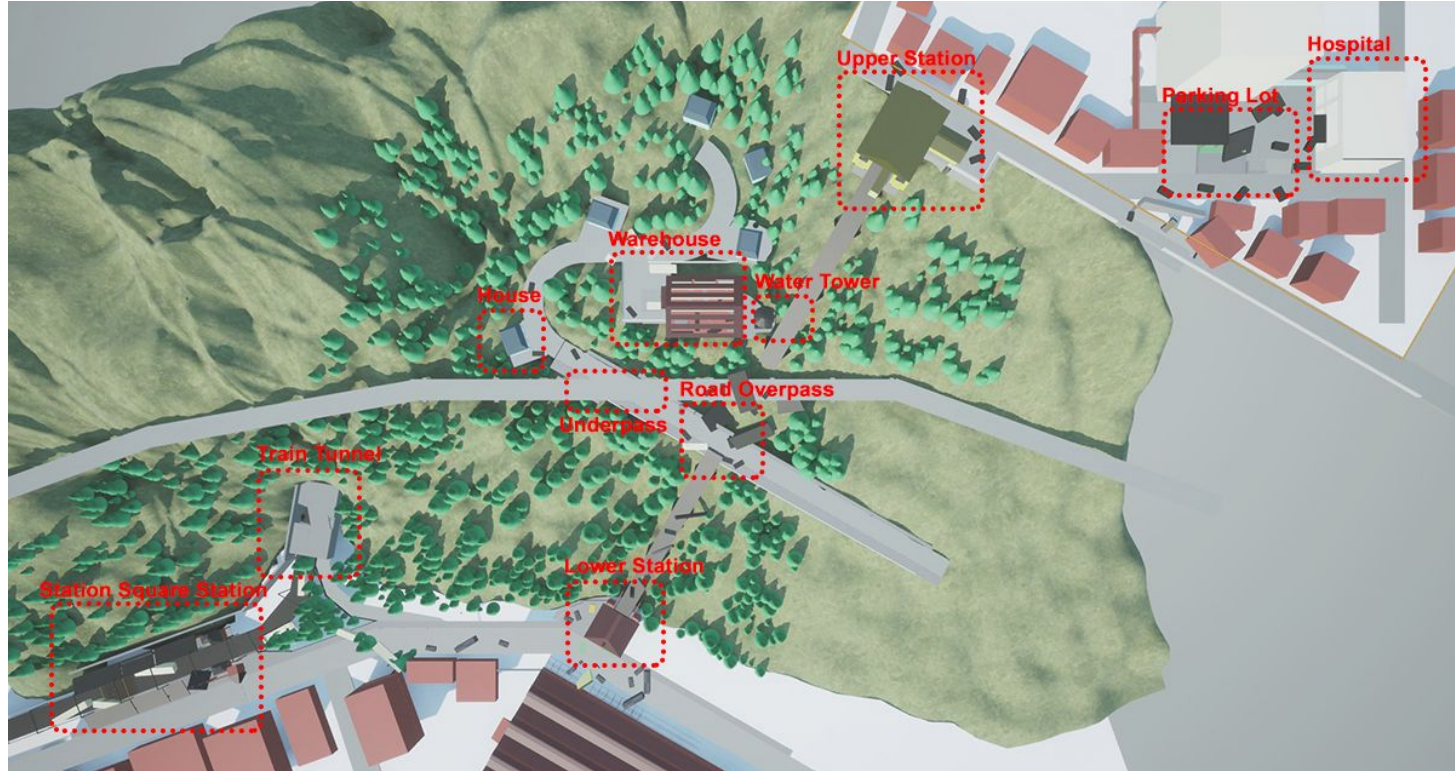
- 5. Monongahela Incline - Lower Station
- 6. Monongahela Incline - Tracks
- 7. P.J. McArdle Roadway
- 8. E Sycamore Street Underpass

- 9. Hillside Houses
- 10. Abandoned Concrete Pads
- 11. Monongahela Incline - Upper Station
- 12. Retail Building

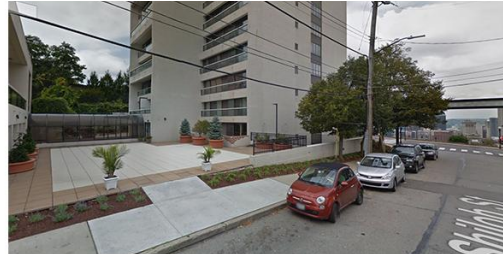
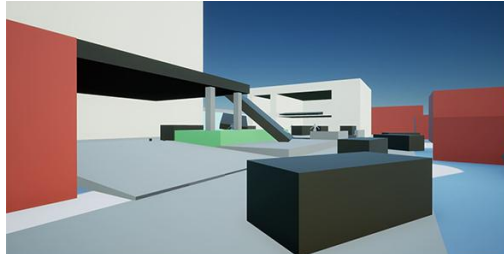
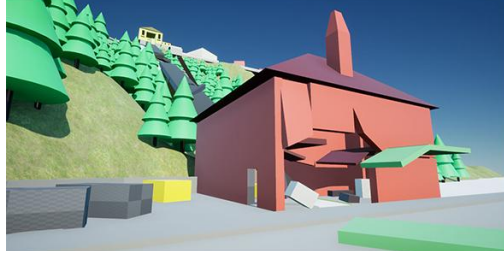
Pittsburgh Incline: Level Sketch



Pittsburgh Incline: Blockmesh



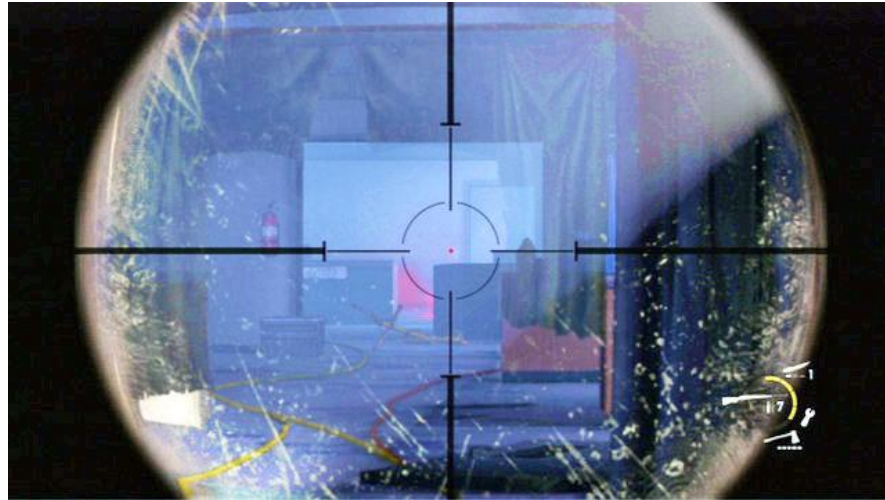
Pittsburgh Incline: Fiction vs. Real



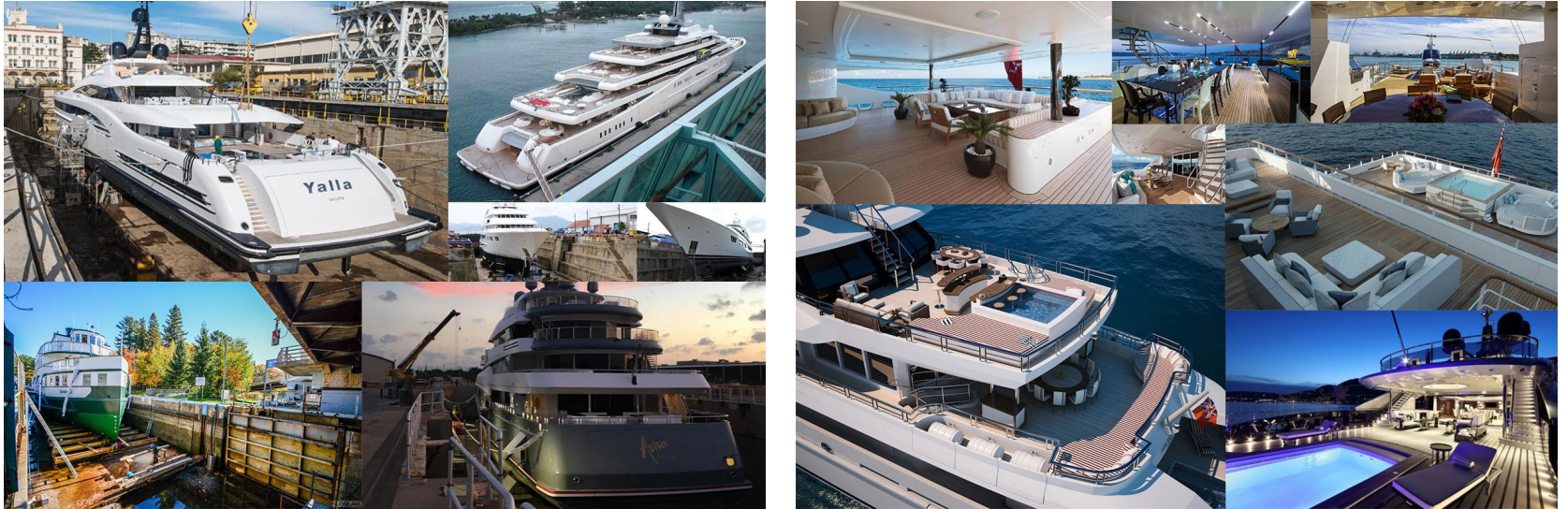
Pittsburgh Incline: Video



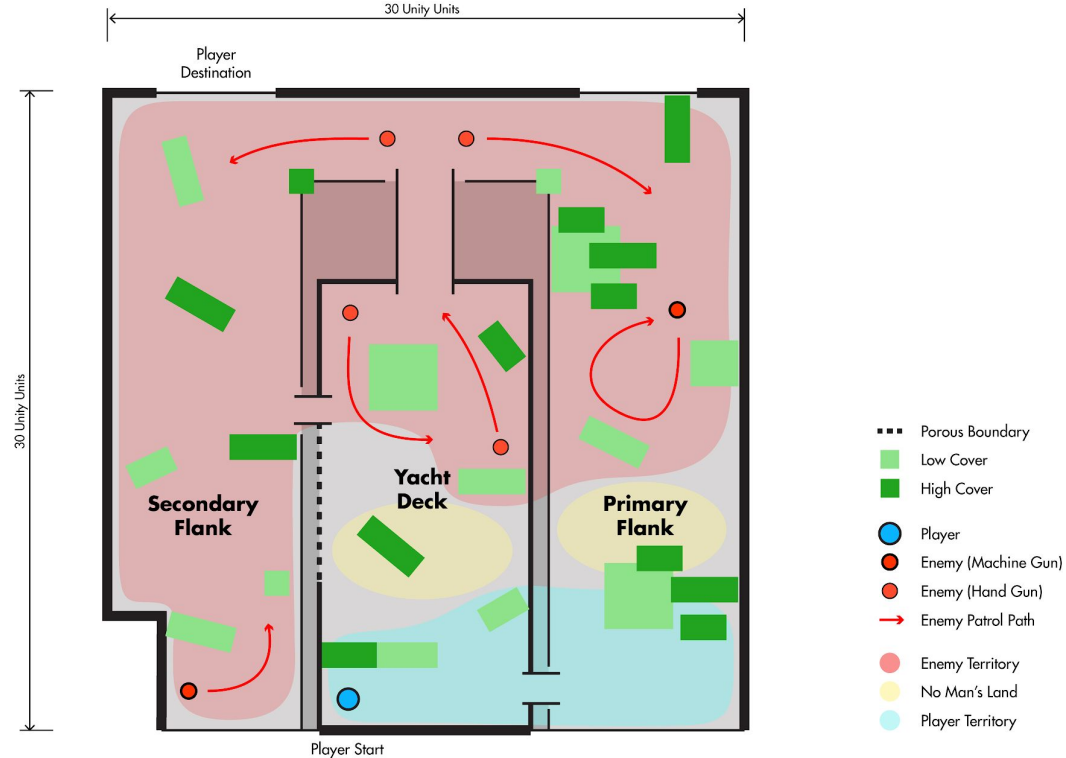
The Last of Us **Combat Spaces**



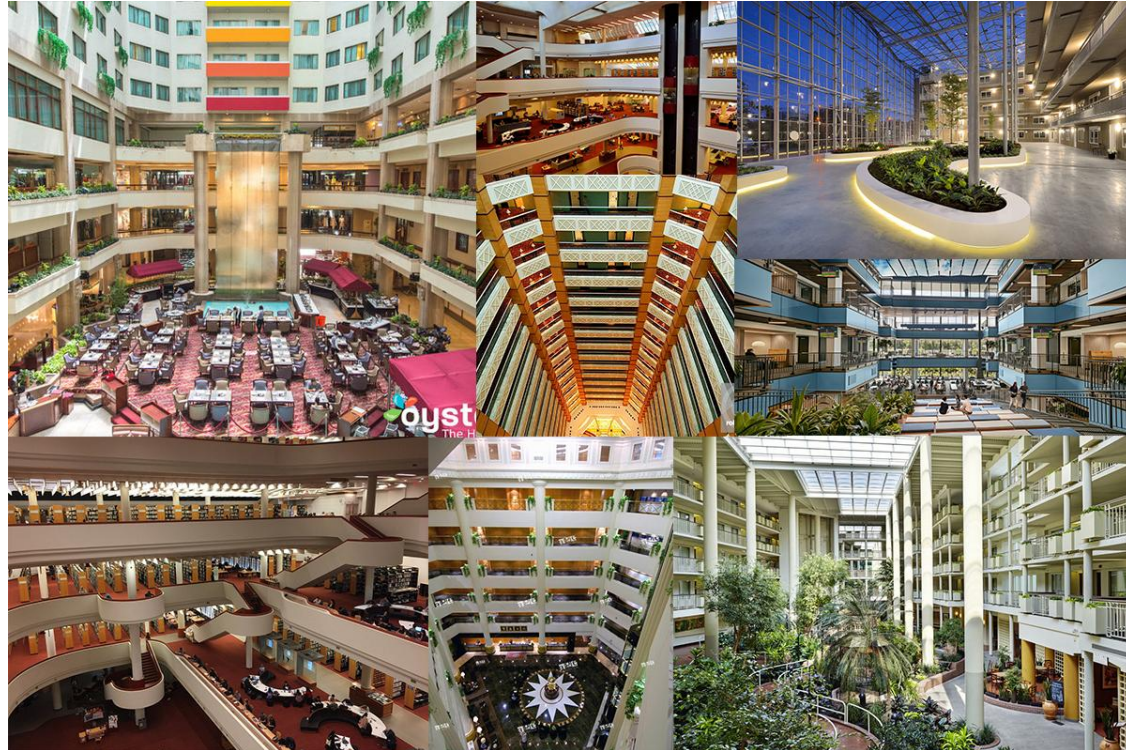
Yacht Dockyards: Reference Images



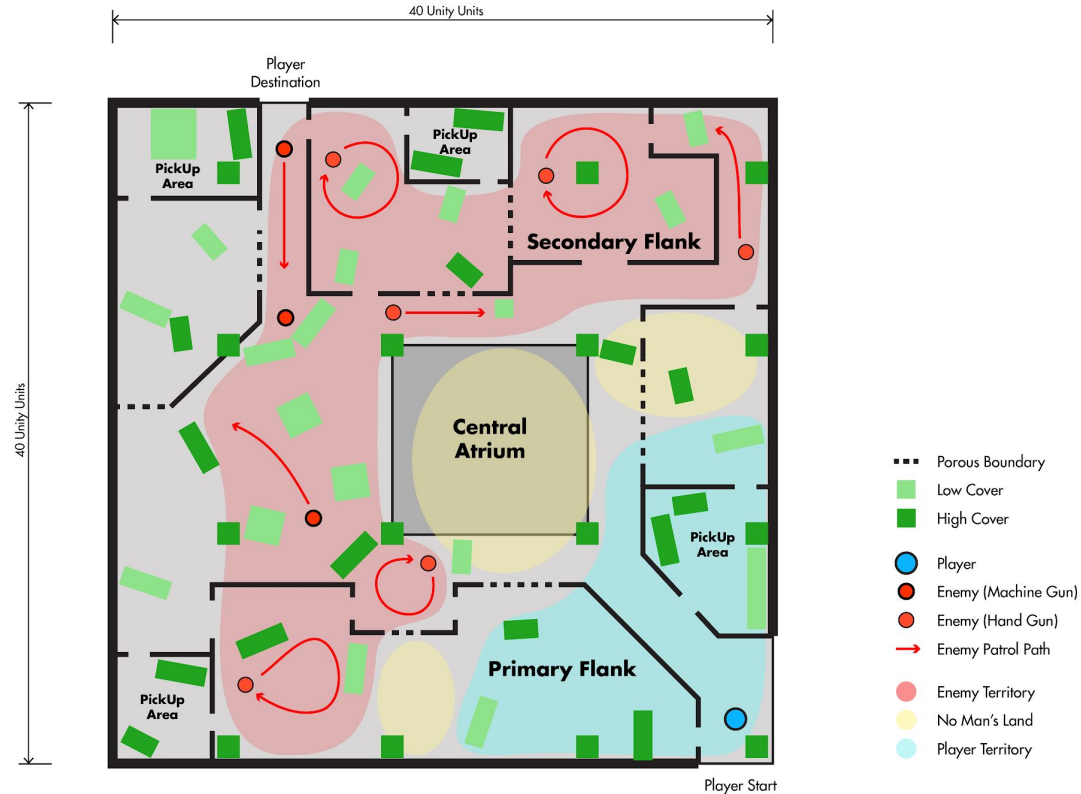
Yacht Dockyards: Level Sketch



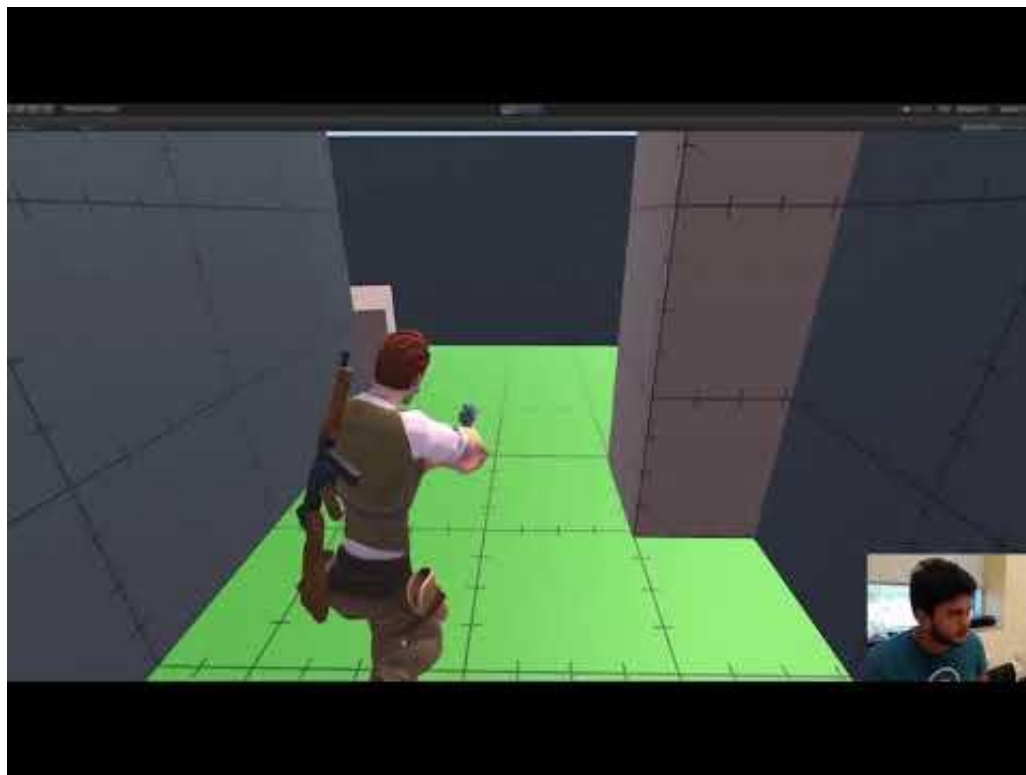
Hotel Atrium: Reference Images



Hotel Atrium: Level Sketch



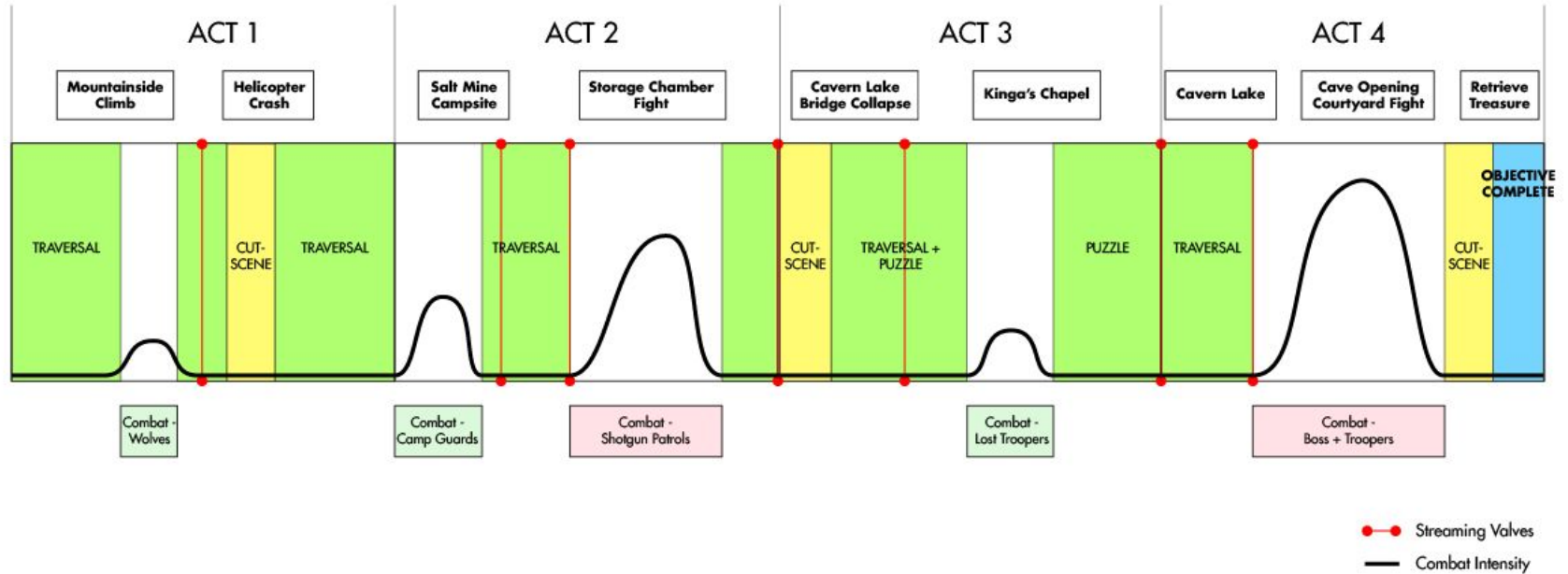
Hotel Atrium: Video



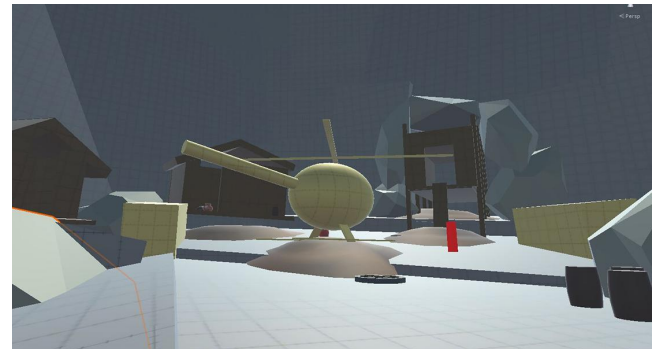
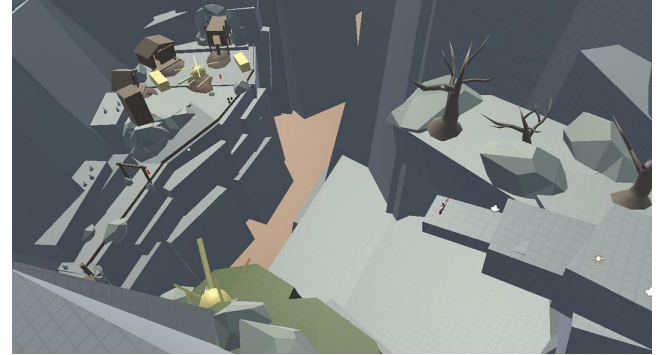
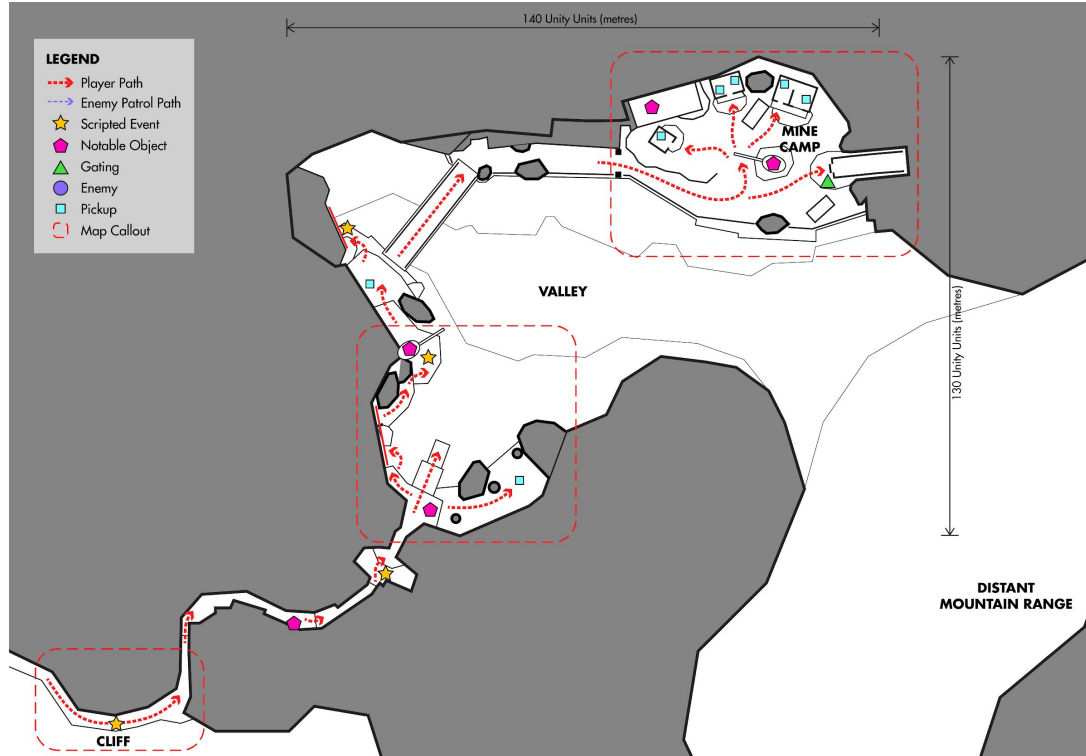
Rise of the Tomb Raider
Salt Mine



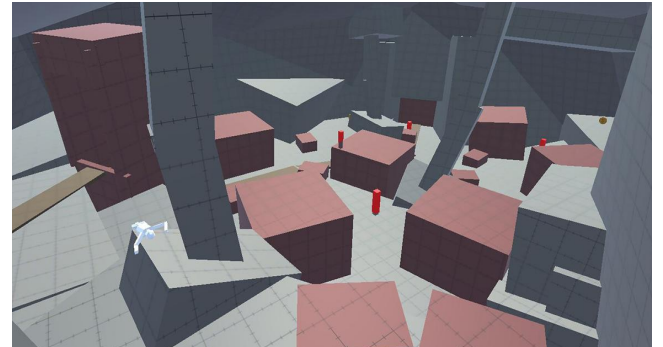
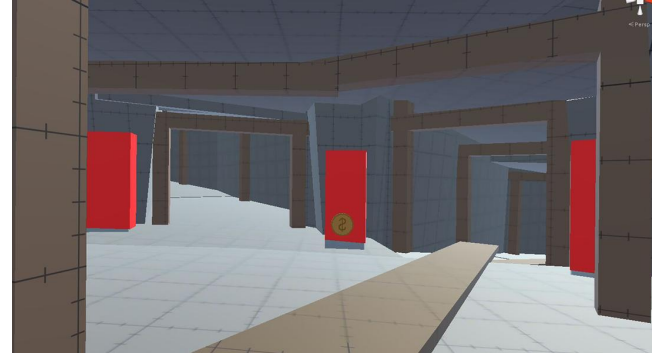
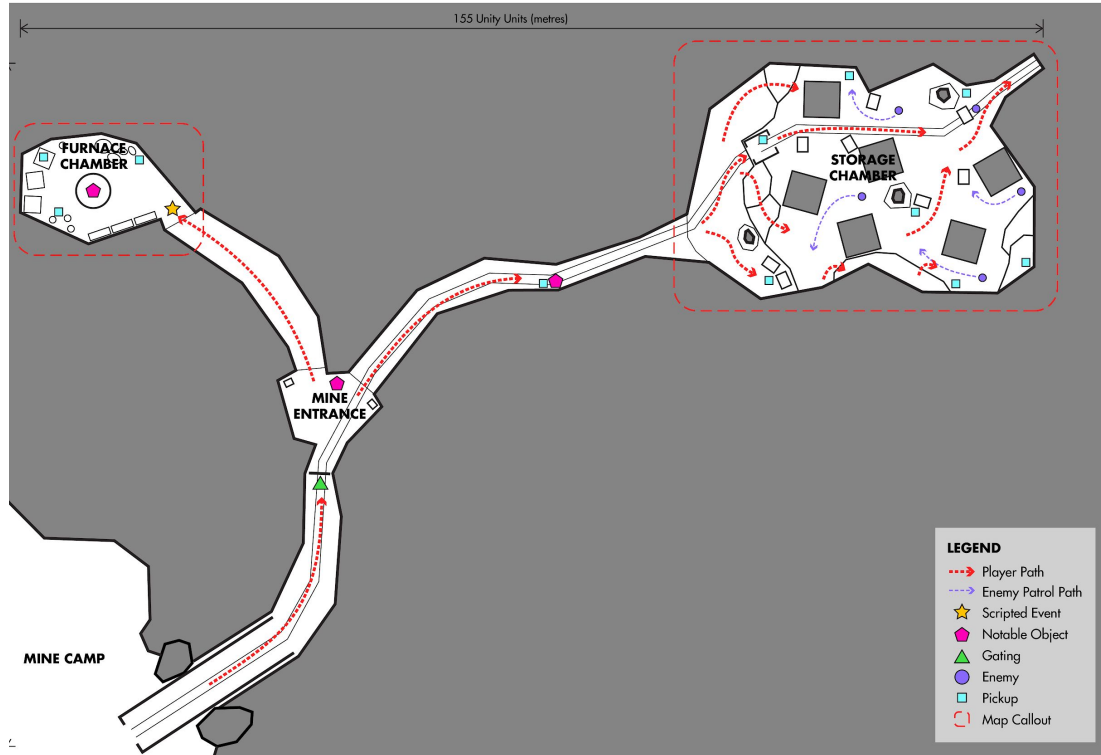
Salt Mine: Level Timeline



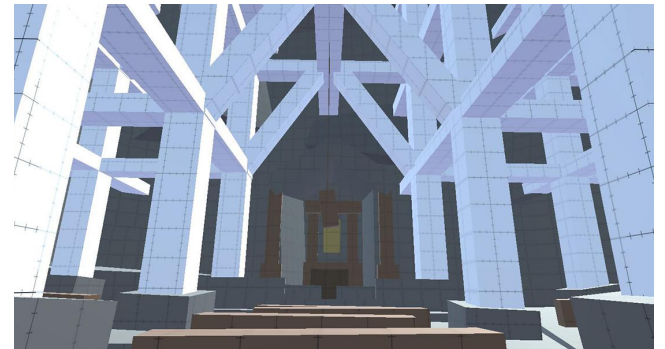
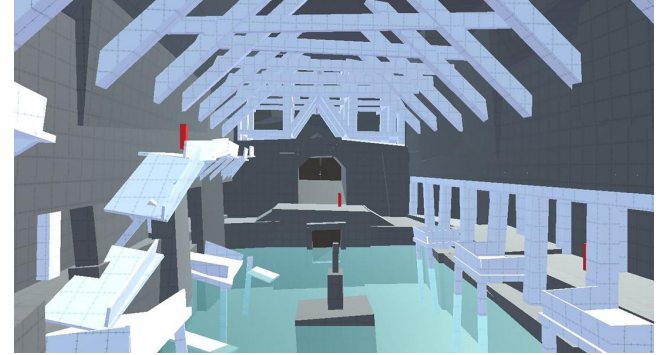
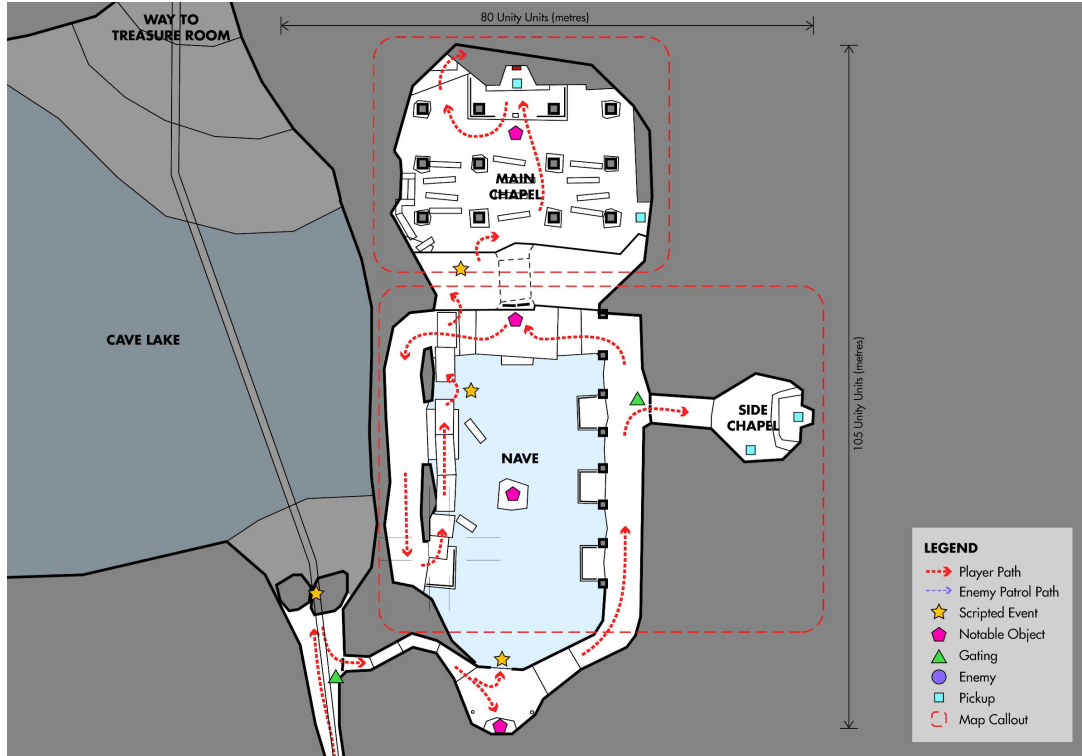
Salt Mine: Act 1 (Mine Camp)



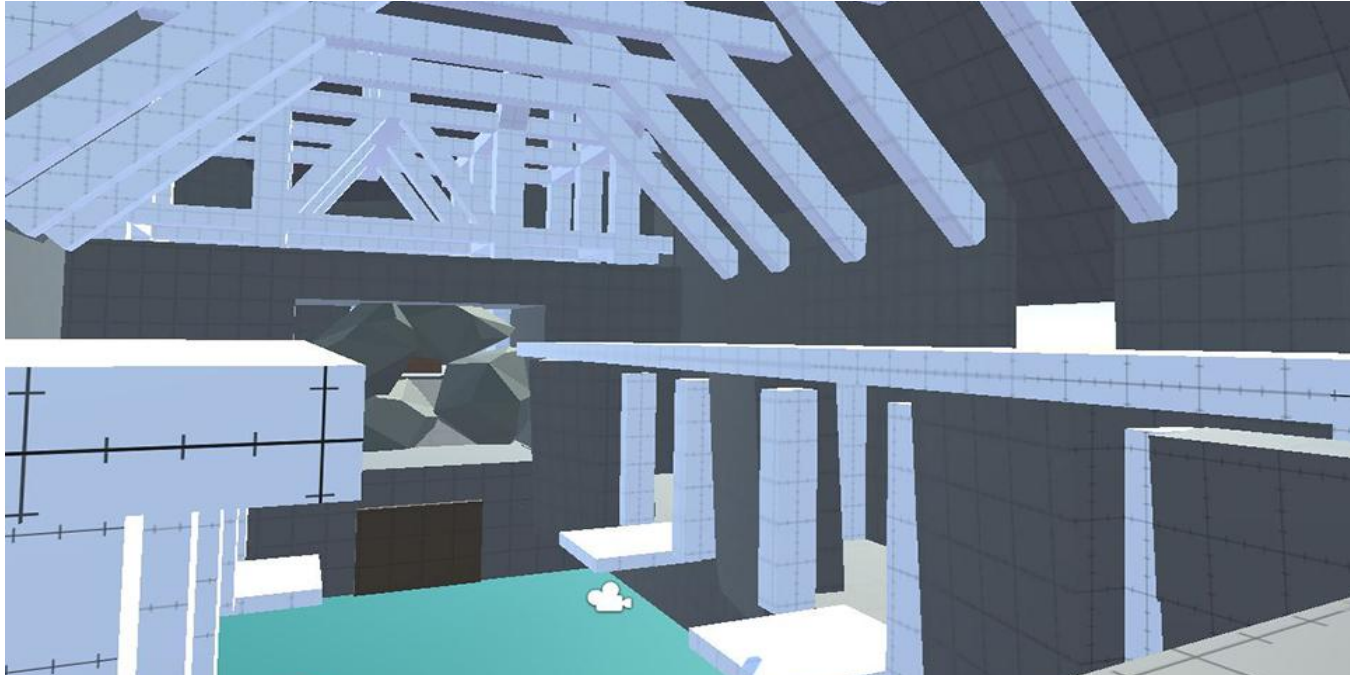
Salt Mine: Act 2 (Storage Chamber)



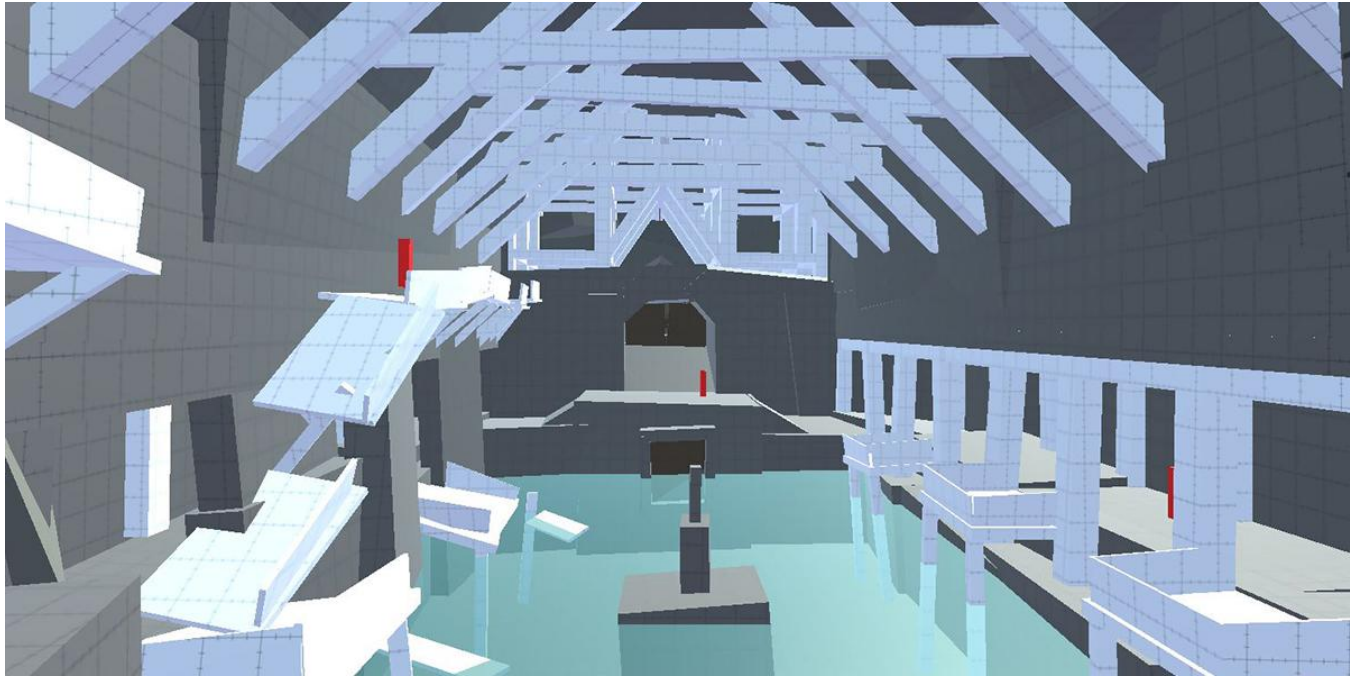
Salt Mine: Act 3 (Kinga's Chapel)



Nave: Blockmesh Pass



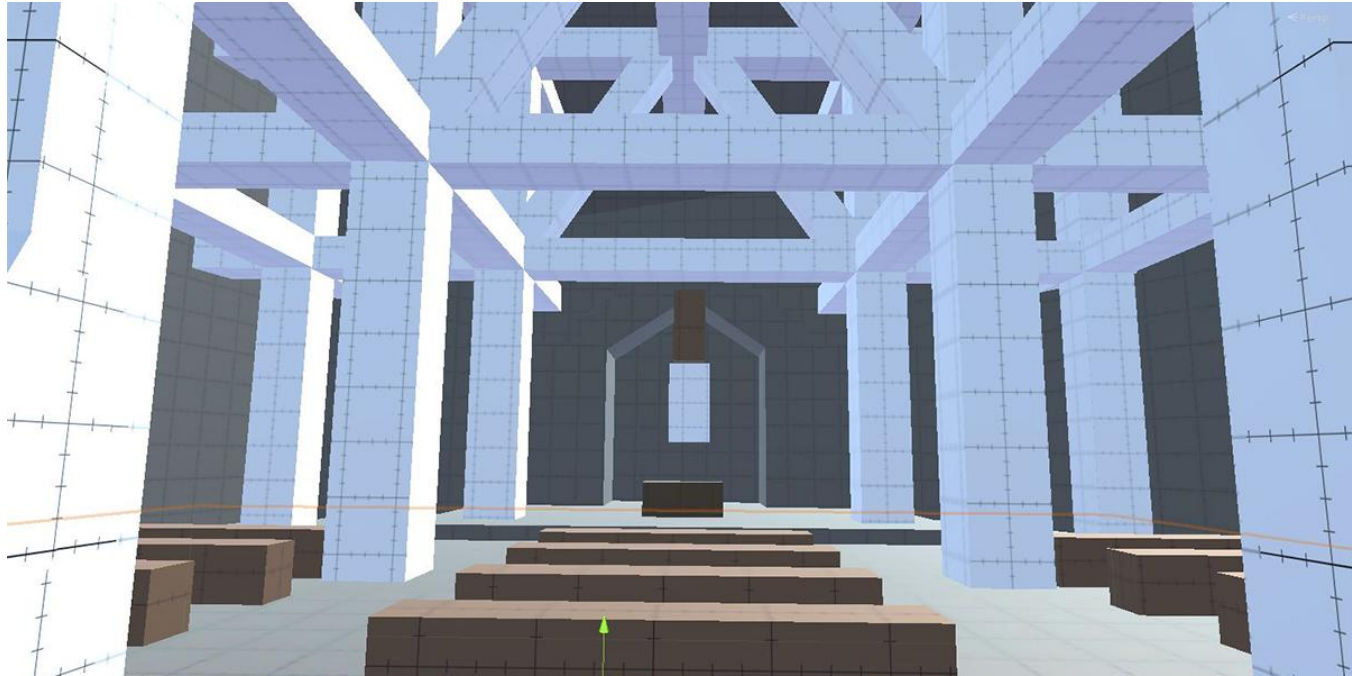
Nave: Refining Pass



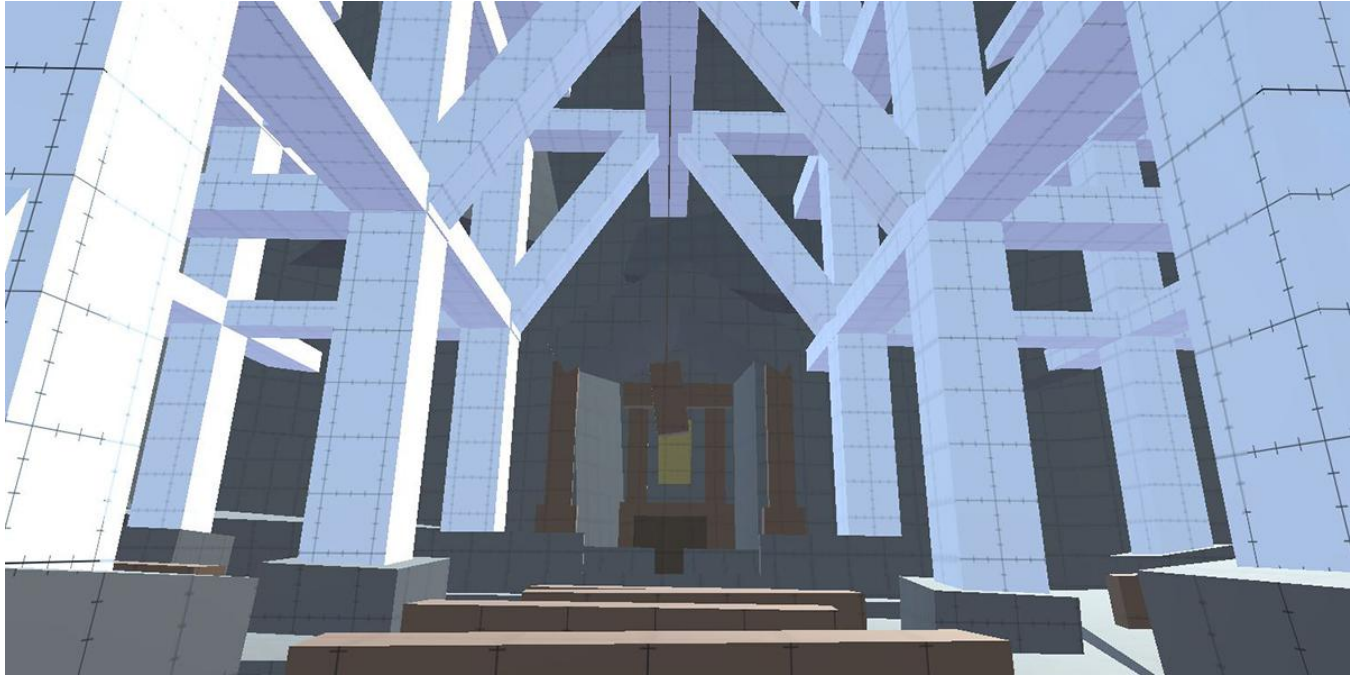
Nave: Gameplay & Lighting Pass



Main Chapel: Blockmesh Pass



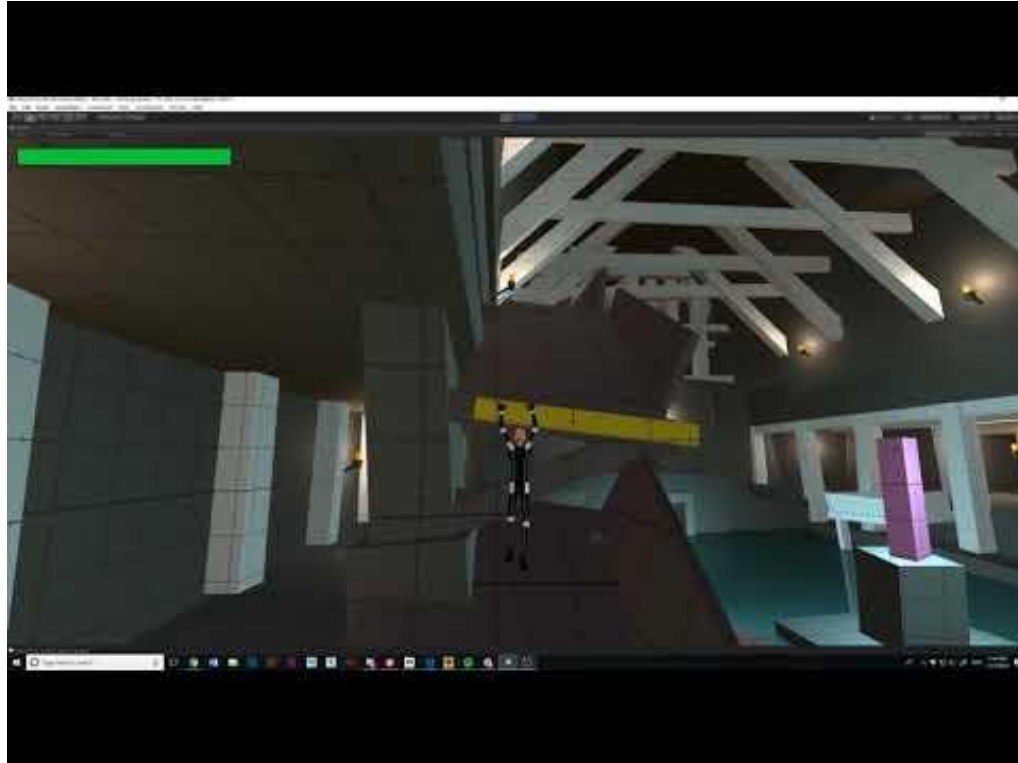
Main Chapel: Refining Pass



Main Chapel: Gameplay & Lighting Pass



Act 3: Video



7 Key Learnings

- 1) Borrow **existing systems** from the Asset store !
- 2) Borrow **design patterns and conventions** from existing franchises !
- 3) Invest in making **planning materials** (Level brief, sketches, timeline, etc.) !
- 4) Be cautious about **scope!** A simple level can become an entire city map !
- 5) Be **articulate and freeform** with level geometry !
- 6) Level design has **multiple levels of passes** itself !
- 7) Use **level editors** with built-in scripting features and assets !

Update: Application Status

Treyarch Design Internship next steps

To: "hwon@andrew.cmu.edu" <hwon@andrew.cmu.edu>

Hi Howard,

Thank you so much for applying to our design internship for summer 2019. The team has reviewed your resume and would like to move forward with next steps! I have attached instructions you can learn a bit more about you. **We would like this back within one week.** Please use a MPEG-4, WMV, or H.264 format for your video.

There are four different opportunities for our design internships available this year: **Game designer (scripter), level designer (world builder), systems designer, and UX/interaction design**. We would like to pursue in the subject line of the email you return to us with your video. Once the team reviews your video, if they would like to move forward, you will receive a test that focuses on your skills in the process.

Please respond to this email so I know that you have received it, and let me know if you have any questions.

Best,



Treyarch, Activision Blizzard
Senior Recruiter
Phone: [REDACTED]
Email: [REDACTED]
3420 Ocean Park Blvd #1000
Santa Monica, CA 90405, USA



Useful Level Design Resources

- ONLINE COURSES

- Level Design for Games by Emilia Schatz (<https://www.cgmasteracademy.com/courses/46-level-design-for-games>)

- BOOKS

- An Architectural Approach to Level Design by Christopher Totten (https://www.amazon.com/Architectural-Approach-Level-Design/dp/1466585412/ref=sr_1_1?ie=UTF8&qid=1543968440&sr=8-1&keywords=architectural+approach+to+level+design+christopher+totten)
- Preproduction Blueprint: How to Plan Game Environments and Level Designs by Alex Galuzin (https://www.amazon.com/Preproduction-Blueprint-Environments-Level-Designs-ebook/dp/B01N8PKSMM/ref=sr_1_1?ie=UTF8&qid=1543968447&sr=8-1&keywords=preproduction+blueprint)

- BLOGS, ARTICLES, TALKS

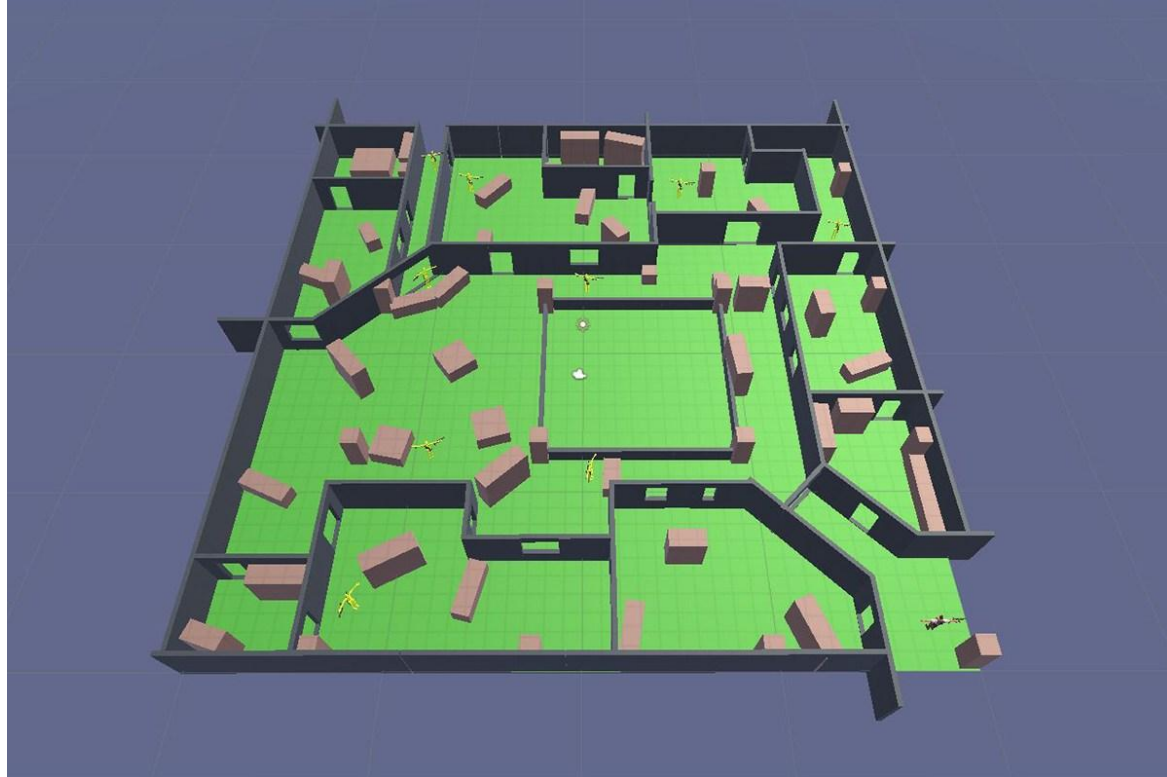
- World of Level Design Articles (<https://www.worldofleveldesign.com/categories/cat-level-design.php>)
- GDC Vault Talks (<https://www.gdcvault.com/>)
- Gamasutra Blogs (<http://www.gamasutra.com/blogs/>)
- Mapcore Articles (<https://www.mapcore.org/articles/>)
- Steam Workshop Community Maps (<https://steamcommunity.com/workshop/>)

Any Questions?

Howard's Vault of Game and Level Design:

https://docs.google.com/spreadsheets/d/16-vCB0vDKIBEjc2z6S3t_v69c_cF05BSulCYcv0bhY/edit?usp=sharing

Hotel Atrium: Blockmesh



Last of Us: Pittsburgh Incline



Last of Us: Pittsburgh Incline

4 years ago #3

Pittsburg worst

Winter best
PSN ID: Peephole303/ Timezone PST
Before you attack my grammar I am a Dyslexic

4 years ago #4

I have just done the sniper section, and like some of the others, it can be quite intense. I'm finding the story to be pretty good. I can see why this game is so highly rated.
GT: Rob ShadowHawk and DragonHunter720.
Remember, it's only a game, have fun and enjoy.

(Topic Creator) 4 years ago #5

agreed. I still don't get how to fully stealth the sniper level. It's one of the most random levels in the game.

You had to get hit once. Every single video I saw even the people that played before in the PS3 version had trouble.

4 years ago #6

agreed. I still don't get how to fully stealth the sniper level. It's one of the most random levels in the game.

I've done it once on hard, and it was a pain in the ass. The hardest part in transitioning from the last row of houses before the sniper to the alleyway running next to the building he's in.

Anyway, for me the sections I hate most are the ones I can never seem to complete 100% stealthy. They'd be:

*The skeleton crew defending the bridge entrance in Pittsburg. Enemies just seem to spawn on that gun turret no matter what. Turning off the generator seems to be the worst idea ever.

*Inside the school. There's a group of three runners at the end that always get me.

*escaping after Tess dies. I've done this perfectly once, but I don't have the patience to do it again.

Actually, whenever I get to a new area in the game I always seem to think to myself, "Og,

man. I hate this part.
But I feel that way about every survival themed game.
"It was the patient, cut-flower sound of a man who is waiting to die."

4 years ago #7

Worst: Pittsburg

Best: University and so on.
Gordon Freeman returns: Half-life 3.

4 years ago #8

Sniper level. Stay to the far left behind the houses. Creep all the way back enter sniper house from the rear. Sneak upstairs.
I DONT KNOW WHAT WERE YELLING ABOUT!
:XBL: THE BODY :PSN: THE_BODY_ _NNID: The_BODY

4 years ago #9

How come people don't like Pittsburg?

4 years ago #10

Best:
Escape from university after Joel gets hurt.
Pittsburgh
Hospital
Winter

Worst:
Hydroelectric dam
Capitol
Not changing until Jaguars win their division - 3/22/2008
3DS FC: 2380 - 3306 - 9208 IGN: Katie

4 years ago #15

How come people don't like Pittsburg?

Probably because its long and there is a lot of tough segments. The book store is pretty tough if you arent really careful. Then the area with the hung guard and Ellie sniping is impossible to stealth. Then there is the basement with the bloater in the hotel. Actually the hotel in itself is some what difficult with the narrow hallways, its hard to keep track of enemies.

I always dread Pittsburg but appreciate it after finishing it.

BoardsThe Last of Us RemasteredWorst part/Best part of the game? (SPOILERS)

4 years ago #11

Worst
- fighting David on survivor or grounded

Best
- everything else about this game
Are you saying I can run from a bullet?

4 years ago #12

*Inside the school. There's a group of three runners at the end that always get me.

I know the three you are talking about. You can trigger them by peeking out of the science classroom into the hallway before the bloater; they will then start walking towards you. The key then is that you have to backtrack and then leave the science classroom entirely for the moment by exiting back through the doors into the hallway you were in before. They will enter the classroom and start walking towards the front, once you see this by peeking through the door you can sneak by behind them (throwing a bottle towards the front of the classroom while you are sneaking by behind them if you need more time).

4 years ago #13

I find the sewers with Henry and Sam to be incredibly annoying.

I think Pittsburg is my favorite part of the game.
Visit my YouTube channel! Let's Plays, Commentaries and more!
(p"> - <http://www.youtube.com/user/NC17Productions> - <["<

4 years ago #14

I have stealthed the sniper level, though last play through I couldn't, but it is possible.

lol @ Under water segments, ugh.... I dread these in ANY game, even God Of War where you have unlimited breath. This one isn't as bad because you dont have to go too long and you have plenty of air, but I still hate them.

Worst part is that stupid ladder puzzle at the end. There is some frustrating battles, but they are generally manageable. I do hate the part where you fight the guys with the spot light, mainly because you have to re do so much crap every time you die. You have to sneak up on the two guards, hide behind the K rails and wait for them to shoot the clicker, sneak attack another guard, turn off generator, die.... rinse and repeat. Even worse is when Henry misses his mark and doesnt strangle the second guy....

Too many great parts to choose the best, any time I completely stealth an area or get through without fighting I am pretty happy.

Last of Us: Pittsburgh Incline



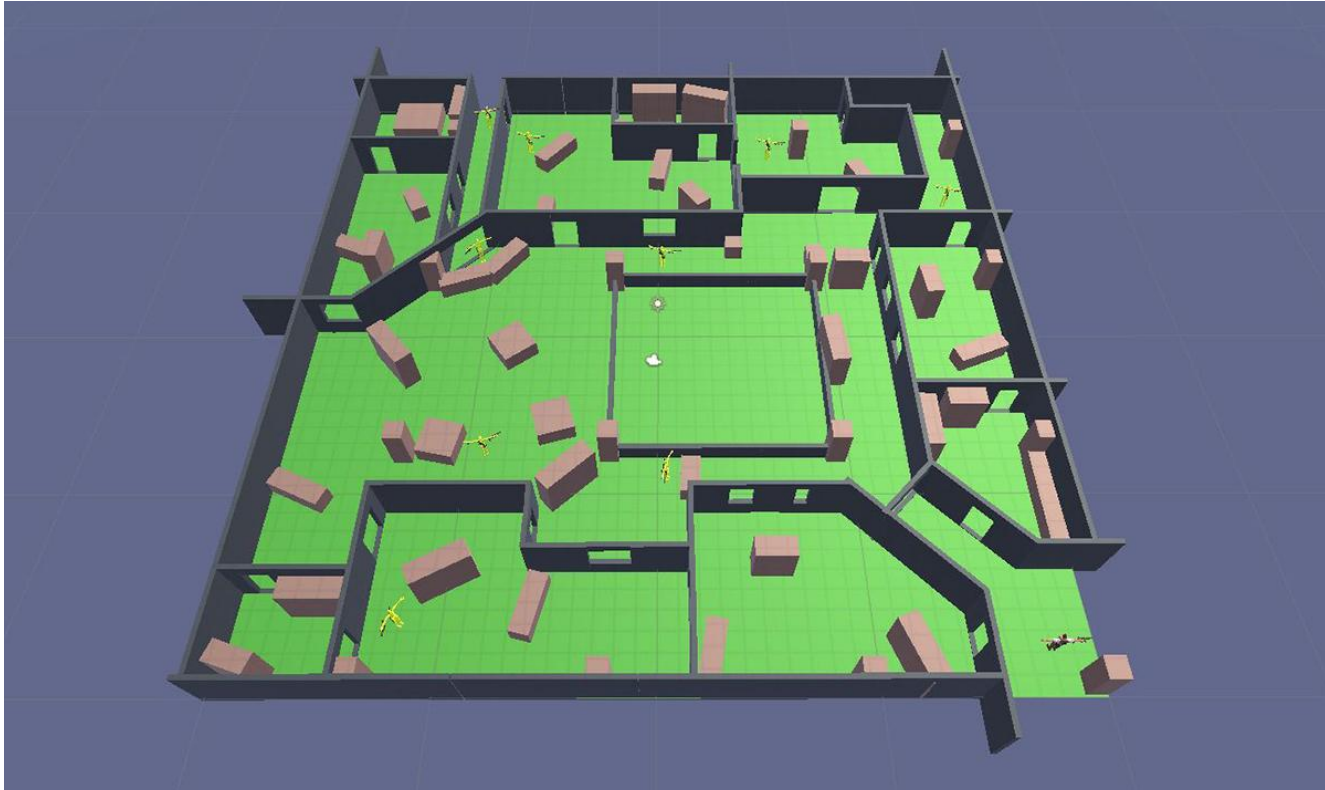
Last of Us: Pittsburgh Incline

Last of Us: Incline Key Gameplay Beats

Hyun Jang Won

1. The player arrives at the Station Square Station, at the base of Mt Washington.
2. Just ahead, the player sees a tunnel going into the mountain, and checks out abandoned cars and trams before coming back out.
3. The player sees up the Incline in the distance, framed by the surrounding environment.
4. The player approaches the base of the Incline - the Lower Station - and finds that one of the Incline Tram has crashed through the building, leaving a big gap in the half-demolished building.
5. The player enters through the gap, and moves about the building rubble, finding that a part of the stair has collapsed due to impact. The player searches around and moves the garbage container outside to use as elevated platform.
6. The player walks up the stairs and jumps down onto the Incline rail track. Framed by the building, the player starts to walk up the Incline.
7. The player reaches a part of the Incline where it is severely damaged as a result of cars crashing into the Incline's structure. The player is unable to proceed due to the huge gap. The player hops off the Incline by climbing down its structure, and using a truck as a platform.
8. Seeing that the other side of the Incline is out of reach, the player follows the road, walks under a road overhead, and stumbles across a house in the hills.
9. When the player enters the house, he/she finds the inhabitants brutally murdered. Here the player gathers some pickups.
10. The player climbs up a building embedded in the hills to gain enough elevation to jump onto the other side of the Incline.
11. As the player walks up the rail track and approaches the Upper Station, the other Tram breaks loose and comes screeching down the track towards him/her. The player jumps out of its way.
12. The player reaches the Upper Station, where he encounters some of the Hunters. After disposing of them, the player exits the building.
13. The player sees the mid-rise building in the distance, and walks along the cliff road towards it.
14. The player reaches the pharmacy, and finds the medicine.

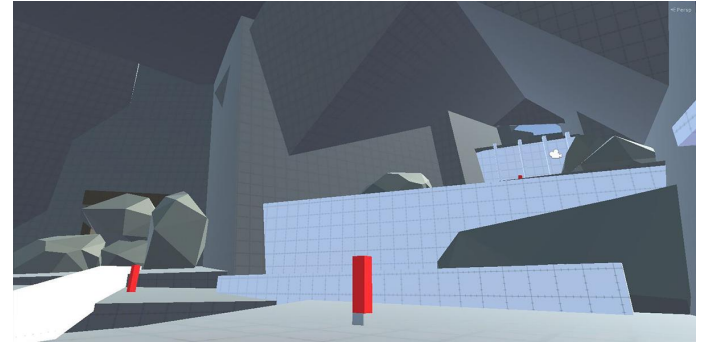
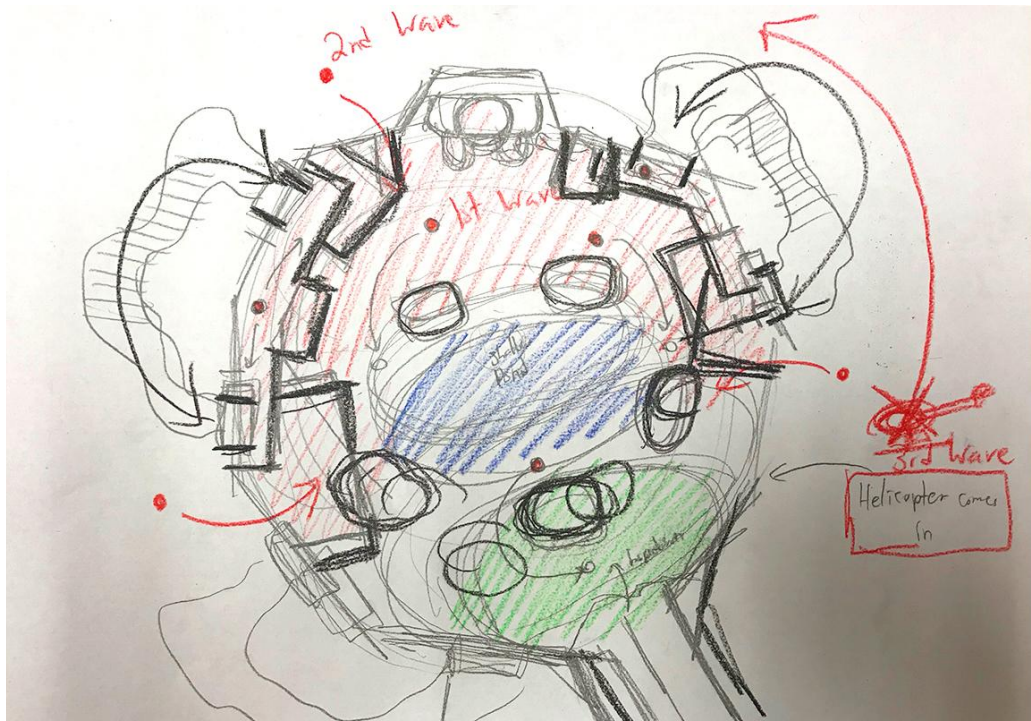
Last of Us: Speed Combat Level Design



Last of Us: Speed Combat Level Design



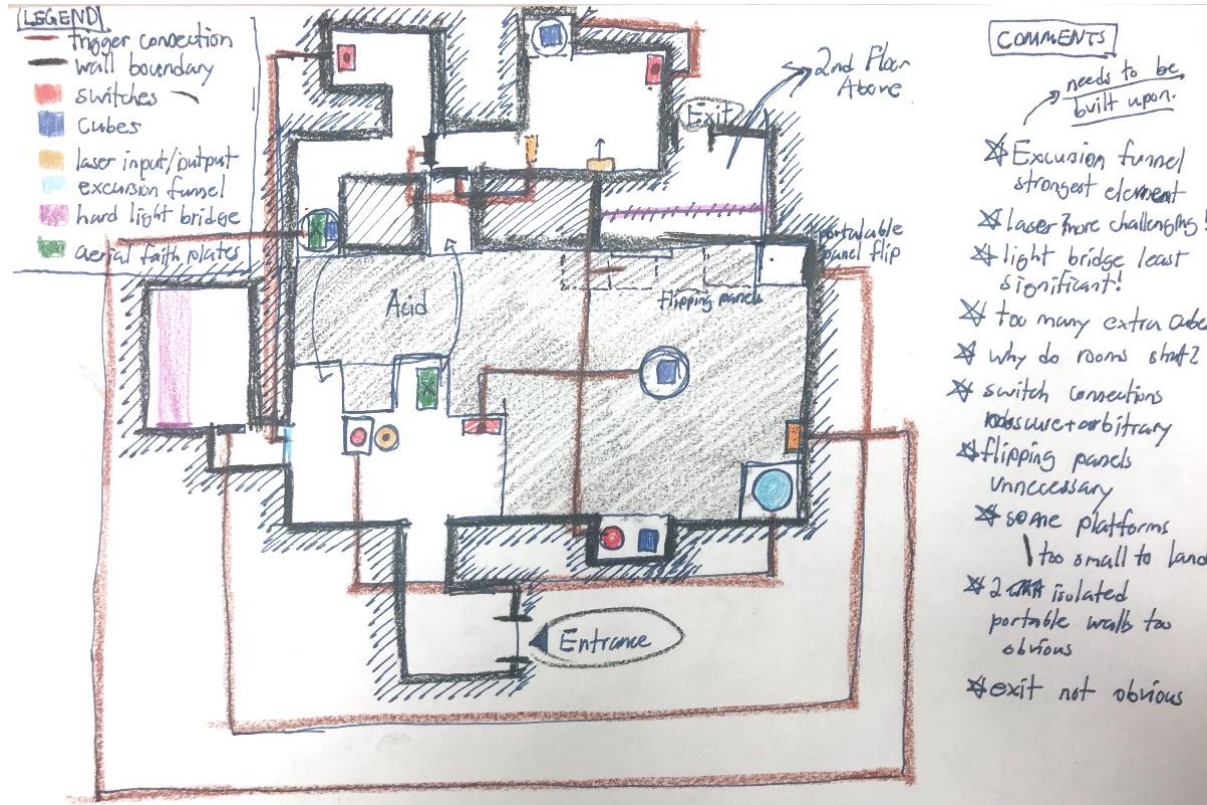
Salt Mine: Act 4



Portal 2: Community Maps



Portal 2: Community Maps



Portal 2: Community Maps

