

Year 2 Block A

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LEVEL DESIGN ITERATION DOCUMENT

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SIDE NOTE

My changelogs can be quite long; this is because I wanted to explain some of my choices more in-depth. All basic changes are marked with **black** bullet points, while additional information is marked with **white** bullet points.

VERSION 01: BLOCKOUT

IMAGES:

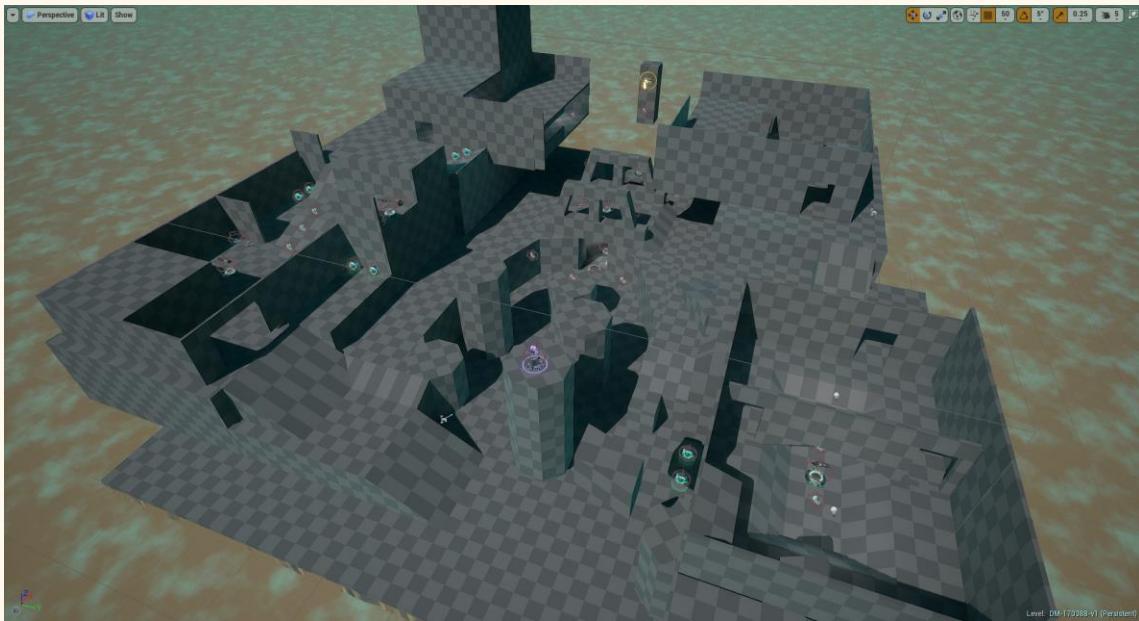


IMAGE 1: OVERVIEW

IMAGE 2: BIO RIFLE ROOM

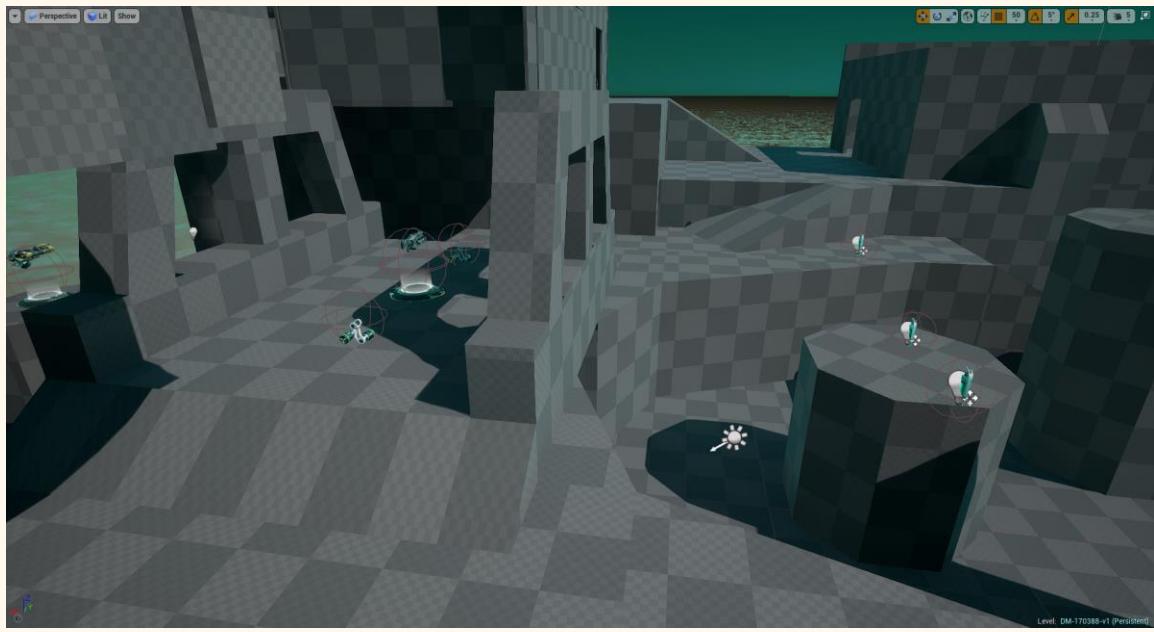


IMAGE 3: MIDDLE BRIDGE WITH LINK GUN

IMAGE 4: UNDER THE BRIDGE WITH GRENADE LAUNCHER



IMAGE 5: MINIGUN & SNIPER ROOM

IMAGE 6: ENERGY RIFLE ROOM #1



IMAGE 7: ENERGY RIFLE ROOM #2

IMAGE 8: GAP BETWEEN ENERGY RIFLE ROOMS



IMAGE 9: FLAK CANNON AREA

CHANGELOG:

- N/A - first version of level.
-

SUMMARY OF PLAYTESTS PERFORMED:

- Weapon placement often doesn't fit the room, especially Bio Rifle, Grenade Launcher and Minigun.
 - The scale overall is a bit too small and close quarters, making the Flak Cannon and Rocket Launcher very powerful.
 - Wall dodges are not marked well and are very inconsistent. It also breaks flow, as many players needed multiple attempts to successfully jump up some ledges.
 - Flow isn't as intended; the Flak Cannon area is way too crowded.
-

VERSION 02: WHITEBOX

IMAGES:

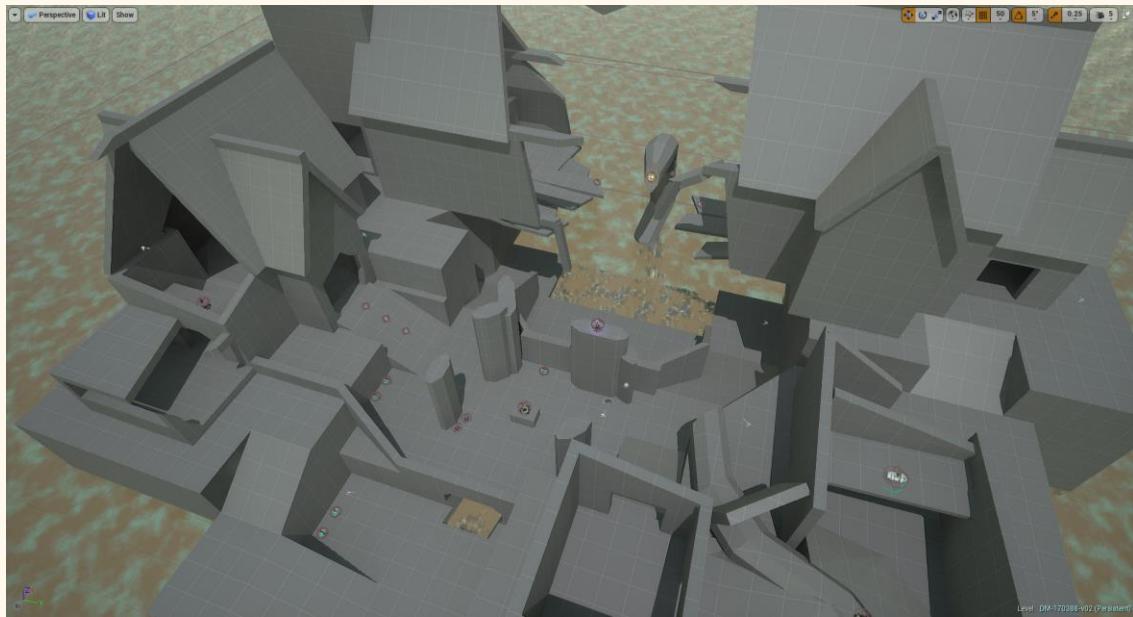


IMAGE 1: OVERVIEW

IMAGE 2: GRENADE LAUNCHER ROOM (FORMERLY BIO RIFLE ROOM)



IMAGE 3: MIDDLE PART WITH MINIGUN (FORMERLY MIDDLE BRIDGE WITH LINK GUN)

IMAGE 4: CAVE WITH LINK GUN (FORMERLY UNDER THE BRIDGE WITH GRENADE LAUNCHER)

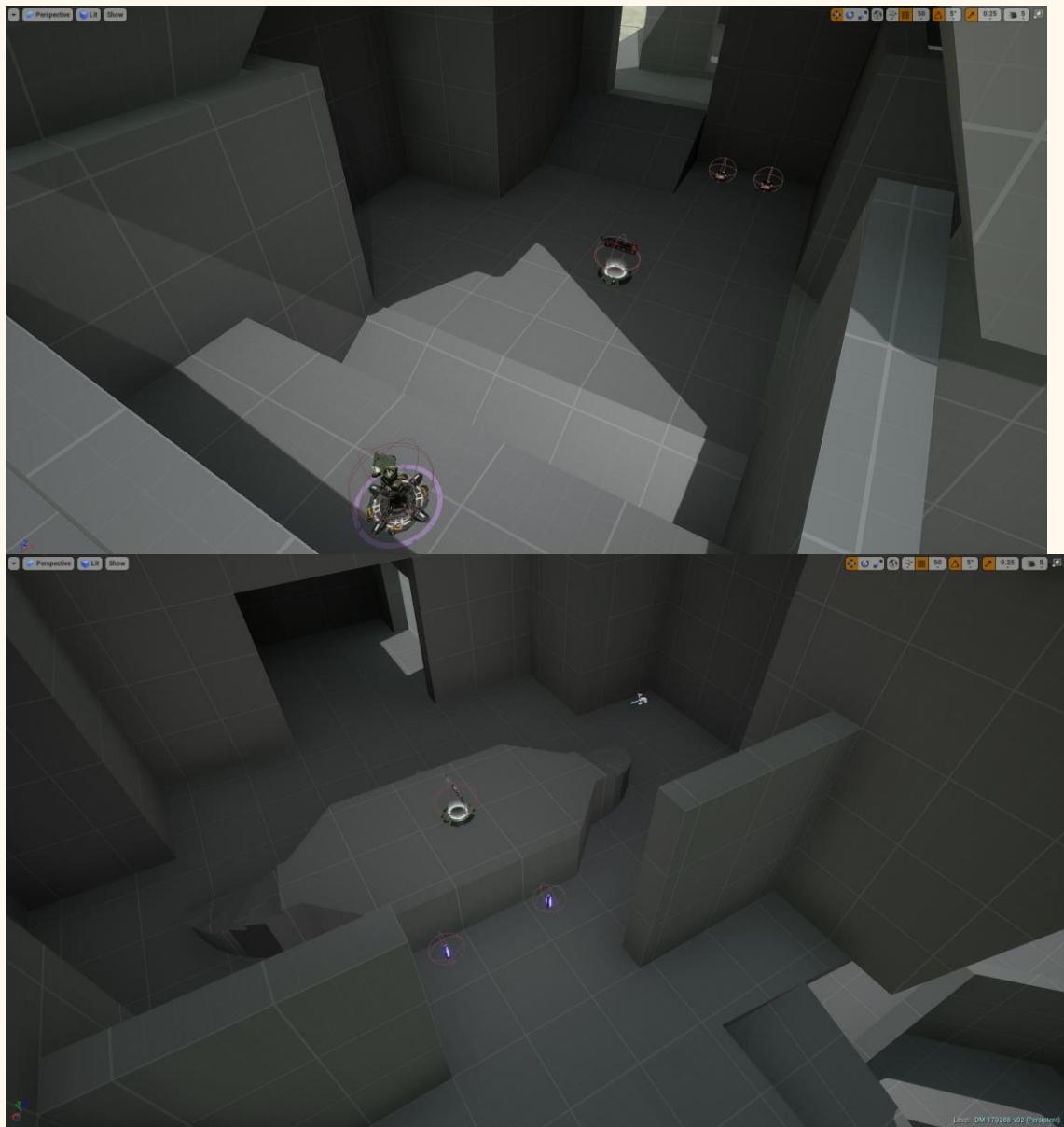


IMAGE 5: ROCKET LAUNCHER ROOM (FORMERLY MINIGUN & SNIPER ROOM)

IMAGE 6: ENERGY RIFLE ROOM #1

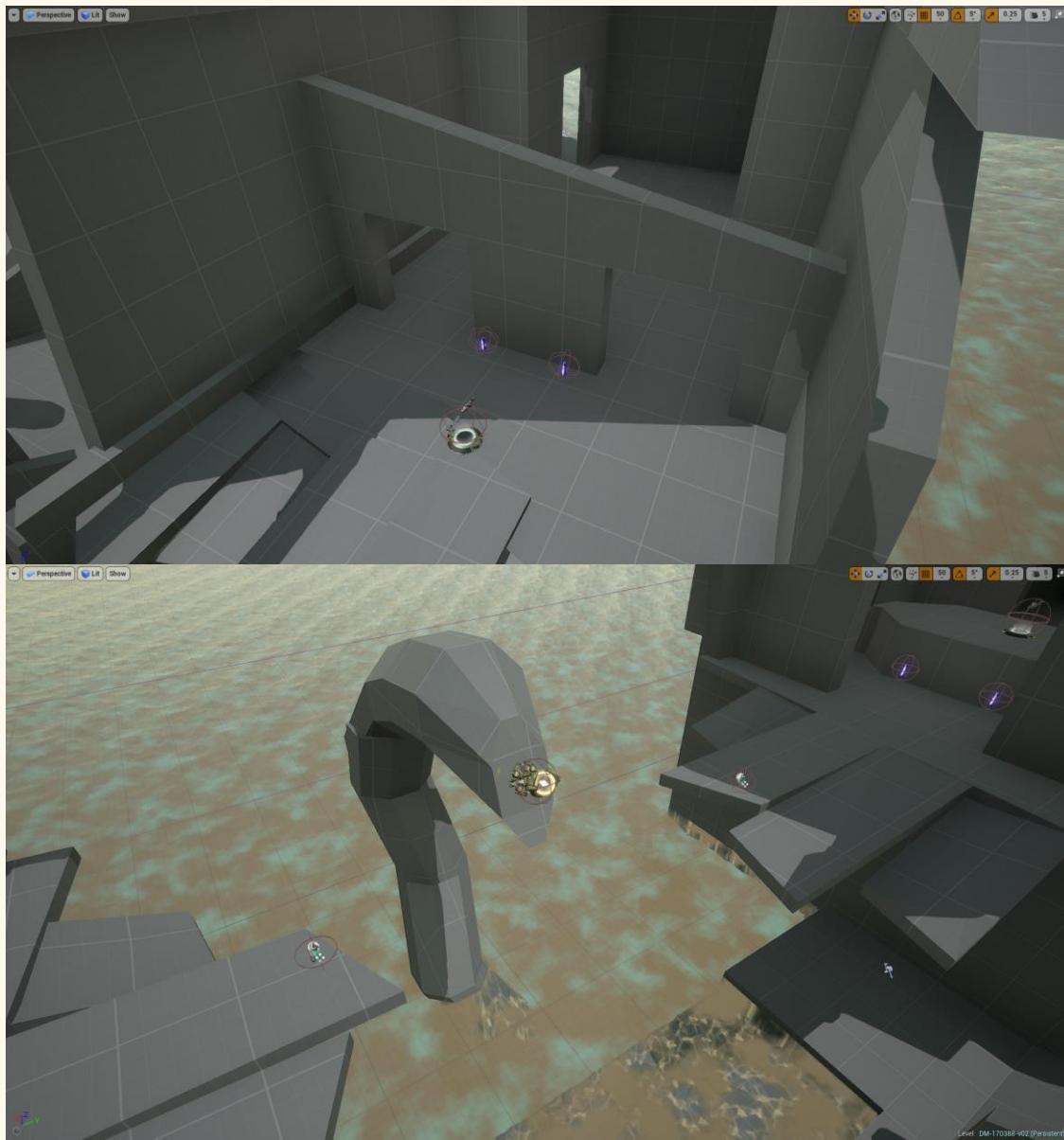


IMAGE 7: ENERGY RIFLE ROOM #2

IMAGE 8: GAP BETWEEN ENERGY RIFLE ROOMS



IMAGE 9: FLAK CANNON AREA

CHANGELOG:

- Started over in completely new map file, taking knowledge from playtests from previous iteration into account.
 - I found it would be better to start over entirely to get the scale right, improve flow and layout and apply the newly made nodemap to my level.
- Changed overall scale to make level bigger and some areas more spacious.
- Replaced Bio Rifle room with Grenade Launcher room.
 - I decided on removing the Bio Rifle as it inherently is a less popular weapon than the Grenade Launcher.
- Replaced the Middle Bridge with a general middle open area, replacing the Link Gun with the Minigun.
- Widened the middle part (formerly the bridge) and made it accessible from both sides of the Flak Cannon area.
 - The asymmetry in the previous version impacted flow too much; it caused one side of the level to be less populated.
- Replaced Grenade Launcher area with Link Gun cave, also adding a more spacious area after the cave.
 - Playtests showed the cave was too close-quarters for the Grenade Launcher. The bouncing of grenades against the pillars resulted in a lot of chaos while the players were barely getting kills.

- Replaced Minigun & Sniper room with Rocket Launcher room, and made it accessible from the middle part and after the cave area.
 - Because it only had two exits, this room was very underpopulated. Making it more easily accessible improved that. The Sniper Rifle was removed as this whitebox version of the map would be too open, and the weapon would be too powerful.
 - Made the Flak Cannon area a lot more spacious and generally uninteresting to be in, encouraging players to either head to the middle part or the cave area.
 - I don't want players to stick around here too long and want to make it dangerous; underneath Shock Rifles with good line of sight, no cover, Flak Cannon not being good at long range, etc. Players are encouraged to grab the weapon and keep moving.
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SUMMARY OF PLAYTESTS PERFORMED:

- This version was playtested with the teachers.
 - There are a lot of areas not intended for gameplay that the players can reach, such as ledges behind buildings.
 - Some pickups like the Large Health pickup are too strong and too easily accessible.
 - There are certain edge of world issues; it is too easy to exit the level entirely, and the water does not communicate depth and distance.
 - The Flak Cannon is good in most areas except for the area it is found in. Area should be made more interesting.
 - There are some minor flow issues, like ledges where the players has to jump or ledges that are slightly too high.
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VERSION 03: WHITEBOX FIRST ITERATION

IMAGES:

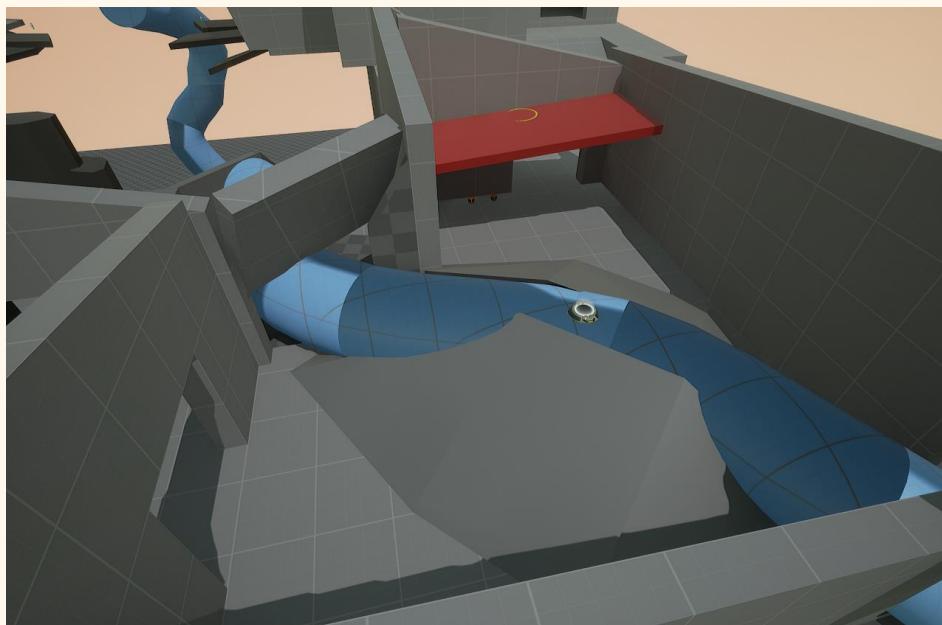


IMAGE 1: OVERVIEW

IMAGE 2: GRENADE LAUNCHER AREA

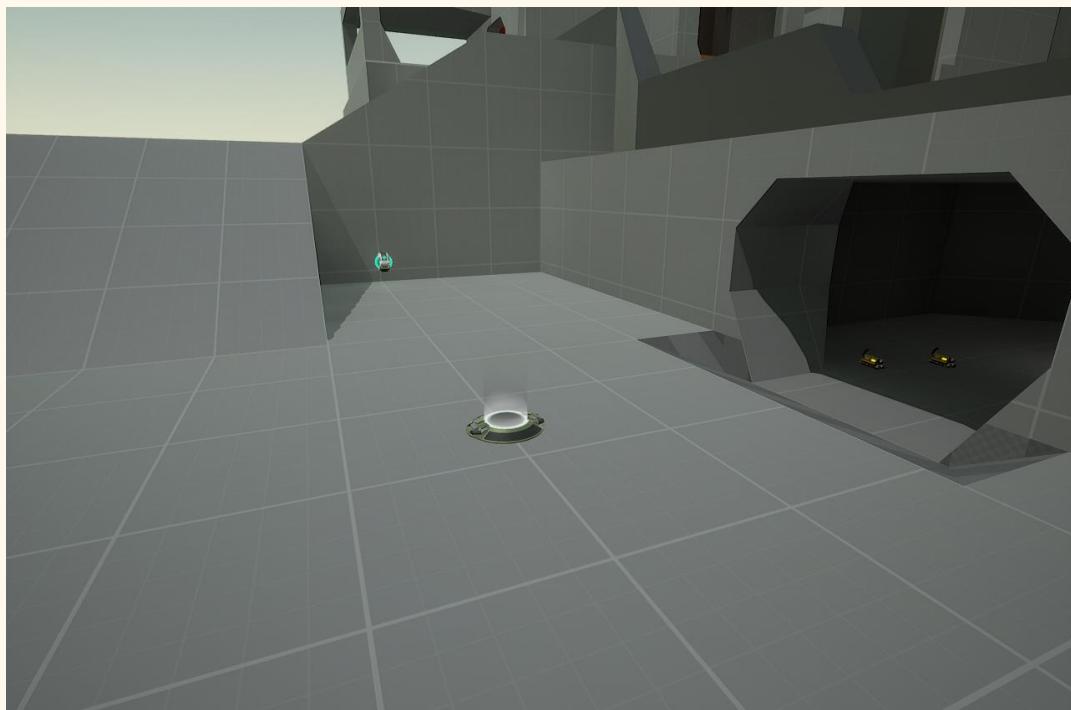
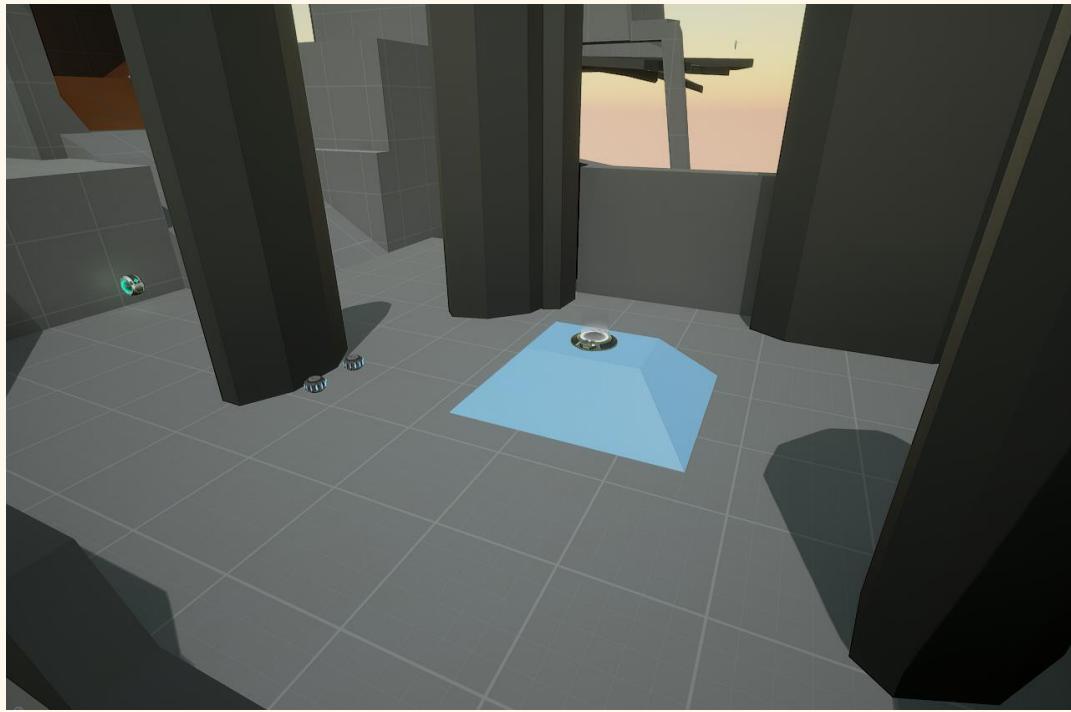


IMAGE 3: MINIGUN AREA

IMAGE 4: FLAK CANNON AREA (FORMER CAVE LINK GUN AREA)

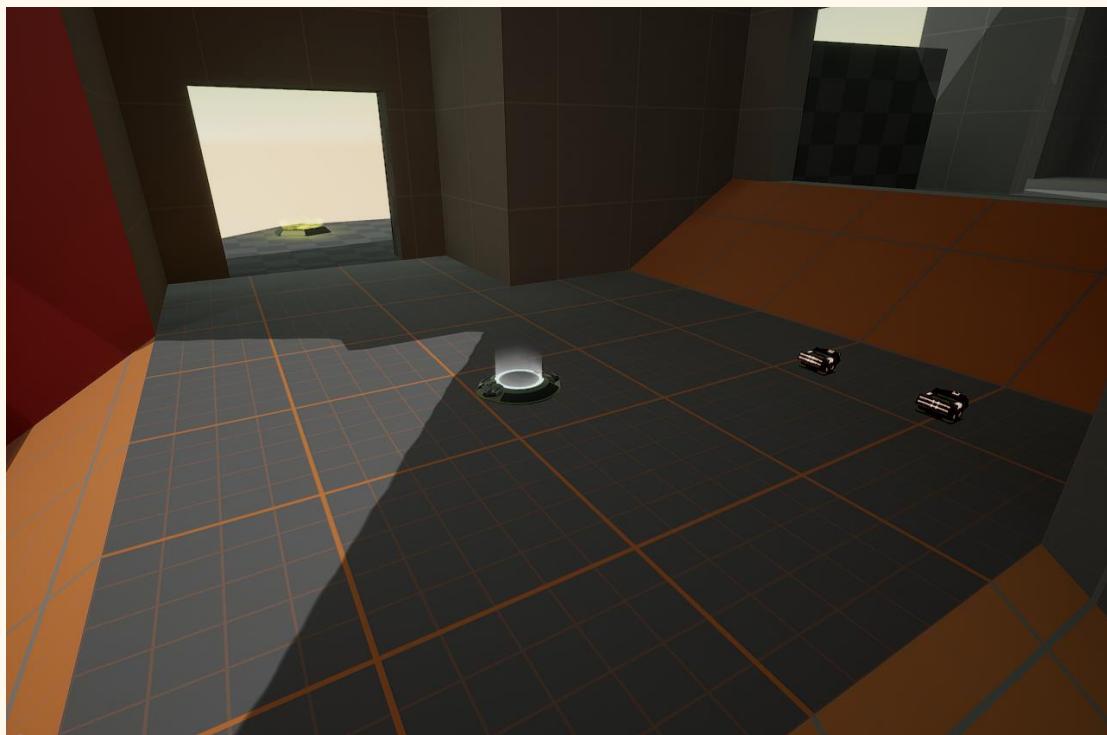
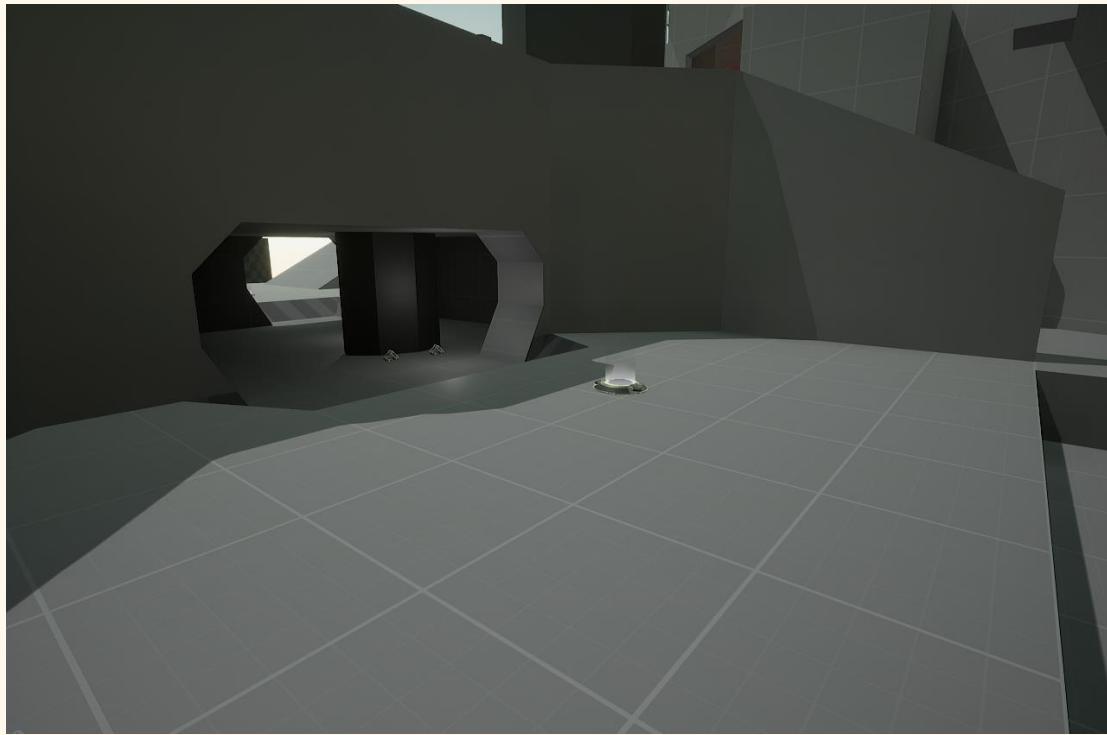


IMAGE 5: LINK GUN AREA (FORMER FLAK CANNON AREA)

IMAGE 6: ROCKET LAUNCHER AREA

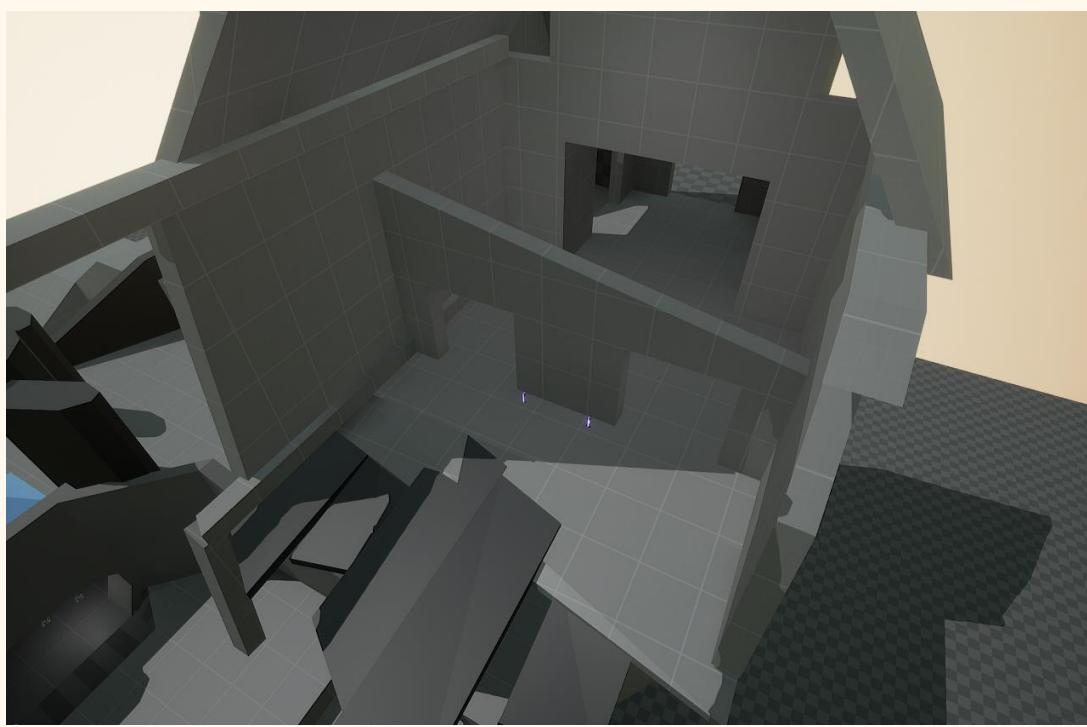


IMAGE 7: SHOCK RIFLE AREA #1

IMAGE 8: SHOCK RIFLE AREA #2

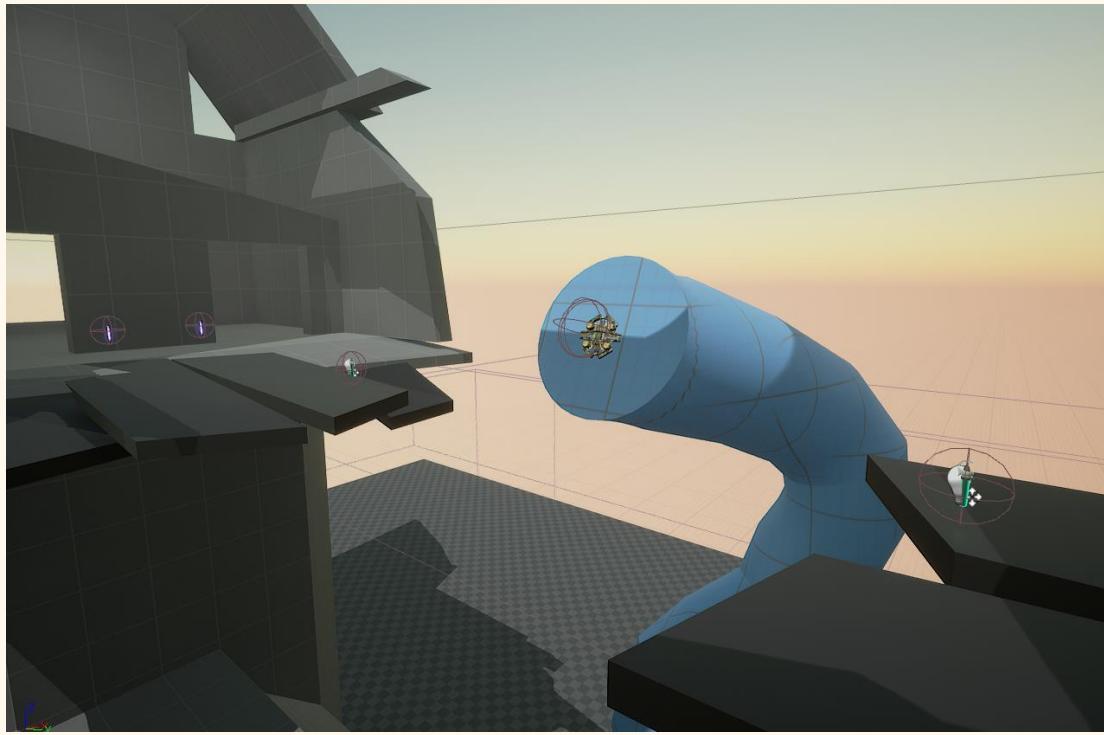


IMAGE 9: WALL DODGE FOR ARMOR

IMAGE 10: WALL DODGE FOR ARMOR #2 (FORMERLY LARGE HEALTH)

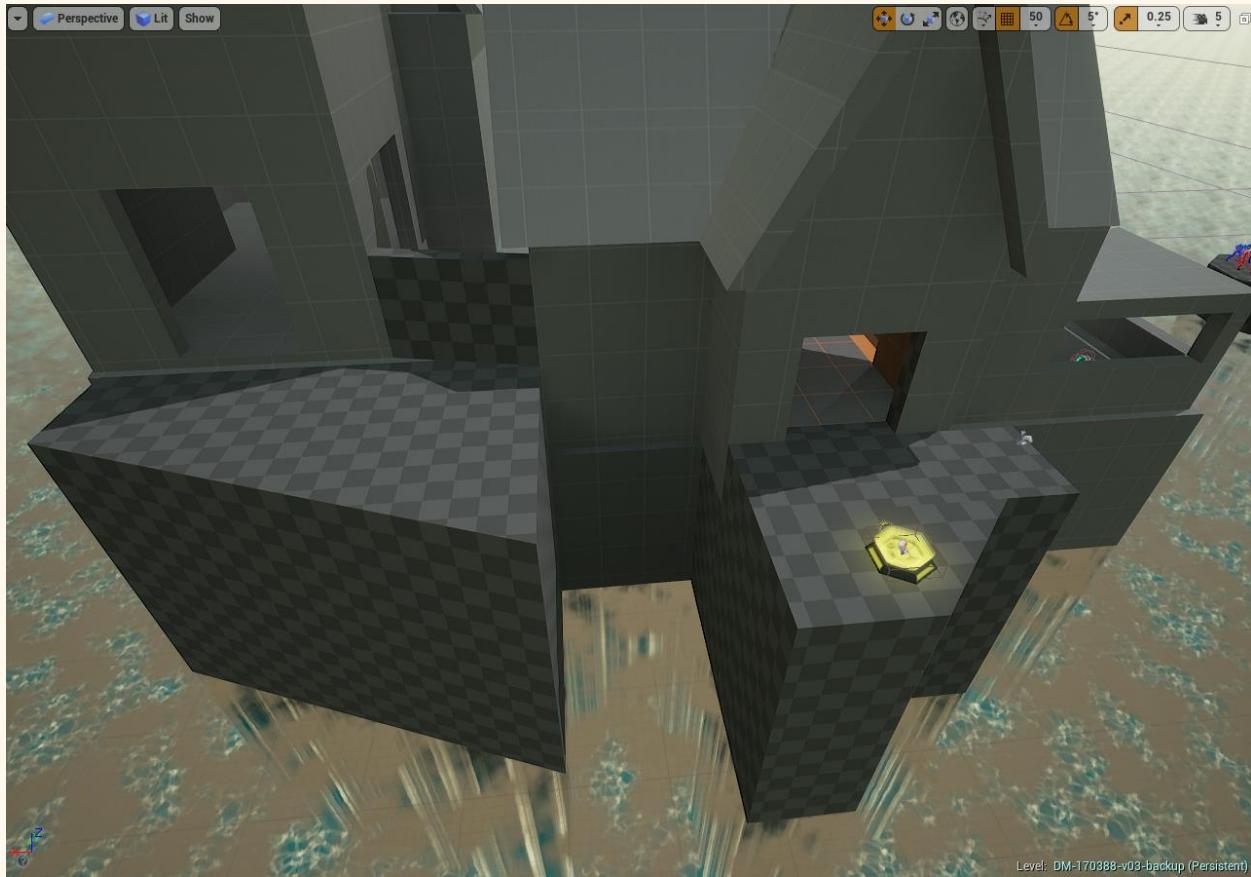


IMAGE 11: NEW PATH FROM ROCKET LAUNCHER AREA TO SHOCK RIFLE AREA #2

CHANGELOG:

- Gave certain geometry objects simple textures.
 - I colour-coded the rooms and interactable objects to help the player recognize rooms, ninja routes, wall-dodge opportunities, etc. For example, the Rocket Launcher area is orange, tentacles are blue, wall-dodge opportunities are marked red.
- Resolved edge of world issues by removing easily accessible paths behind buildings that were not intended for players to reach.
- Improved navigation to not lead into dead ends.
- Swapped the placement of the Link Gun and Flak Cannon, and moved the Link Gun out of the cave.
 - Placing the Link Gun and Flak Cannon in front of the cave would result in players actually fighting in the cave area, which would be better.
- Changed the armor type of the wall dodge gap from Shield Belt to Chest Armor.
- Replaced the Large Health pickup with the Shield Belt pickup.

- This health pickup, in combination with the armor being so close to it, was too powerful.
 - Removed the Chest Armor between the Grenade Launcher area and the Shock Rifle area.
 - Added a new path leading from Rocket Launcher area to Shock Rifle area #2.
 - This would hopefully make the Rocket Launcher area less chaotic; it would offer players one more exit out of the area.
 - Placed new health pickups.
 - Added pain causing volumes in the water.
-

SUMMARY OF PLAYTESTS PERFORMED:

- The Link Gun area was the least popular area among testers, as the area did not suit the weapon and was quite bland. The Rocket Launcher area was among both the favourite and least favourite areas; some players liked the high amounts of action there, while some thought the area was too small and deadly.
 - Spawn points heavily need improvement; 7 out of 8 testers got killed before they could acquire a weapon.
 - UDamage placement needs to improve, as all testers either didn't know how to reach it or didn't even know there was UDamage in the level.
 - Jump Boots could be placed in a more visible spot.
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VERSION 04: WHITEBOX SECOND ITERATION

IMAGES:

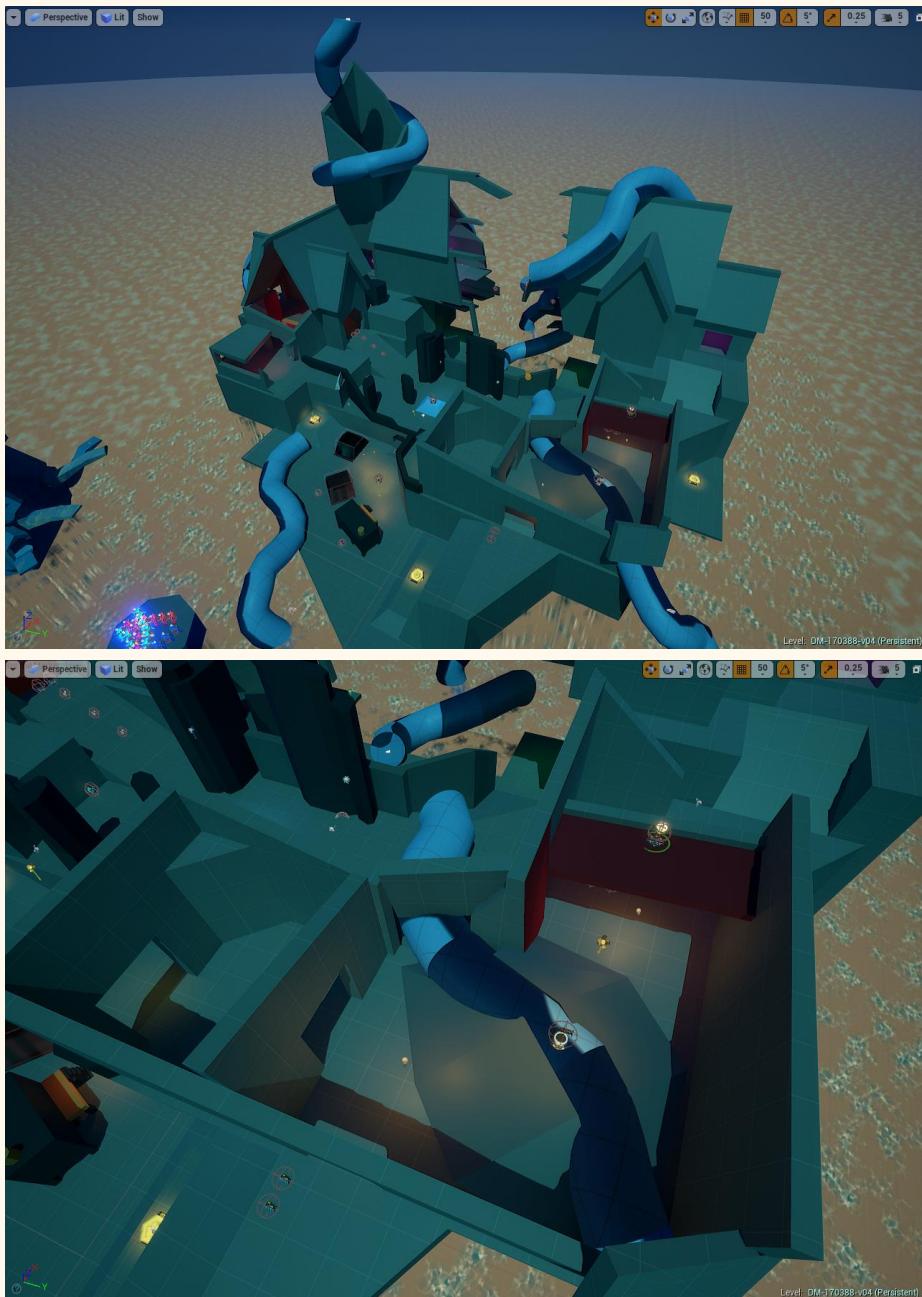


IMAGE 1: OVERVIEW

IMAGE 2: GRENADE LAUNCHER AREA



IMAGE 3: LINK GUN AREA

IMAGE 4: FLAK CANNON AREA

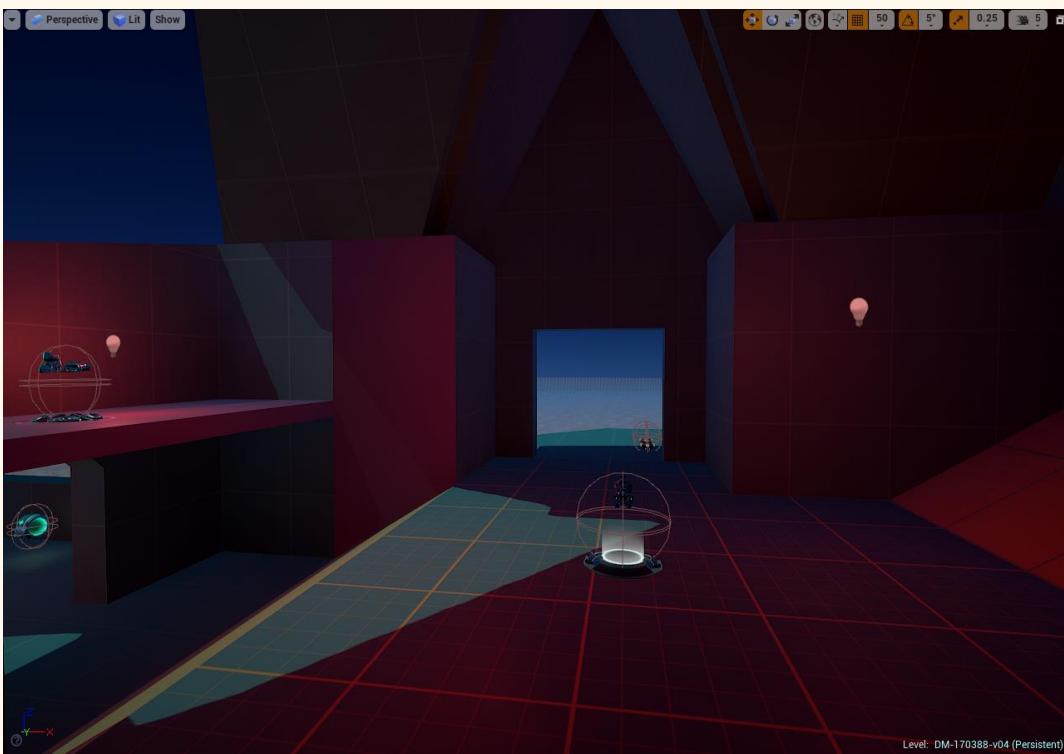
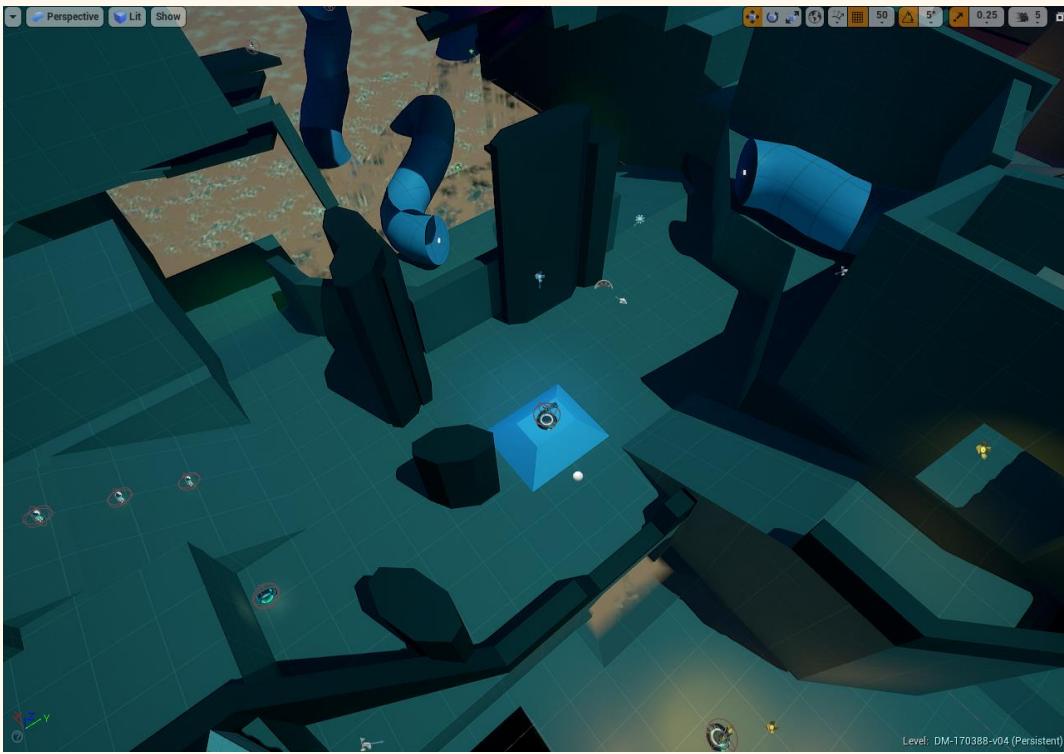


IMAGE 5: MINIGUN AREA

IMAGE 6: ROCKET LAUNCHER AREA

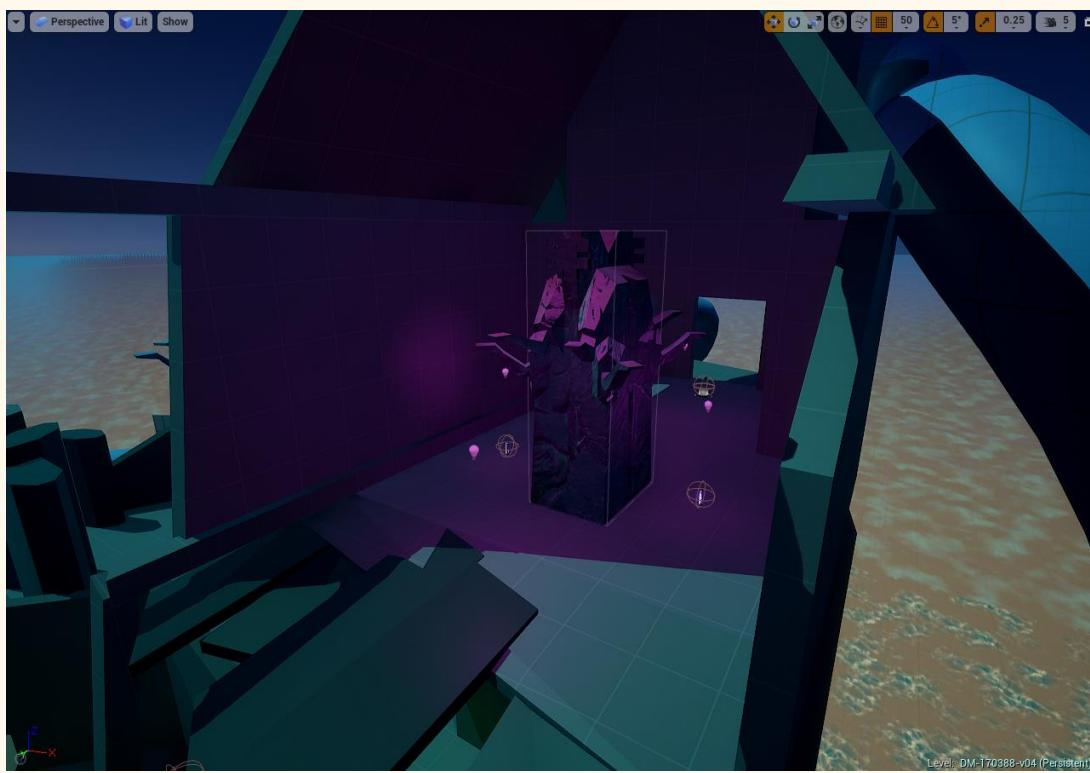
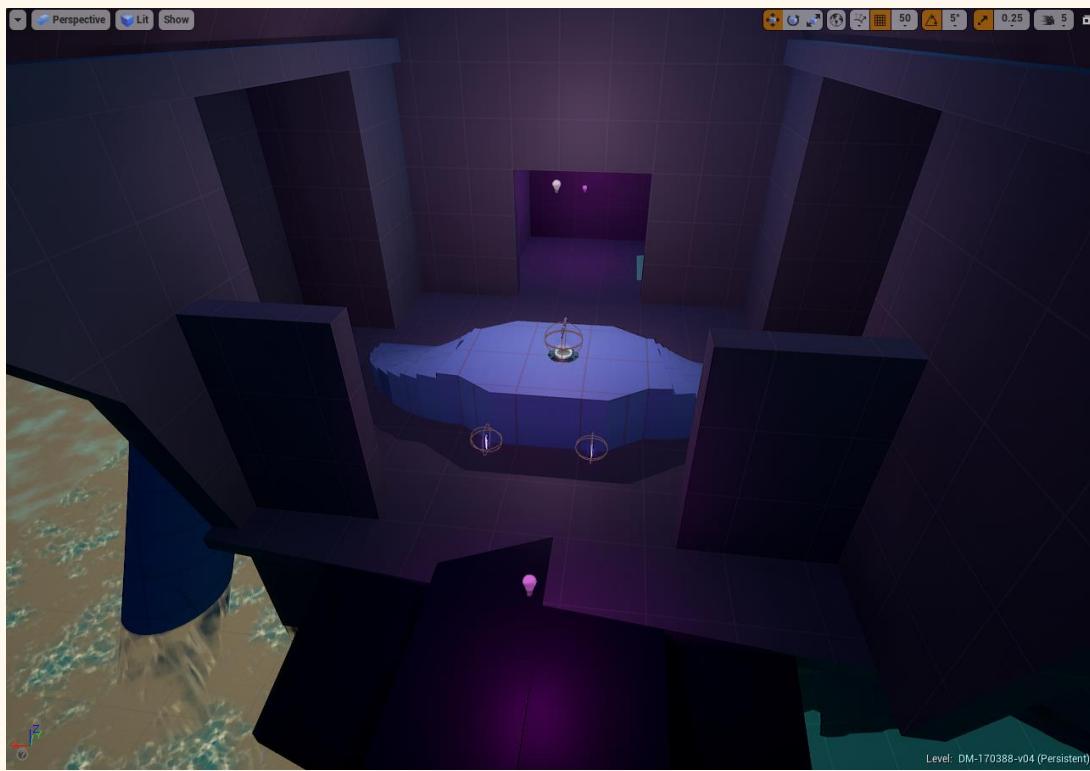


IMAGE 7: SHOCK RIFLE AREA #1

IMAGE 8: SHOCK RIFLE AREA #2

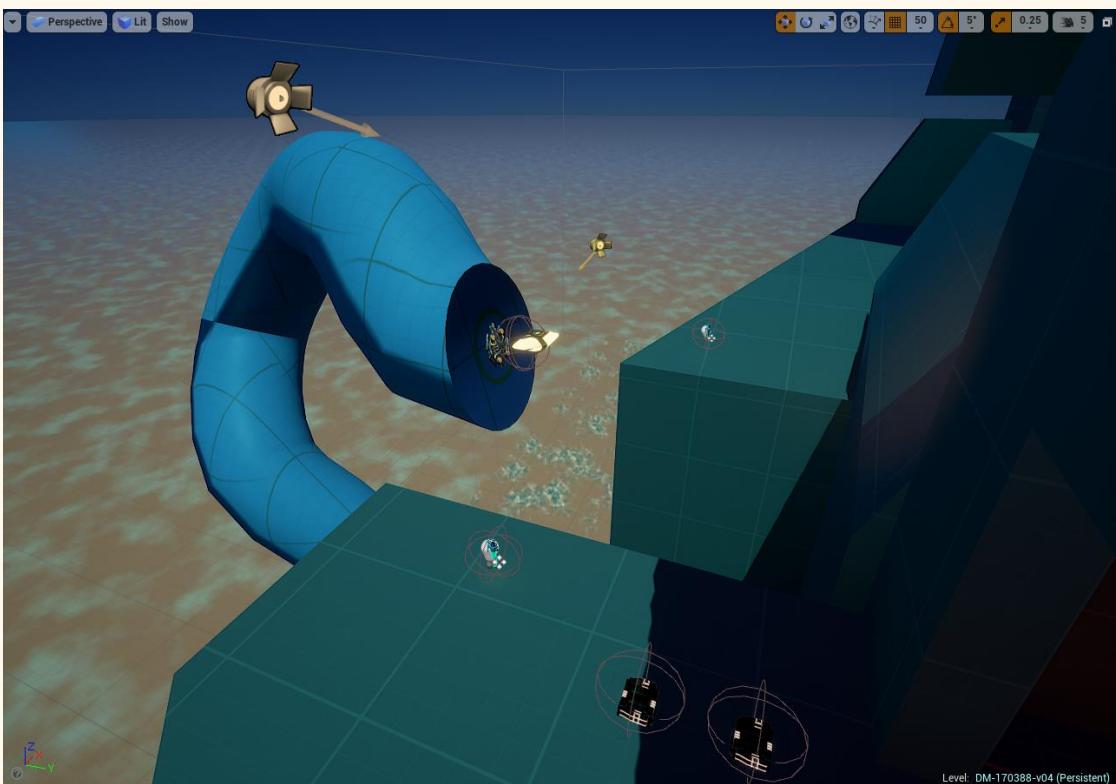
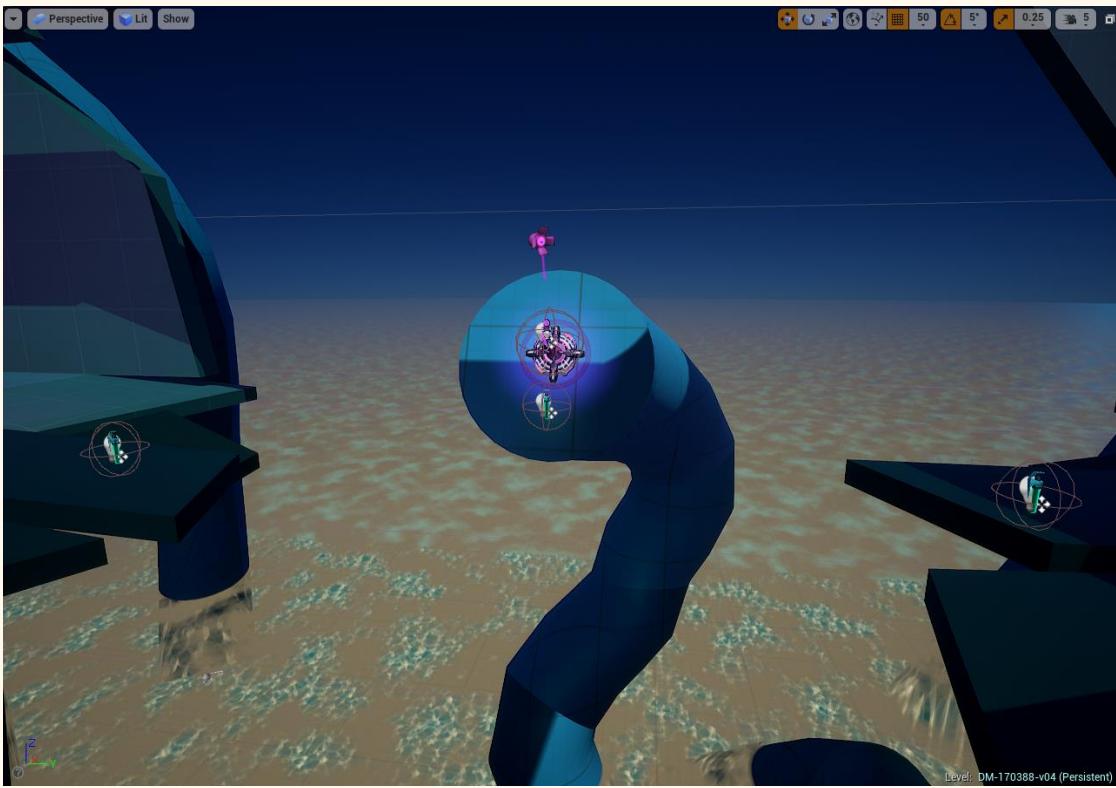


IMAGE 9: WALL DODGE GAP BETWEEN SHOCK RIFLE AREAS

IMAGE 10: PATH CONNECTING ROCKET LAUNCHER AREA AND SHOCK RIFLE AREA

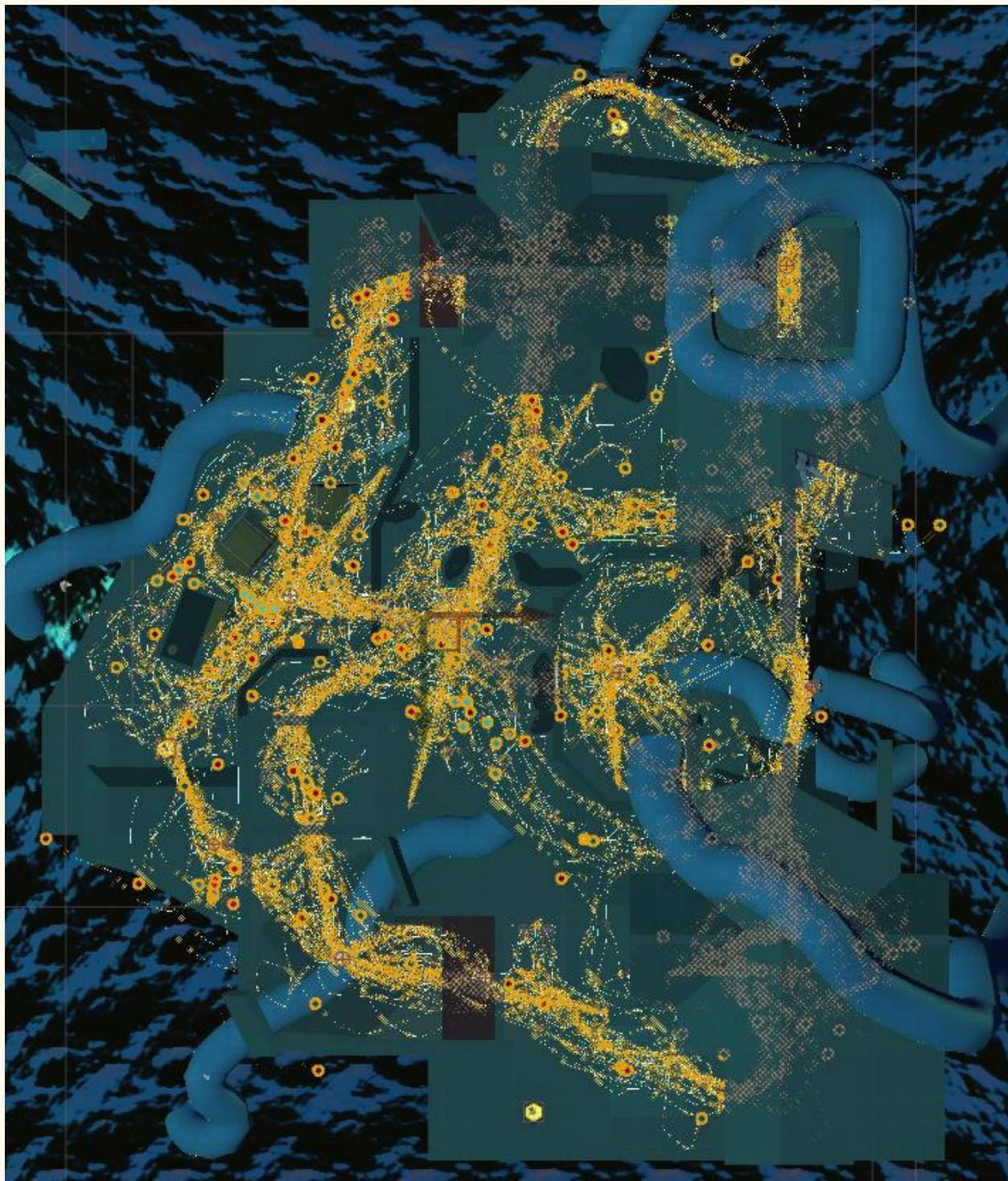


IMAGE 11: HEAT MAP DATA

CHANGELOG:

- Added detailed lighting to the entire level.
 - I focused more on colour-coding areas with lighting. The overall lighting in the level is quite dark, so colours really popped out. I gave every area coloured lights that compliment the weapon's primary colour. For example, players associate red with the Rocket Launcher, so I gave that area red lights. The Shock Rifle is purple, so the church was lit up with purple lights. The Minigun area has blue lights, the Link Gun area has green lights, the Flak Cannon yellow, and the Grenade Launcher orange. Playtests later showed that this really does help players differentiate areas; after adding lighting, and later recognizable architecture, players barely got lost ever again.
- Overhauled the Flak Cannon area, adding more cover, changing the path to the Rocket Launcher area with a Jump Pad, and adding a second Jump Pad leading to the Grenade Launcher area.
 - To try to increase flow towards the Grenade Launcher area more, I placed cover in such a way that the players were guided towards the jump pad leading there. To compensate for the Flak Cannon's power, I made the doorway to the Grenade Launcher area smaller so players there had a good chance of defending themselves.
- Added cover in the Link Gun area.
- Changed some cover, particularly in the Minigun area, to improve navigation and flow.
 - When coming out of the Grenade Launcher area, the player's vision is immediately drawn towards the Rocket Launcher area because of the way the pillars are placed; they can also clearly see the Minigun in their path, so the player is being guided towards the Minigun and then towards the Rocket Launcher area. The ramp leading up towards the Rocket Launcher is a perfect area for the Minigun to have a good line of sight and to shoot players standing above them.
- Changed the amount of cover in the Shock Rifle #2 area, replacing the wall with a large statue in the middle.
- Replaced the Jump Pad on the path between the Rocket Launcher area and Shock Rifle #2 with a wall dodge for a Chest armor pickup.
 - I did this to draw focus back to the original plan of having wall-dodges in all ninja routes. This wall-dodge is of the same type as the one in between the Shock

Rifle areas, so players will be able to put two and two together and know that they should wall-dodge.

- Replaced the Chest Armor pickup on the wall dodge between the two Energy Rifle areas with the UDamage pickup.
 - This solves players not finding the UDamage, armor being too easily accessible, and draws focus back to the focal point, all in one go.
- Changed the path from the centre to the Grenade Launcher area to be closer to the Minigun area to balance flow.
 - Players were skipping the Minigun area, so I wanted to have a path that leads closer by it so players see the Minigun and can make the decision to go pick it up or continue towards the Grenade Launcher.
- Also added a second entrance to the Grenade Launcher area from the Flak Cannon area.
- Made sure every spawn point is against a wall, in a safe spot and pointing at a weapon pickup nearby.
- Lowered the amount of health pickups.
- Placed the Large Health pickup at the top of the church tower as a secret only accessible with Jump Boots.
- Added more tentacles and other landmarks for orientation and improving focal point.
 - Max Pears had a good suggestion to make tentacles wrap around the church's tower, to draw attention to that area more.
- Added two Jump Pads at water level to more quickly jump back into action.
- Added Line Up Zones.

SUMMARY OF PLAYTESTS PERFORMED:

- Results from these playtests were overall very scattered, and thus very hard to use.
- The Flak Cannon area was the most popular area, followed up by the Shock Rifle and Rocket Launcher area sharing second place.
- The Rocket Launcher area remains to be a bit of a controversial place; players either hate it or love it.
- Out of 11 testers, 8 disliked an area. Votes on the least favourite area are very scattered, each with different reasons. More details in the playtesting document.
- There are a little too few health pickups. Armor pickups can be very overpowered once you know where they are.
- Spawn points have improved quite a bit but aren't perfect yet; some spawn-killing still occurs.

- Quite a few players disliked the water and having to swim back, and would rather die instantly when falling off.
 - Flow is still a bit angular in some places. Some rooms have corners that are too sharp.
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VERSION 05: WHITEBOX THIRD ITERATION

IMAGES:

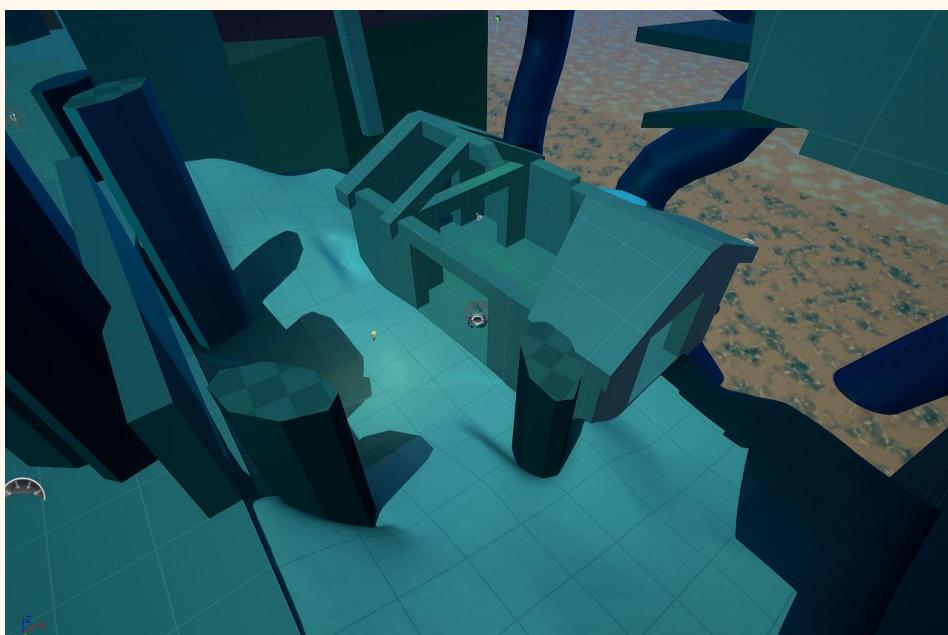
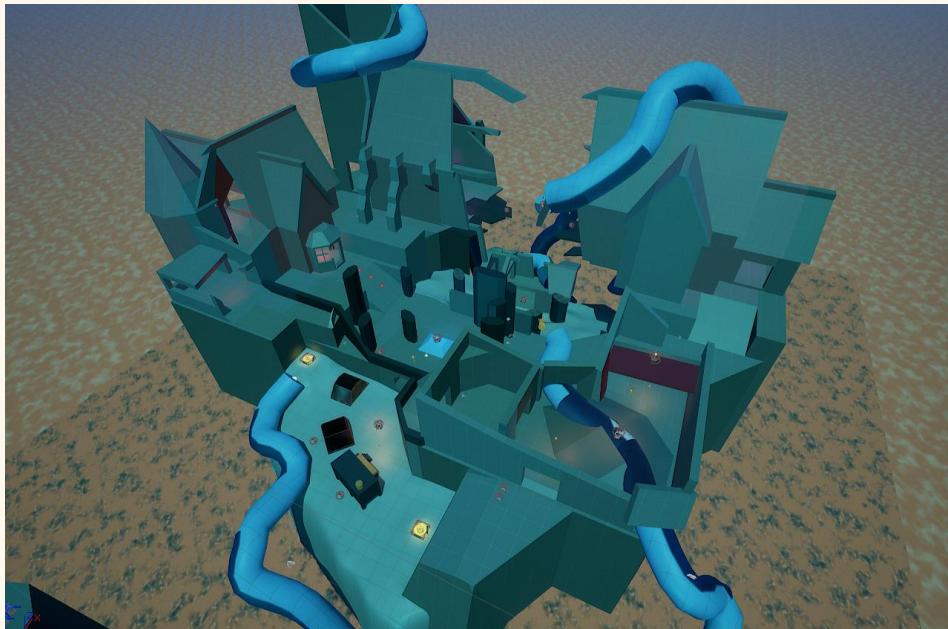


IMAGE 1: OVERVIEW

IMAGE 2: NEW LINK GUN AREA

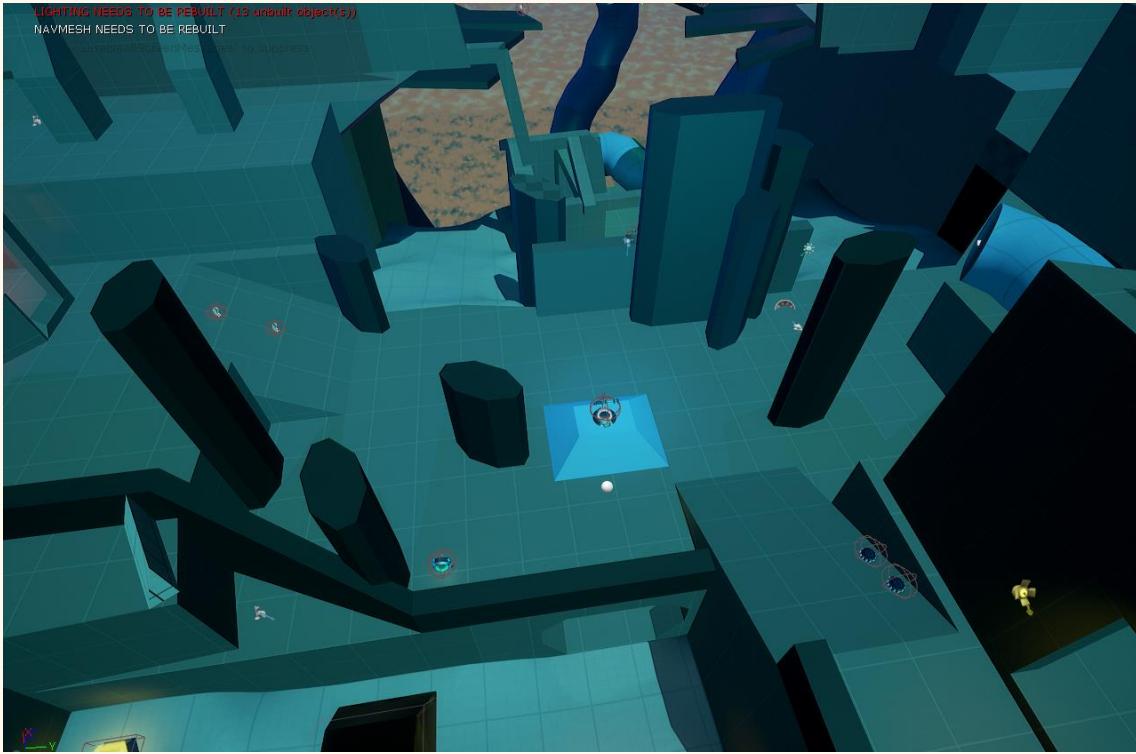
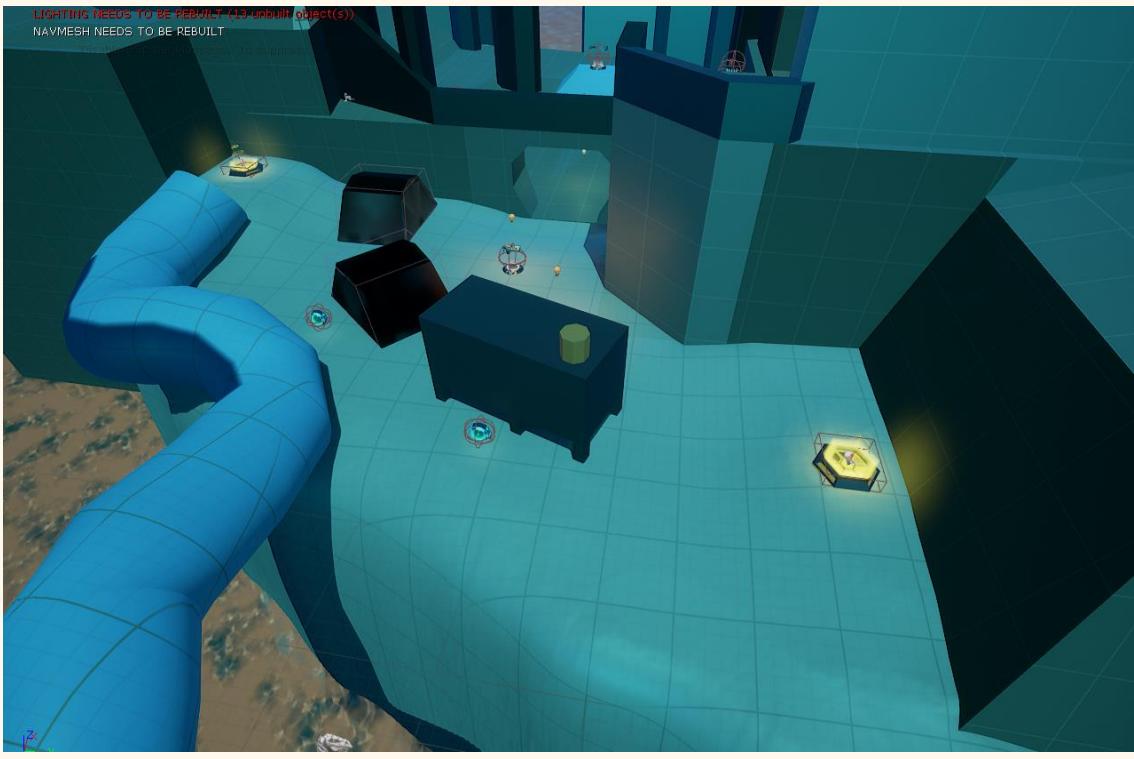
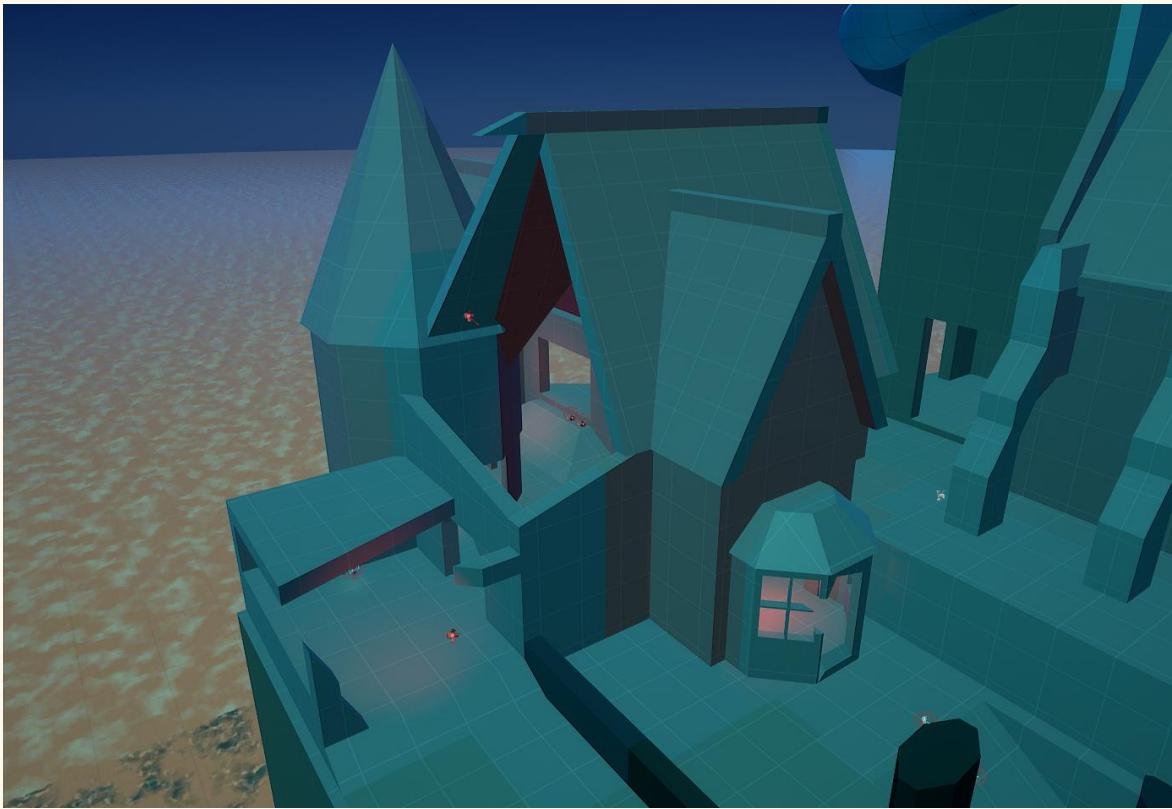


IMAGE 3: FLAK CANNON AREA

IMAGE 4: MINIGUN AREA



LIGHTING NEEDS TO BE REBUILT (15 unlit object(s))
NAVIMESH NEEDS TO BE REBUILT

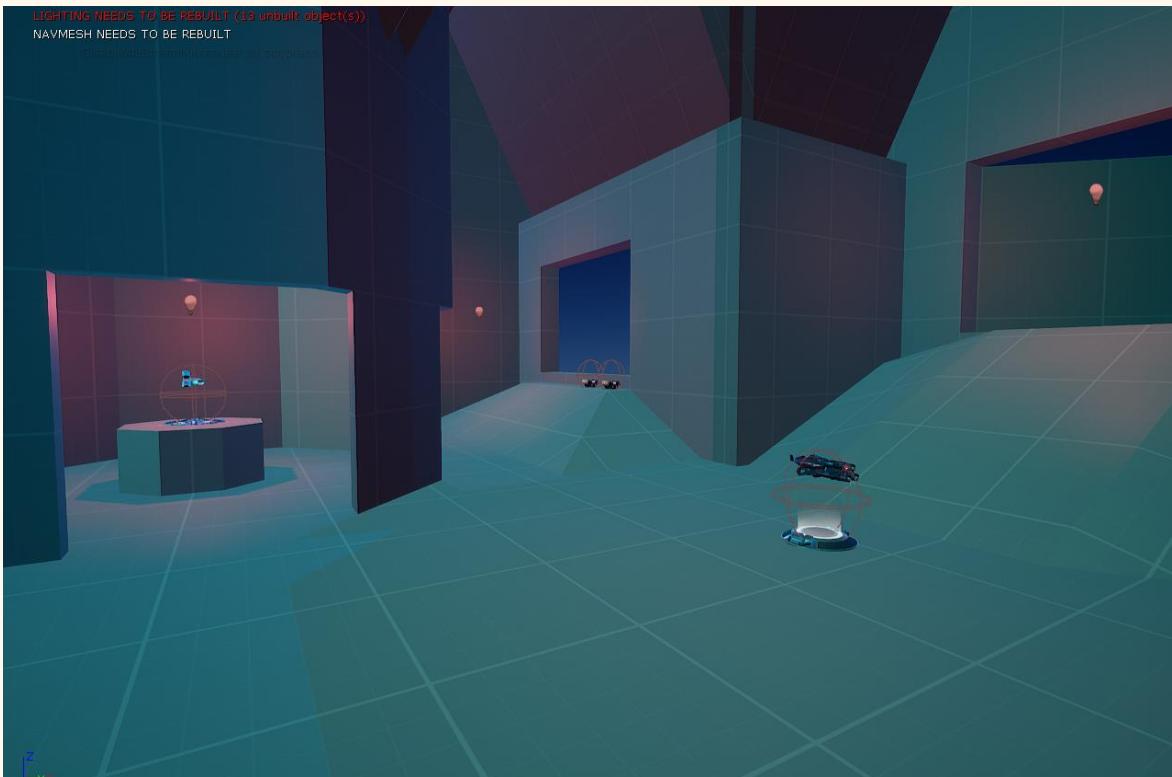


IMAGE 5: NEW ROCKET LAUNCHER AREA

IMAGE 6: NEW ROCKET LAUNCHER AREA, INSIDE

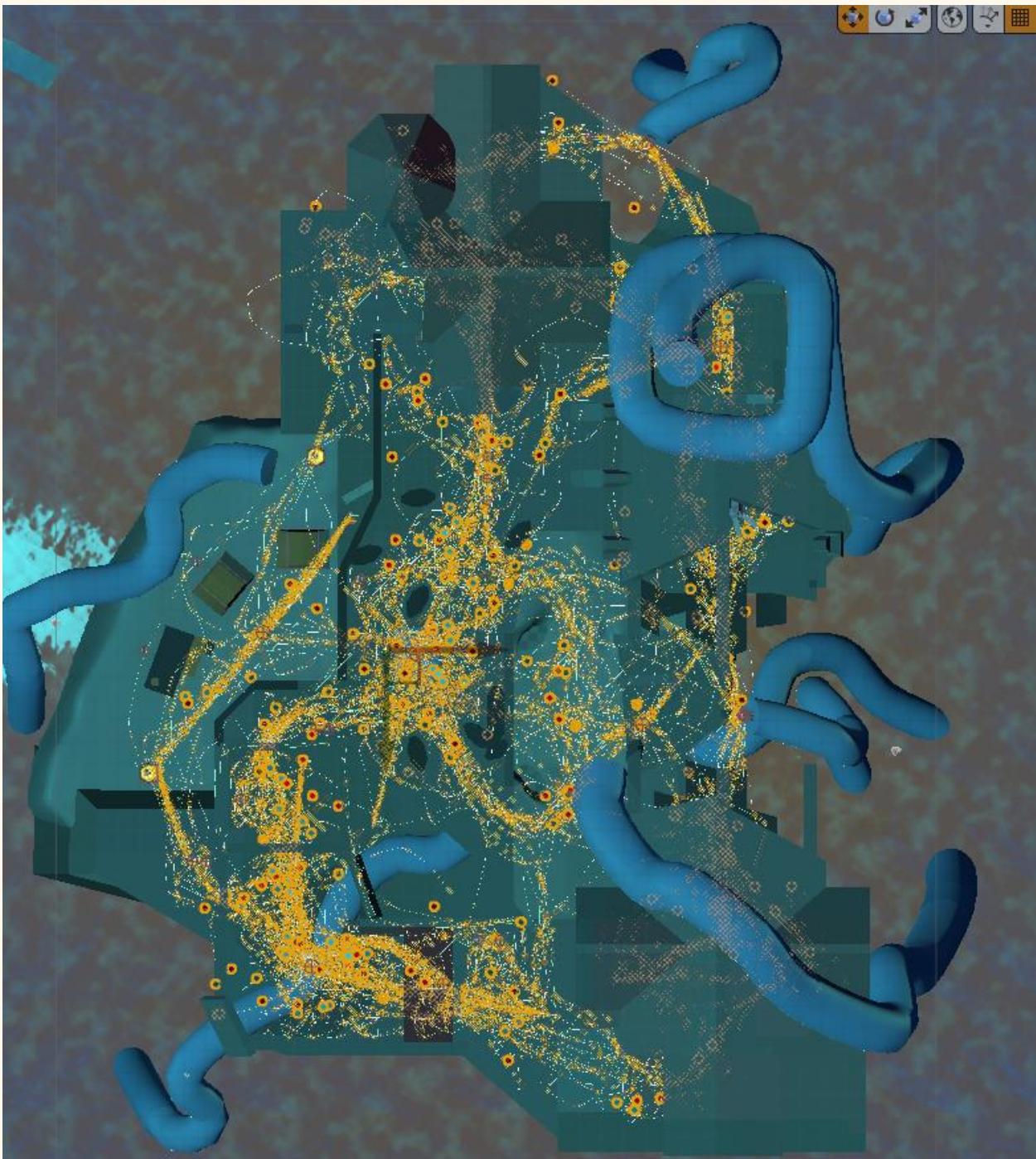


IMAGE 7: HEAT MAP DATA

CHANGELOG:

- Entirely changed the Link Gun area, adding a semi-interior and replacing the bottom geometry with landscape sculpted with the terrain tool.
 - Finally changing the Link Gun area, adding a building with recognizable architecture, attracting players towards it more, and providing more cover, making this area its own combat space more than before.
 - Also added landscape to the Flak Cannon area for consistency in the lower levels.
 - Updated the Minigun area pillars for navigation and flow to direct players more towards the Link Gun area and break long lines of sight, primarily from the Rocket Launcher area.
 - Updated the Rocket Launcher area, making the house more spacious in its length and adding a new room. Also moved the Jump Boots into this room, and added a bay window as entrance for recognizable architecture and somewhat of a choke point.
 - The Rocket Launcher area was too small and had too little cover. Players often shot rockets at the wall behind an enemy to kill them, which was frustrating for the one being killed. Players also often blew themselves up because of lack of space. That is now fixed. The door towards the Minigun area is also smaller now, to increase the Minigun's power there.
 - Replaced both armor pickups in the Grenade Launcher area and area behind Rocket Launcher area with a less powerful armor pickup.
 - Dragged the water way down and made it into a death pit, instantly killing the player if they fall down.
 - Earlier playtests showed this was preferable for players.
-

SUMMARY OF PLAYTESTS PERFORMED:

- This version was playtested with the teachers.
 - Rocket Launcher area is the most liked area by far, having 44.4% of votes for favourite area, and 0% votes for least favourite area. Making the area more spacious seems to have fixed the issues players were having in this area.
 - Grenade Launcher area is by far the least favourite area, with 44.4% of votes for least favourite area. 22.2% of testers had no area they disliked. This area heavily needs improvement.
 - The general consensus is that there are enough health and armor pickups. Some testers do still feel there are too little of both.
 - 55.6% of testers found that some spawns resulted in them consistently getting killed before picking up a weapon. This is also a major issue that needs to be fixed for next time.
 - There are quite a few places where the player can get stuck in geometry.
 - The spawn points tend to result into a lot of backstabbing happening because of the flow and direction of the spawn points. They don't seem to be placed correctly relative to each other.
 - Players falling to their death is less annoying than having to swim back, however testers have suggested placing a safety net of some sort at some places, especially at wall dodge routes.
 - The scale of the level seems too big in some places, primarily in connecting routes and the difference in height in the lower areas.
-

VERSION 06: WHITEBOX FOURTH ITERATION

IMAGES:

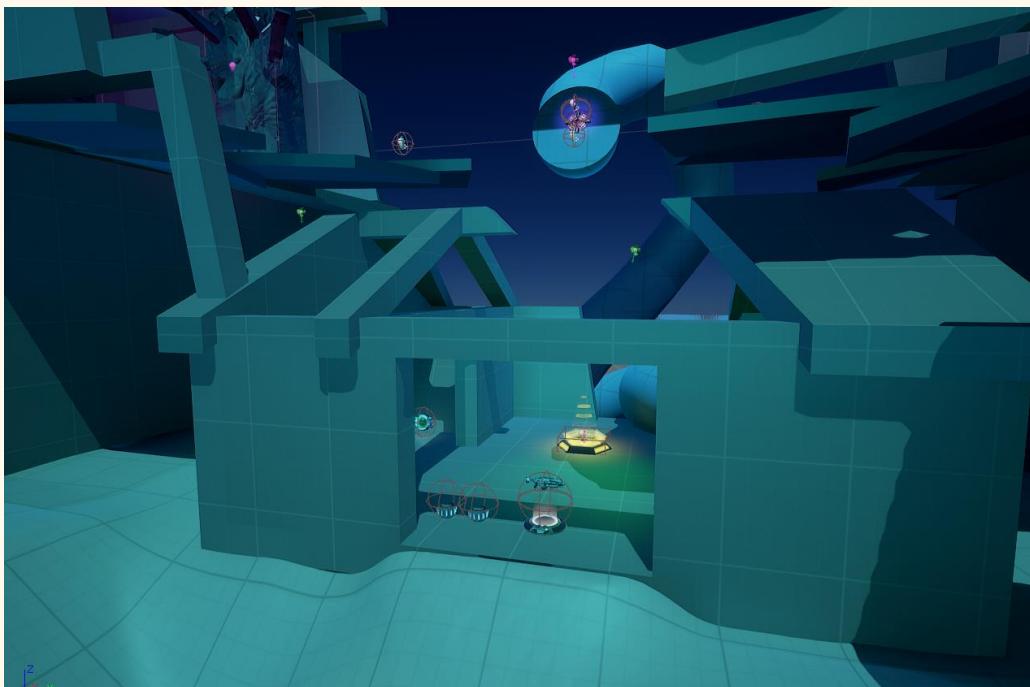
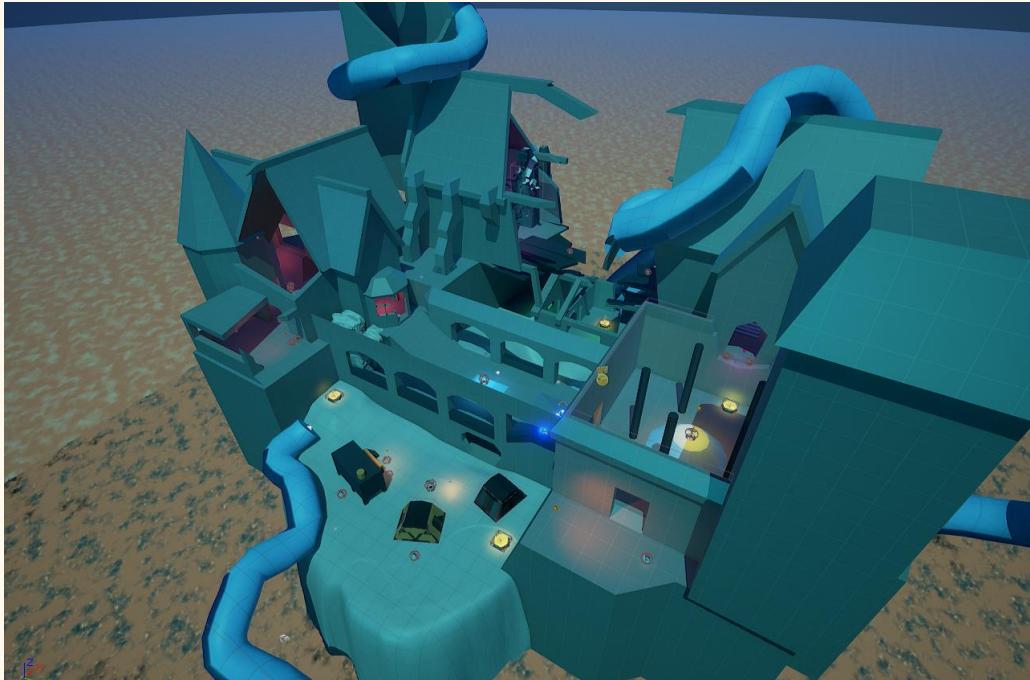


IMAGE 1: OVERVIEW

IMAGE 2: LINK GUN AREA

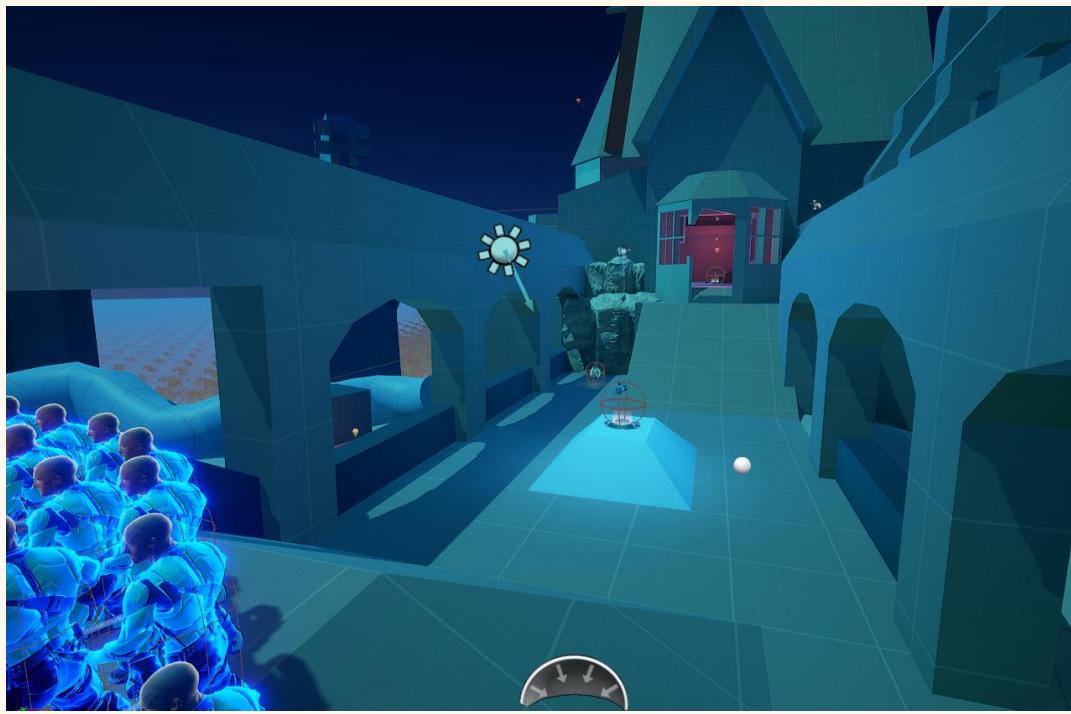


IMAGE 3: MINIGUN AREA

IMAGE 4: FLAK CANNON AREA



IMAGE 5: GRENADE LAUNCHER

IMAGE 6: NEW ROUTE CONNECTING GRENADE LAUNCHER AND SHOCK RIFLE AREA

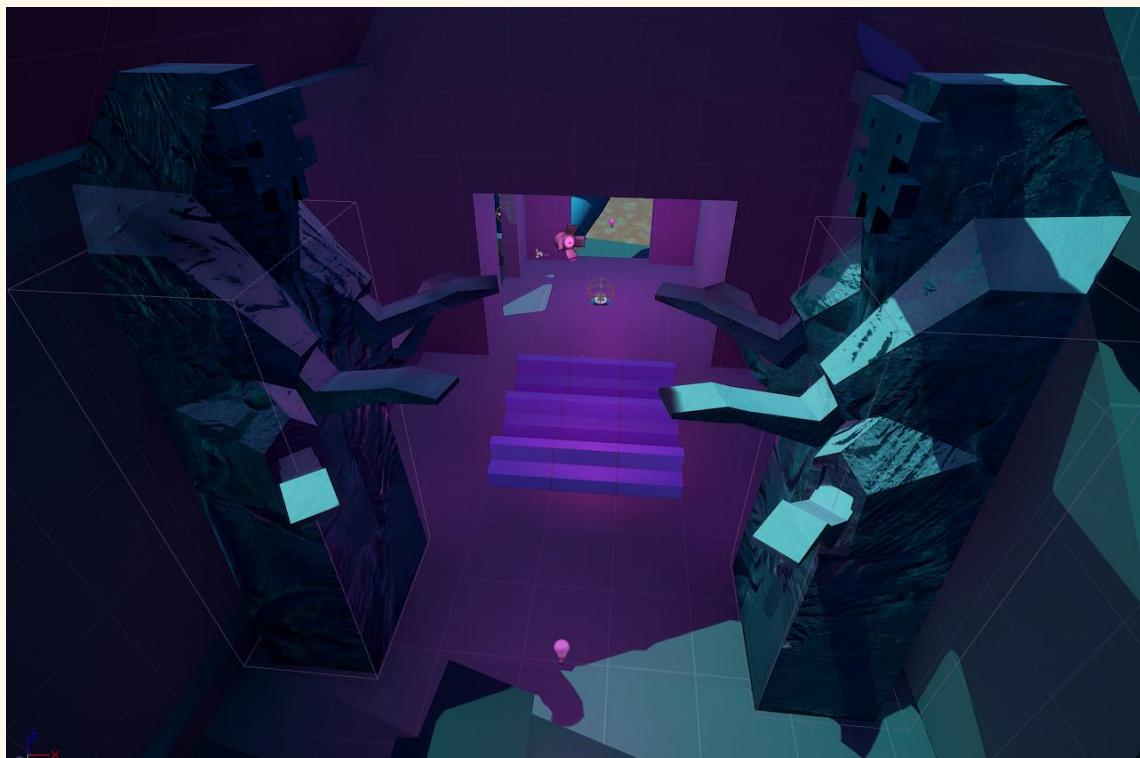
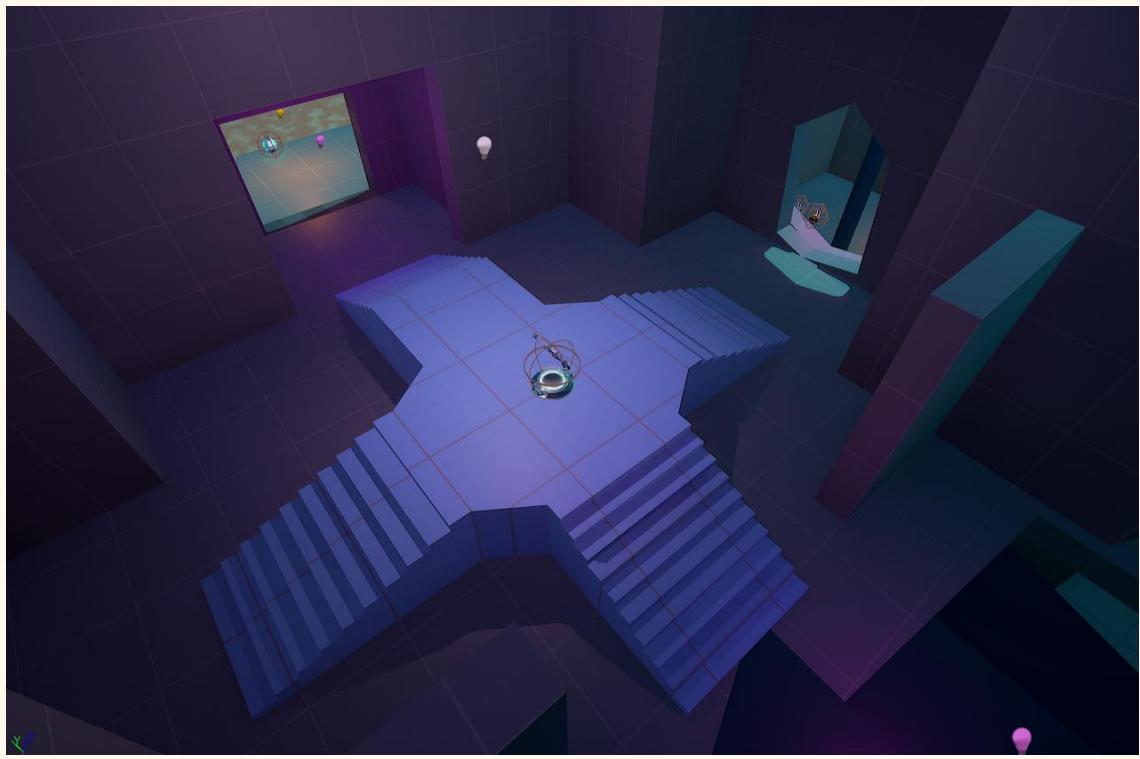


IMAGE 7: SHOCK RIFLE AREA #1

IMAGE 8: SHOCK RIFLE AREA #2

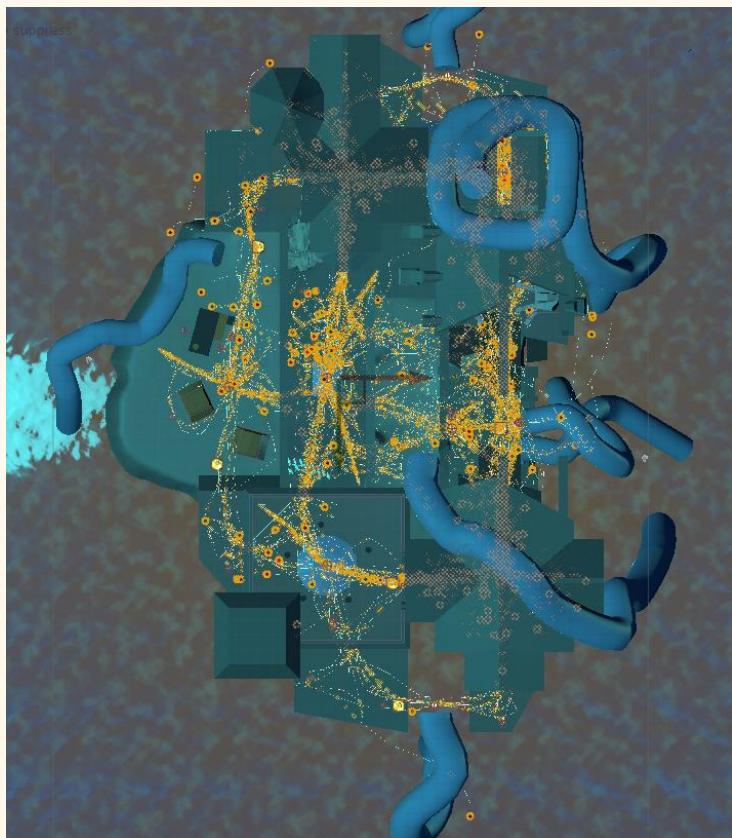


IMAGE 9: NEW SPAWN POINT PLACEMENT AND ORIENTATION, RELATIVE TO EACH OTHER AND WEAPON PICKUPS

IMAGE 10: HEAT MAP DATA

CHANGELOG:

- Updated the Minigun area, adding recognizable architecture, making the road narrower and removed the pillars. Also moved the Rocket Launcher area closer.
 - A narrow hallway suits the Minigun well; players only have to aim in a general direction, and the small spread and restricted movement of the enemy will do the rest.
- Moved the Link Gun area higher relative to the Minigun area. Also made the house wider, and added a jump pad that shoots straight up between the two shock rifle areas - high enough for the player to choose which side they want to land on.
 - The Link Gun area is now more in view, encouraging players more to visit this area. A Jump Pad also offers players a new way to reach the Shock Rifle areas; it goes against my original plan, but without it, flow would be too off and the Shock Rifle areas would be too underpopulated.
- Completely renewed the Grenade Launcher area; the room is now square with the weapon on a small platform surrounded by thin pillars. Area is connected to the Minigun area, the Flak Cannon area, and twice to the Shock Rifle #1 area.
 - The Grenade Launcher is best placed at a higher point than the rest of the room, with objects around it so the grenades can bounce off of them. The Shock Rifle area has a good line of sight into the Grenade Launcher area, but the doorway is so small that it's very easy to counter with the Grenade Launcher's right click.
- Added a second route from the Grenade Launcher area to the Shock Rifle #1 area similar to the path at the opposite side of the level at the Rocket Launcher area, including an armor pickup.
- Updated the cover position and orientation in the Flak Cannon area to guide the player more towards the Rocket Launcher area instead of the Grenade Launcher area.
 - A Flak Cannon against a Grenade Launcher just isn't fair; with the updated Minigun area, players are more prone to go to the Grenade Launcher area anyway, so underpopulation isn't an issue anymore.
- Updated the Shock Rifle #2 area with new cover/obstacles in the form of benches and moved the statues, making the room feel less empty.
- Updated the stairs to the platform in Shock Rifle #1 area to better suit the flow to and from the new entrances and exits.
- Reworked the spawn point placement and orientation, improving flow throughout the level and lowering chances of being attacked from behind.

- Made the broken floor pieces between the two Shock Rifle areas longer to make the wall dodge jump easier.
 - Updated ammo placement to prevent camping in one area.
-

SUMMARY OF PLAYTESTS PERFORMED:

- Contrary to previous surveys, the “favourite area” question now allows for multiple answers instead of just one.
 - The Shock Rifle areas were the most popular area with 50% of votes, followed up by the Minigun and Rocket Launcher area with shared second place.
 - 7 out of 8 testers had an area they disliked. The Grenade Launcher area was the least favourite area with 42.9% voting against it, and only one vote for favourite area.
 - The Grenade Launcher area was too open, and the line of sight from the Minigun area was too good for the area to be enjoyable to fight in with the Grenade Launcher.
 - Only 1 out of 8 testers encountered a spawn point where they were consistently killed before being able to pick up a weapon, confirming spawn points have improved a lot. Testers could also confirm that there was a lot less backstabbing happening.
 - There are still quite a few camping or hiding spots that need to be fixed.
 - The lower cave area between the Flak Cannon and Link Gun area is really dark and obstructs vision.
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VERSION 07: WHITEBOX FIFTH (FINAL) ITERATION

IMAGES:

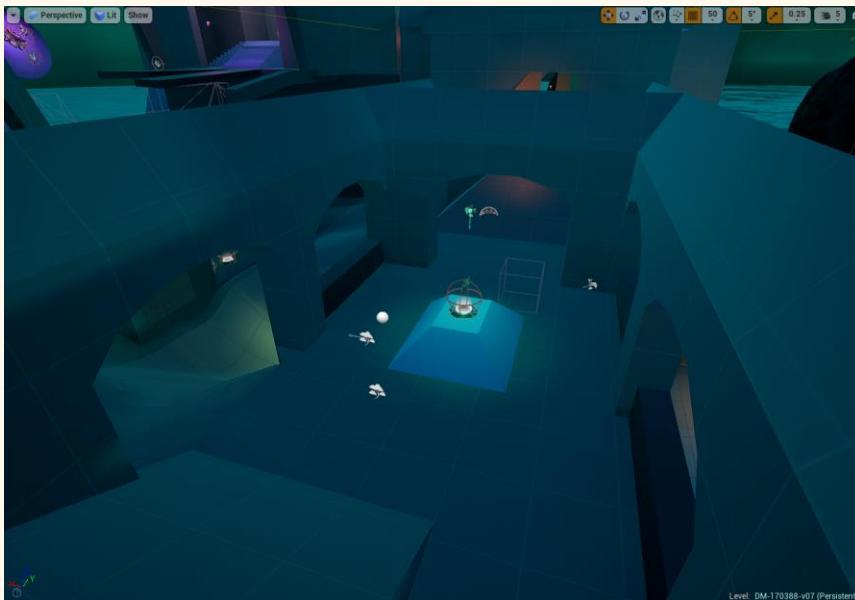


IMAGE 1: OVERVIEW

IMAGE 2: MINIGUN AREA

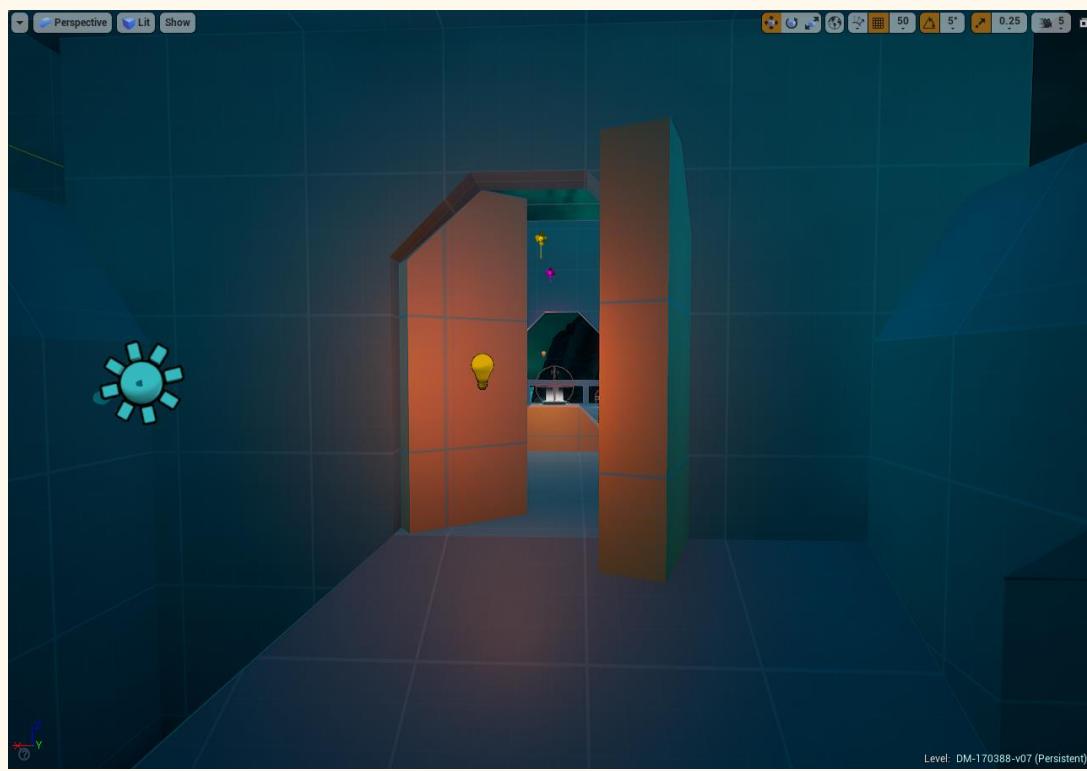


IMAGE 3: GRENADE LAUNCHER AREA

IMAGE 4: GRENADE LAUNCHER AREA - MINIGUN AREA CONNECTOR



IMAGE 5: PATH BEHIND GRENADE LAUNCHER AREA

IMAGE 6: SHOCK RIFLE AREA #1

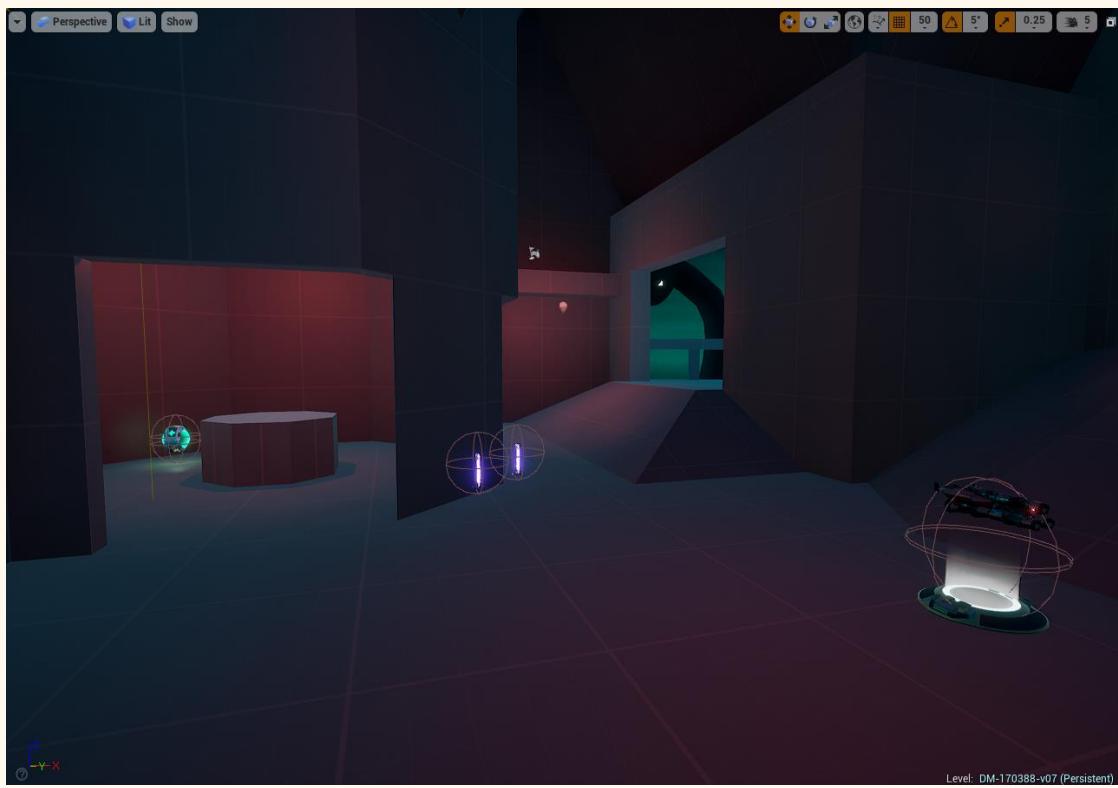
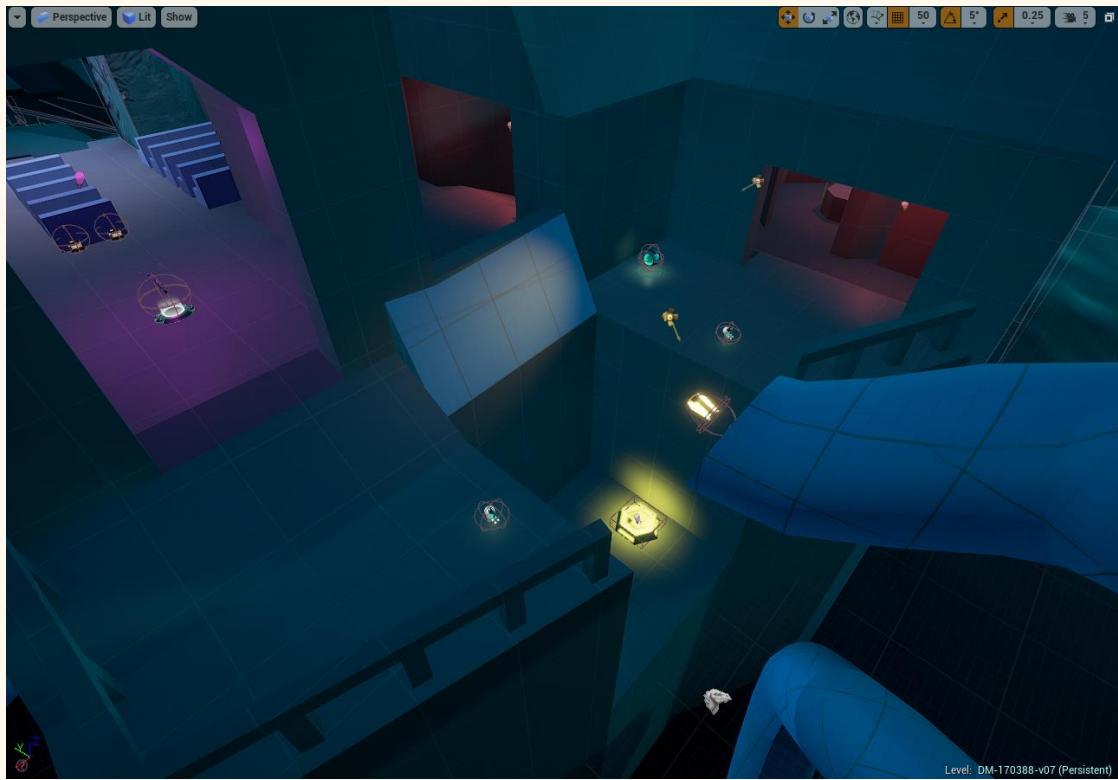
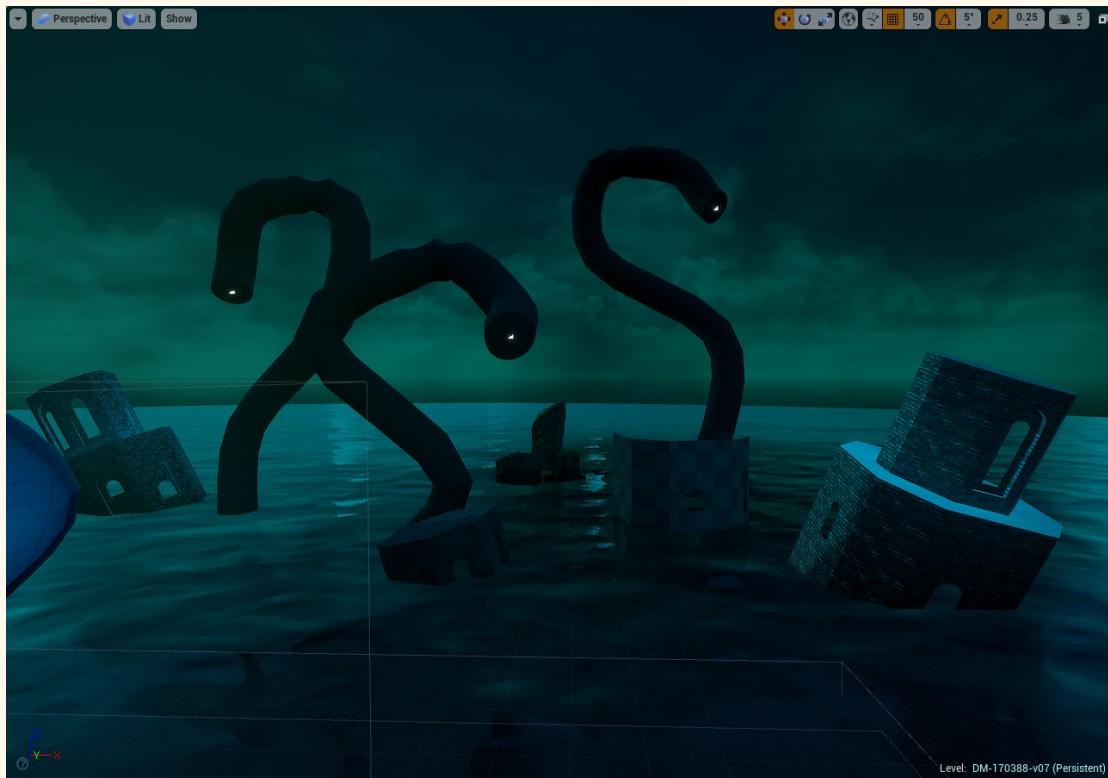
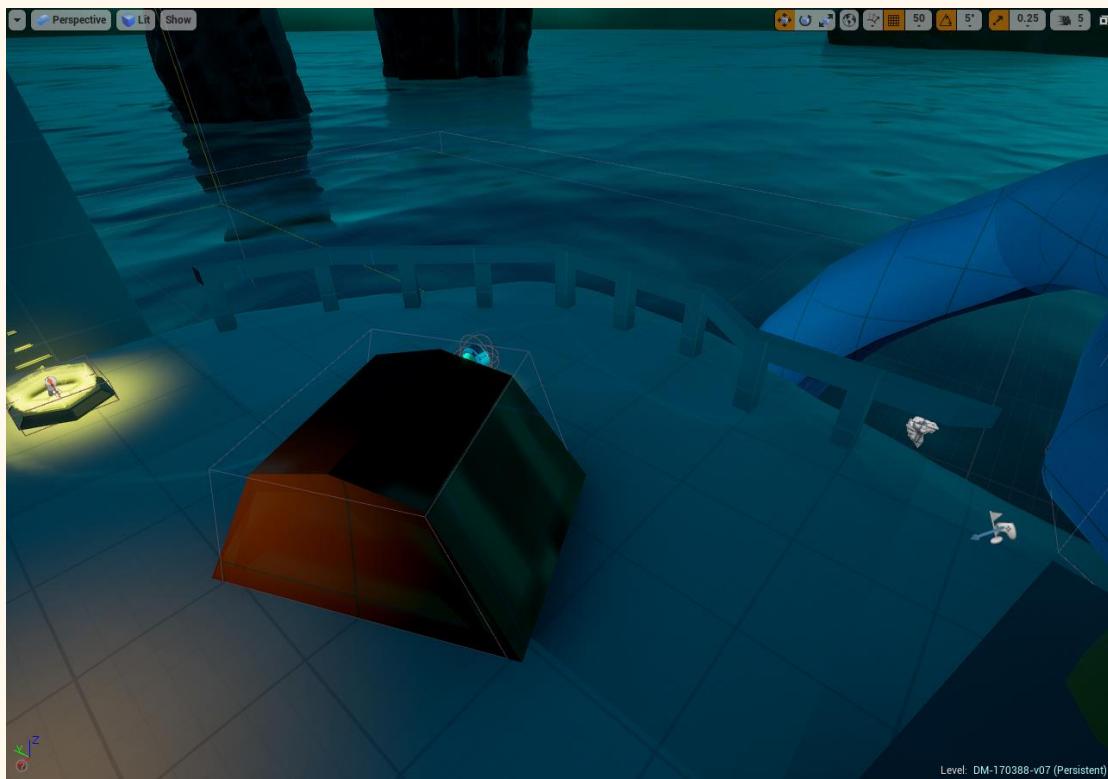


IMAGE 7: PATH BEHIND ROCKET LAUNCHER AREA

IMAGE 8: UPDATED JUMP BOOTS ROOM



Level: DM-170388-v07 (Persistent)



Level: DM-170388-v07 (Persistent)

IMAGE 9: LANDMARK BEHIND PATH BEHIND ROCKET LAUNCHER AREA

IMAGE 10: FENCES AROUND FLAK CANNON AREA



IMAGE 11: HEAT MAP DATA

CHANGELOG:

- Updated the Grenade Launcher area again, making the room smaller and removing/updating cover.
 - The Grenade Launcher area's biggest problem was its scale. In combination with it now being smaller overall, fences have been placed in such a way that there are two narrow paths with the Grenade Launcher still at the centre. The idea was that this allows a player with the weapon to easily predict enemy movement, and to make full use of the weapon's right click. In addition, double doors have been added that block the view from the Minigun area, so players don't have too strong of a line of sight into the Grenade Launcher area, while the Grenade Launcher can still bounce grenades off those doors into the Minigun area.
- Added one additional arch to the Minigun area to block the view from the Rocket Launcher area.
- Made the benches in the Shock rifle area thinner, and added two more rows to the sides.
- Removed the Jump Boots entirely.
 - Players could break the level too easily with them, and they barely brought anything new to the table. They wouldn't really be missed.
- Added fences around areas where players could fall off the level.
 - This was highly requested by playtesters, as falling off often felt frustrating.
- Updated overall lighting to improve theme, and added detailed, coloured lighting to the cave area and Grenade Launcher area, plus the path leading to the Shock Rifle area.
- Added distant landmarks in the ocean.
 - The paths near the Rocket Launcher and Grenade Launcher areas leading to the Shock Rifle areas looked fairly similar; to make sure they were distinguishable, I placed two kinds of landmarks near them. Near the Rocket Launcher area, I added huge, shadowy tentacles destroying a sunken city, while near the Grenade Launcher area, I added sharp, grey rocks coming up from under the sea. The Flak Cannon area already had the giant monster as landmark. There is no need for a landmark behind the church, as the church inherently is already a focal point, and the players generally don't see behind the church anyway.
- Added a Jump Pad underneath the wall-dodge for armor near the Rocket Launcher area.
 - Adding a safety net for less skilled players would prevent them from getting frustrated if they didn't make the jump.

- Added blocking volumes in some tight corners that could act as hiding spots, and on top of the Link Gun building to prevent players from hiding on the top and underneath the church.
 - Added blocking volumes in tentacles where they had no collision, or on top of them to prevent players from standing on them.
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SUMMARY OF PLAYTESTS PERFORMED:

- The Grenade Launcher area's fences need to be tweaked so people don't get stuck anymore. I can add some openings in them so players can easily escape those corners.
 - The Shock Rifle area needs more cover. I'm thinking of dividing the rooms in two, so there is a clear disconnect between the outside part where players can have Shock Rifle battles, and the inside part where it is safer to move through.
 - I'll remove some of the blocking volumes from the top of the Link Gun area to allow players to stand on it partially. I will also make wall-riding around the Minigun easier, and heighten the Flak Cannon building a tiny bit to allow sliding underneath it. However, I'll have to see whether this causes more hiding spots to appear.
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