Fissure - Level Design

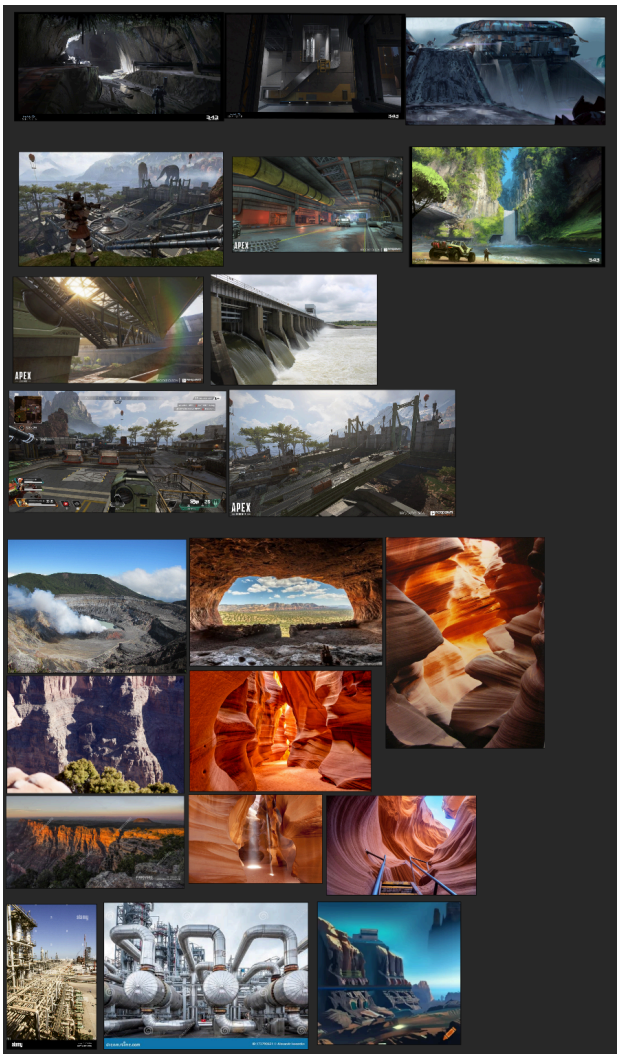
A third person arena shooter level using the Lyra package in Unreal 5.

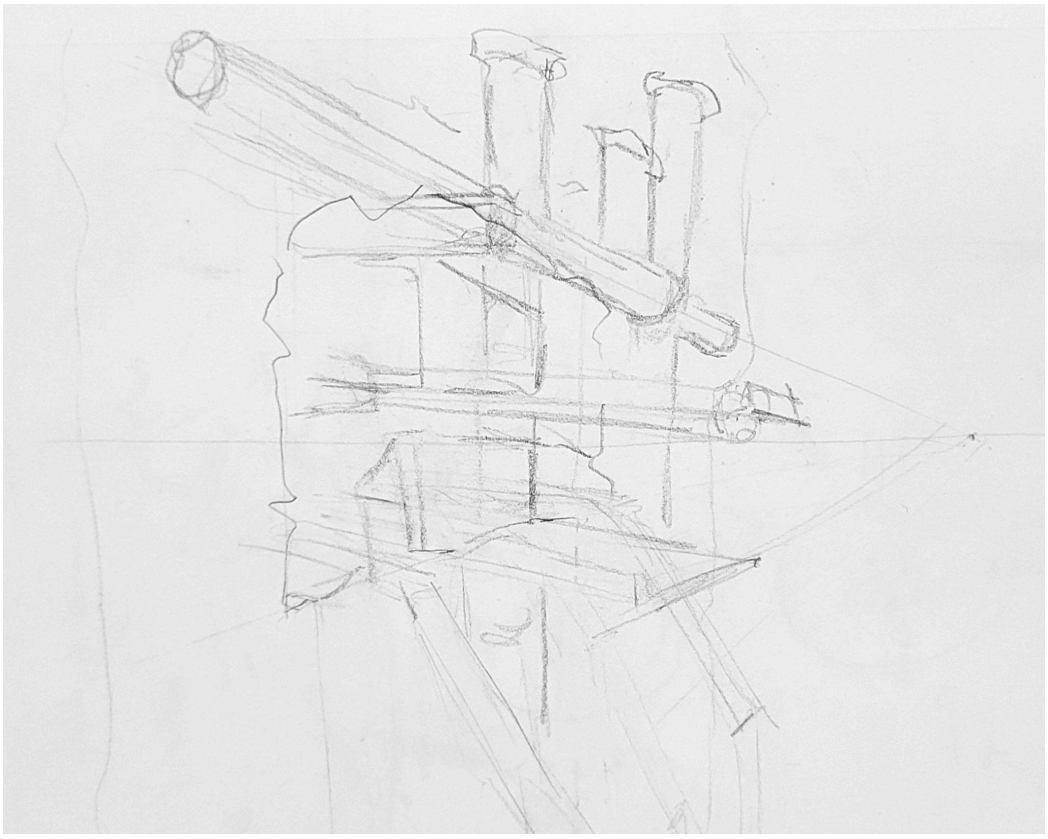
Idea

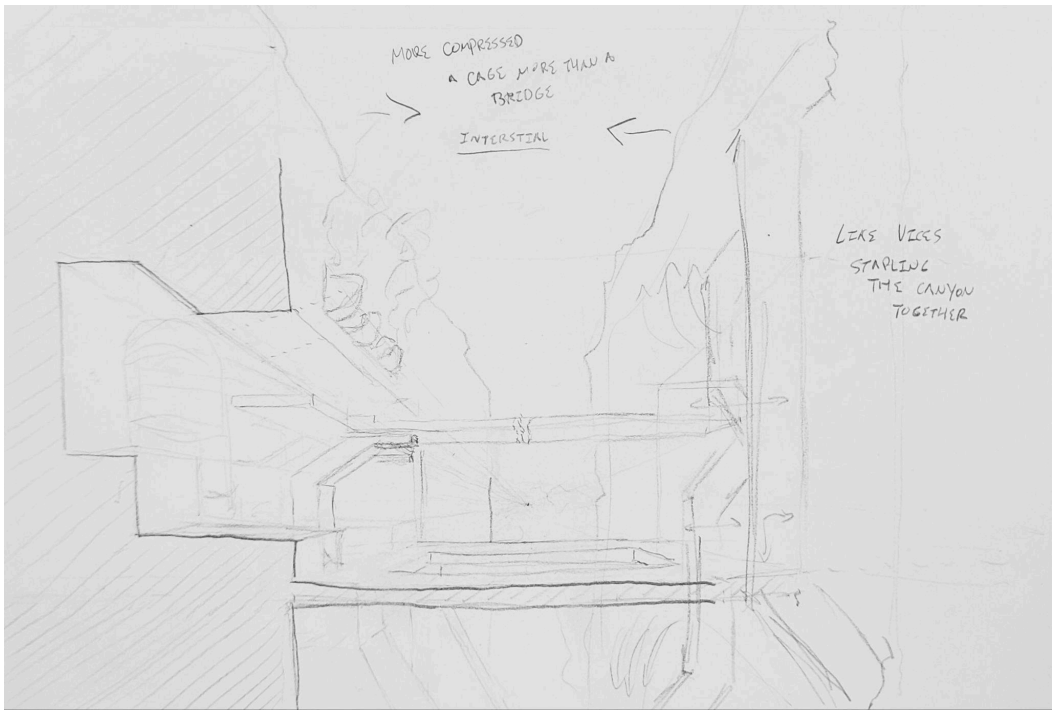
I want to design a simple third person shooter arena utilizing the Lyra package. The concept revolves around a refinery embedded in a cliff ruptured by geological activity. The architecture connects the two faces of this “fissure” where players will battle.
Concepts I want to explore in this level are:

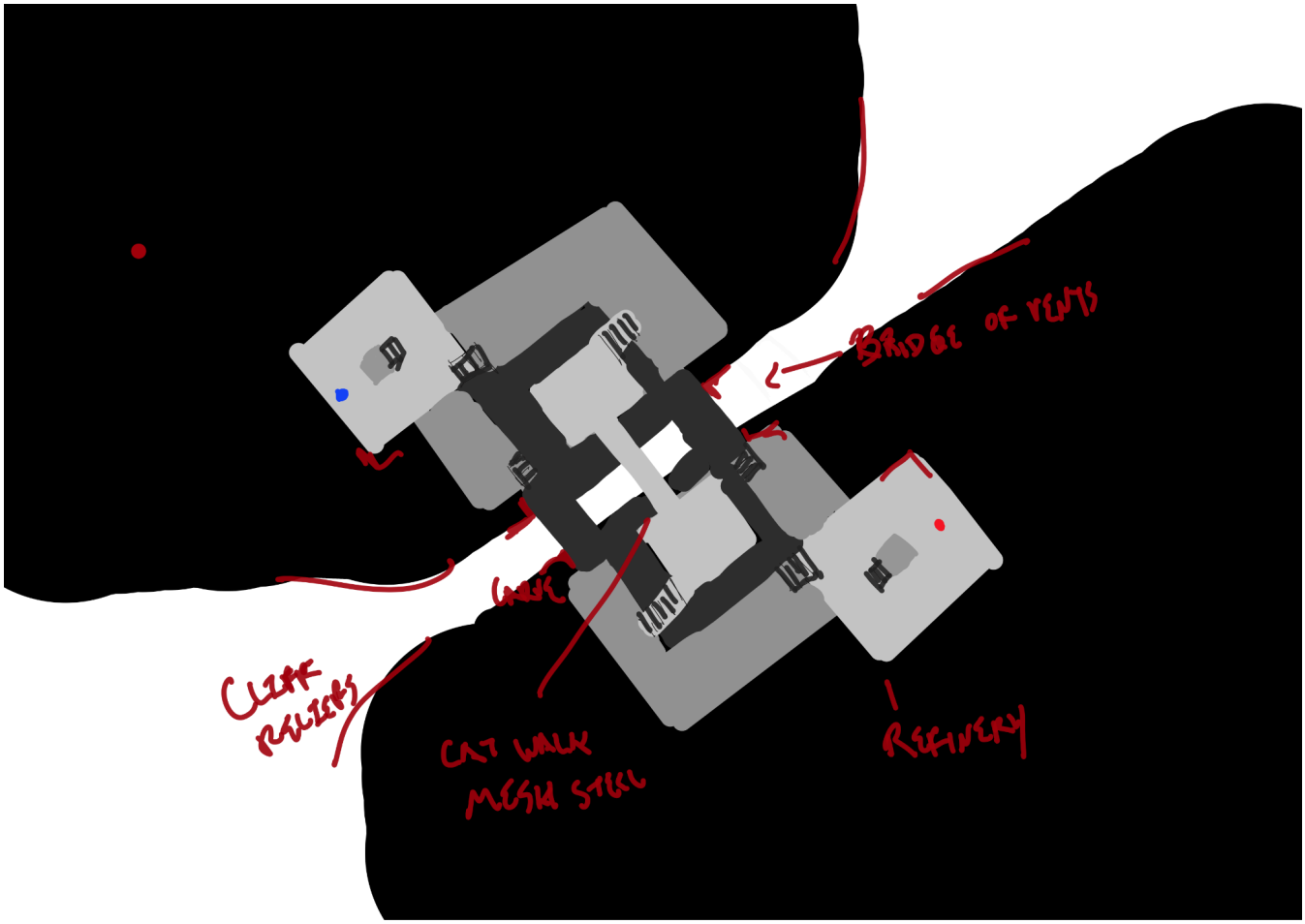
- Symmetry
- Design for arena-style shooter gameplay
- Build-from-scratch design (no lore to assist with environment/gameplay)

I’ve had a loose concept of Fissure for a while and feel now it’s time to try it out. From the reference, I’m inspired by the canyons of Arizona and Utah (particularly Antelope canyon and Bryce). I imagine a sci-fi architecture reminiscent of Halo and Apex Legends embedded in this cliff. The purpose of this architecture is to refine and mine the resources of this cliff that caused the fissure and reflect that in the design. Refinery, dam, and catwalks will be key architectural pieces that reveal vistas in moments throughout the level.



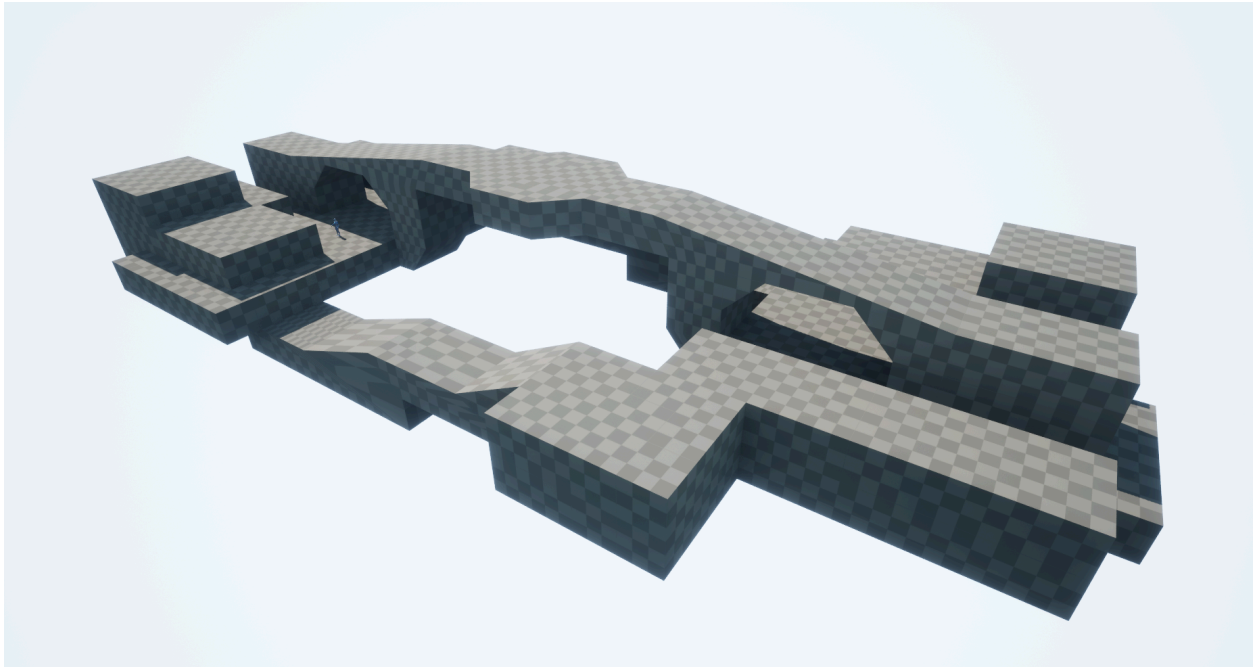


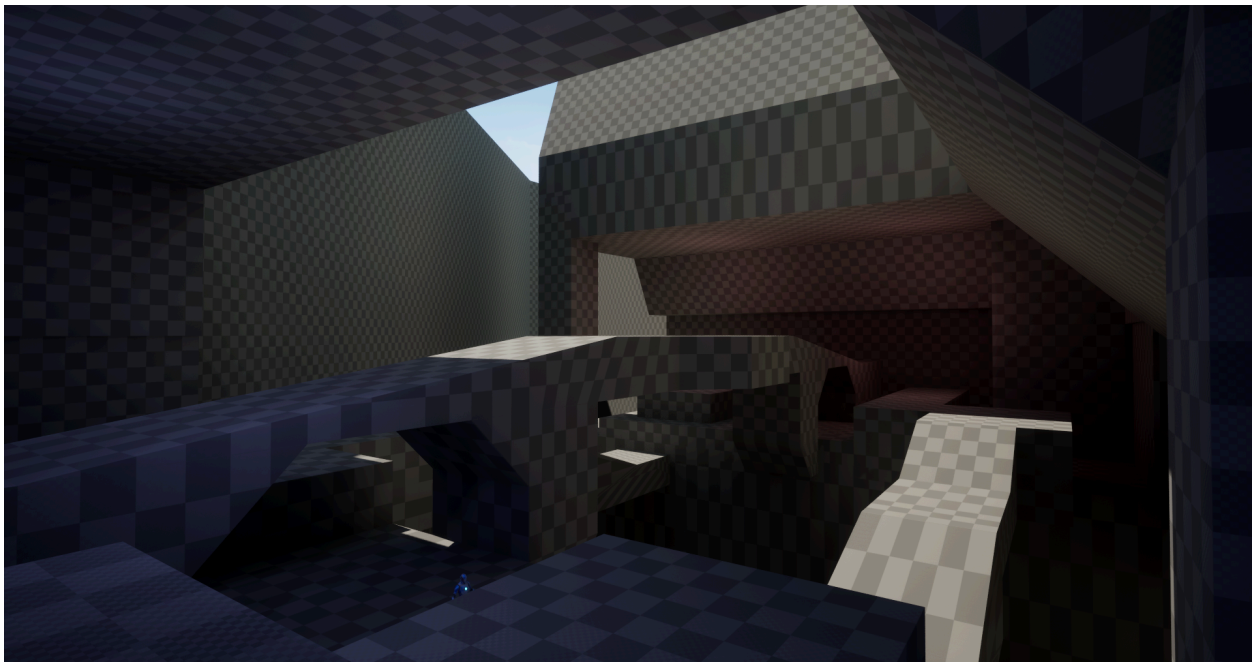

MORE COMPRESSED
A CAGE MORE THAN A BRIDGE
INTERSTIAL
LEAS VIGES
STAPLING
THE CANYON
TOGETHER

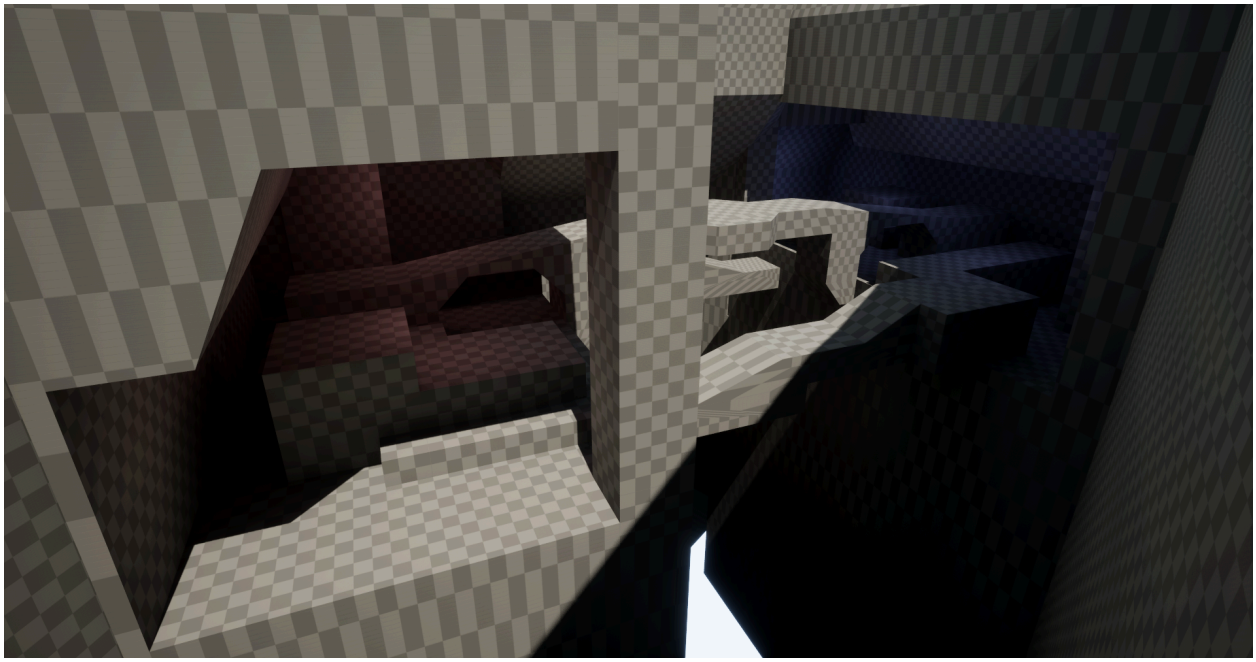


With a rough idea and some conceptual sketching, it’s time to dive in.

The Blockout



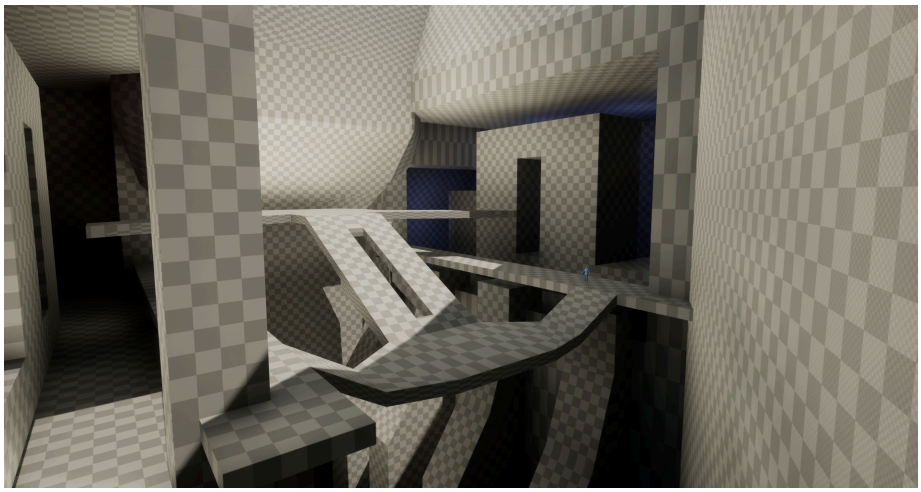


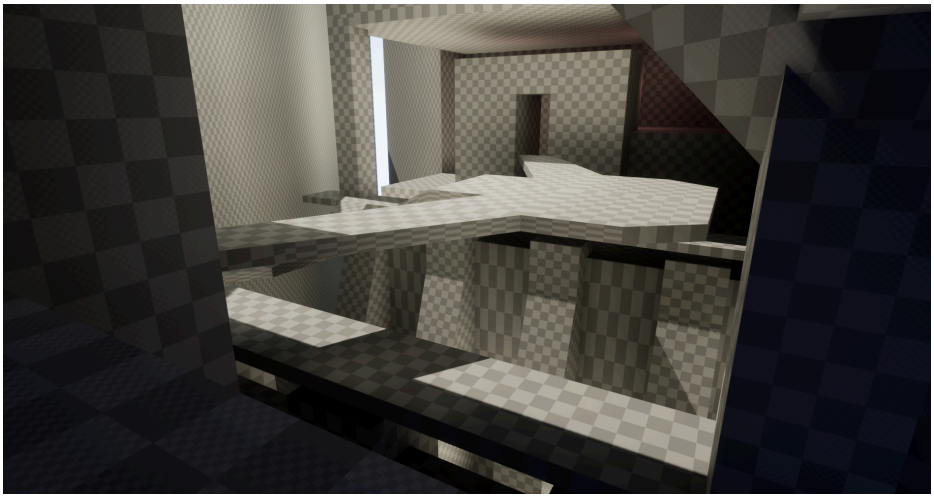


First of all, cube grid is amazing.

Constructing the early blockout was a way to get something going. I'm struggling with the connection between the two cliffs, but after getting something down in 3D, I found a space I'm enjoying. The space that will be playable is far too narrow at the moment, however the bridge concept across a ravine looks nice. I also decided to break up the symmetry in the background - the playable space will still be symmetrical but the extraneous parts have landmarks to differentiate red and blue sides. Blue will be more enclosed while red will have a view into the expanse. Both of those "viewpoints" will still have the same fall off areas to keep the symmetry, just different visuals.

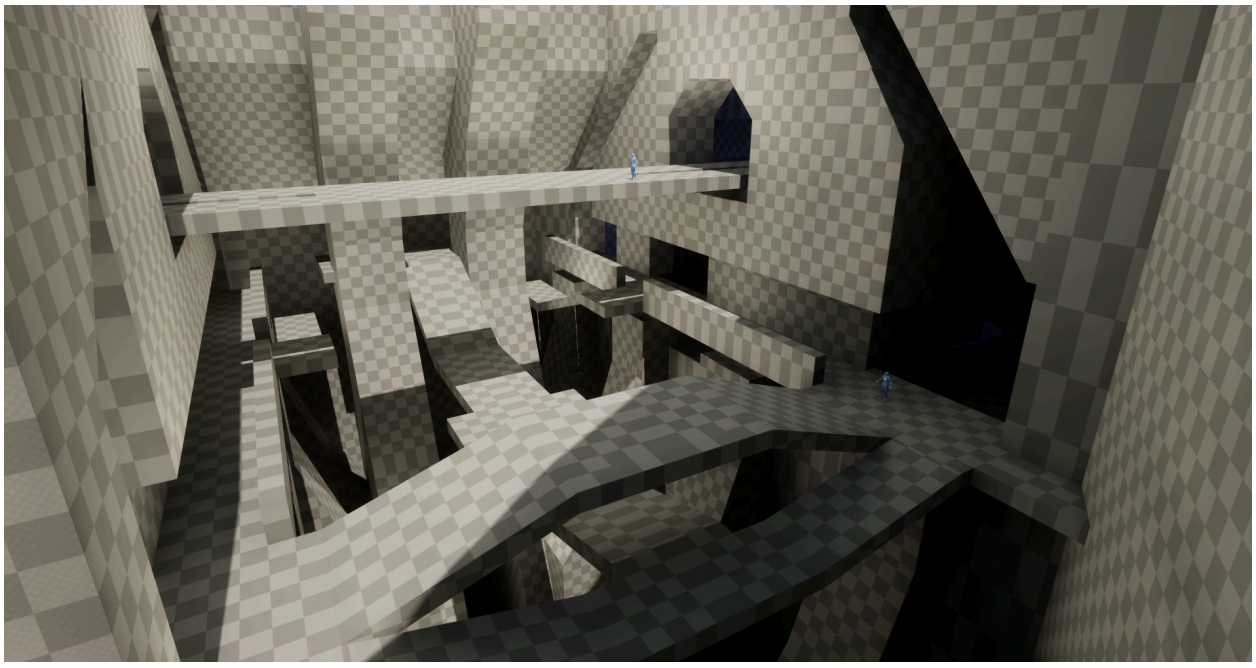
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For some reason something's not working with the connection between the gaps. I liked the initial concept but the bridge felt more like a highway into a tunnel and not a smaller scale catwalk/platform. The most recent version solves the scale but I'm not sure I like the rotated orientation. I think I'll scrap the bridge until the base/cavern sections are fleshed out more and then attempt something again.
Not all for naught though - starting with the bridge gave me a basis for the distance of the bases/caves as well as some environmental inspiration.

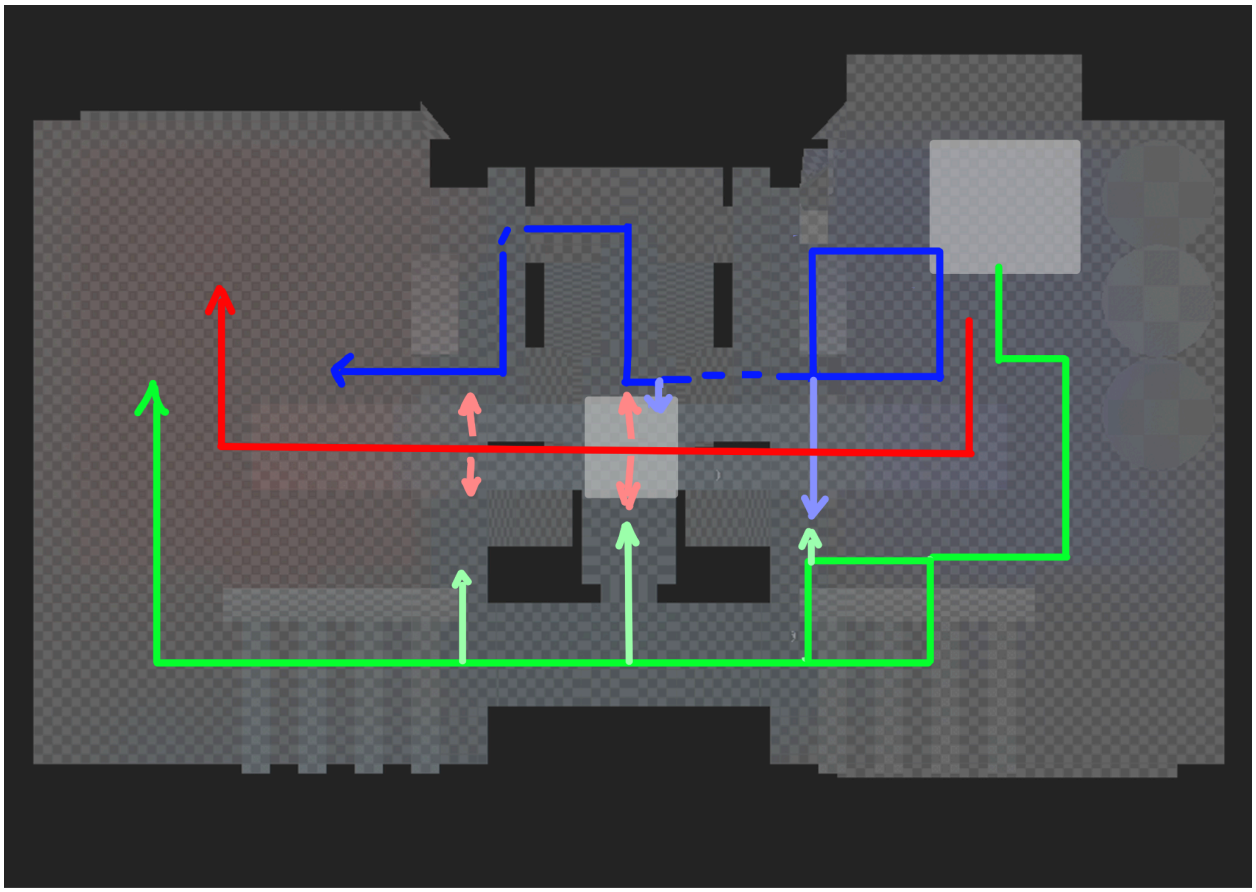
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I know I stated I'd look at the base structure and then circle back to the bridges… but something clicked.



I think I'm liking the center now. I'm hoping the flow works like this:

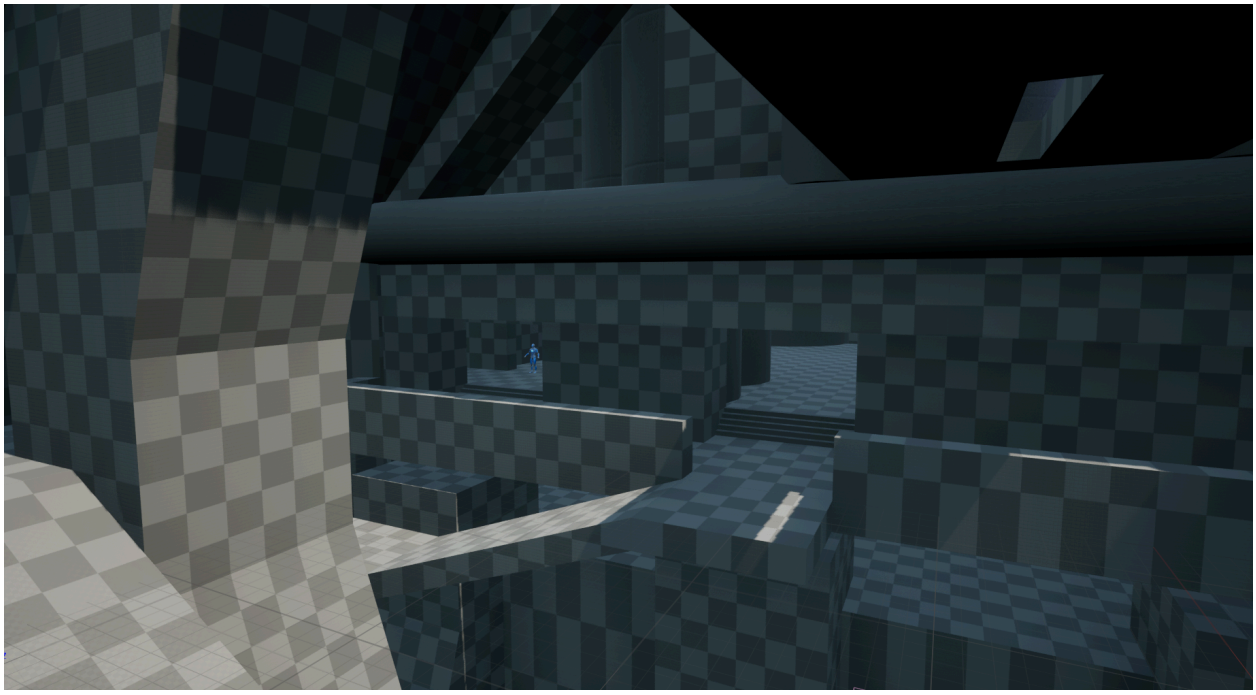
Teams start in their respective bases. They push out across the bridge via three main routes: A high exposed but quick route, a long but more covered main route, and a risky but rewarding central route with jumps. The primary route engages the entire map in a U shape.

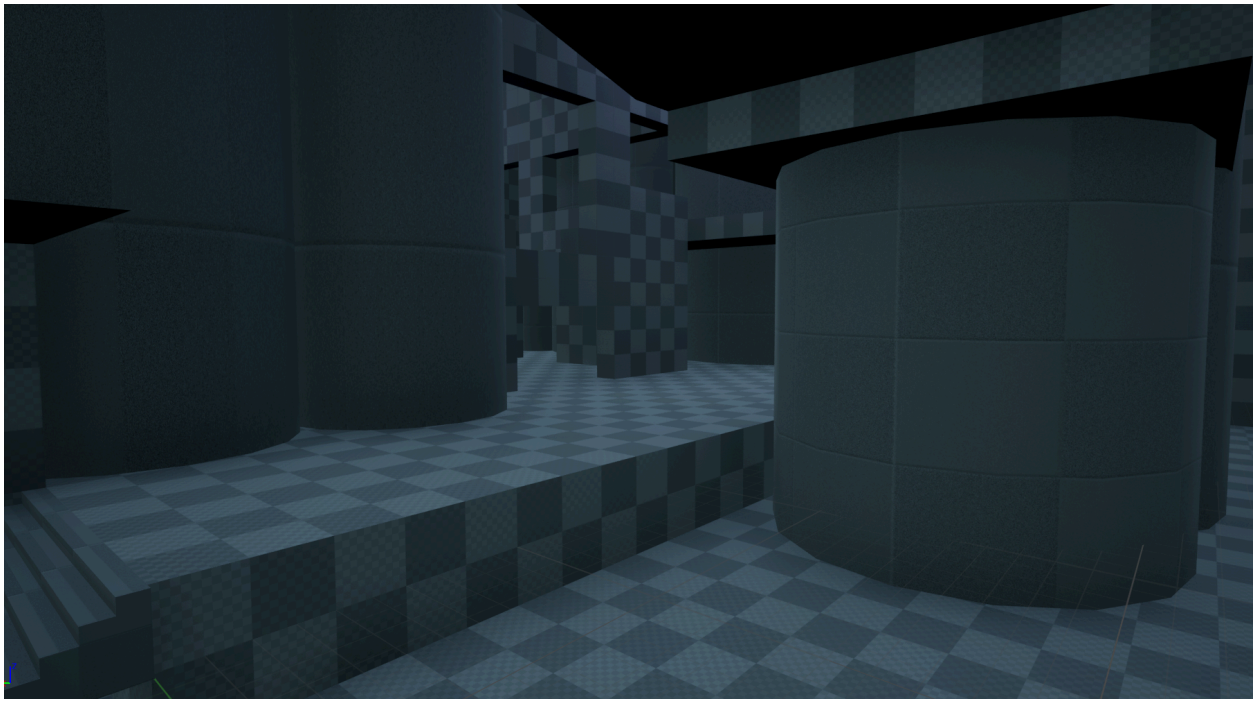
Below is a sketch of the routes to help define how to develop the interior.
Note: Routes sketched as if attacking from Blue to Red side.

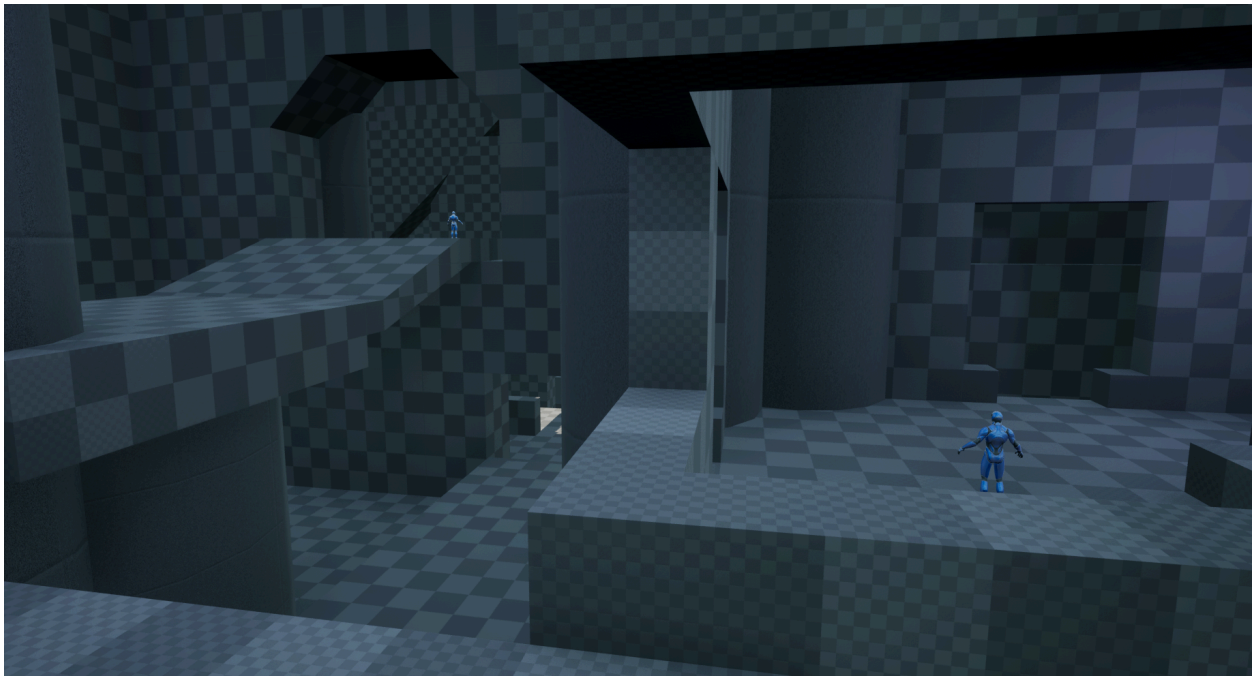


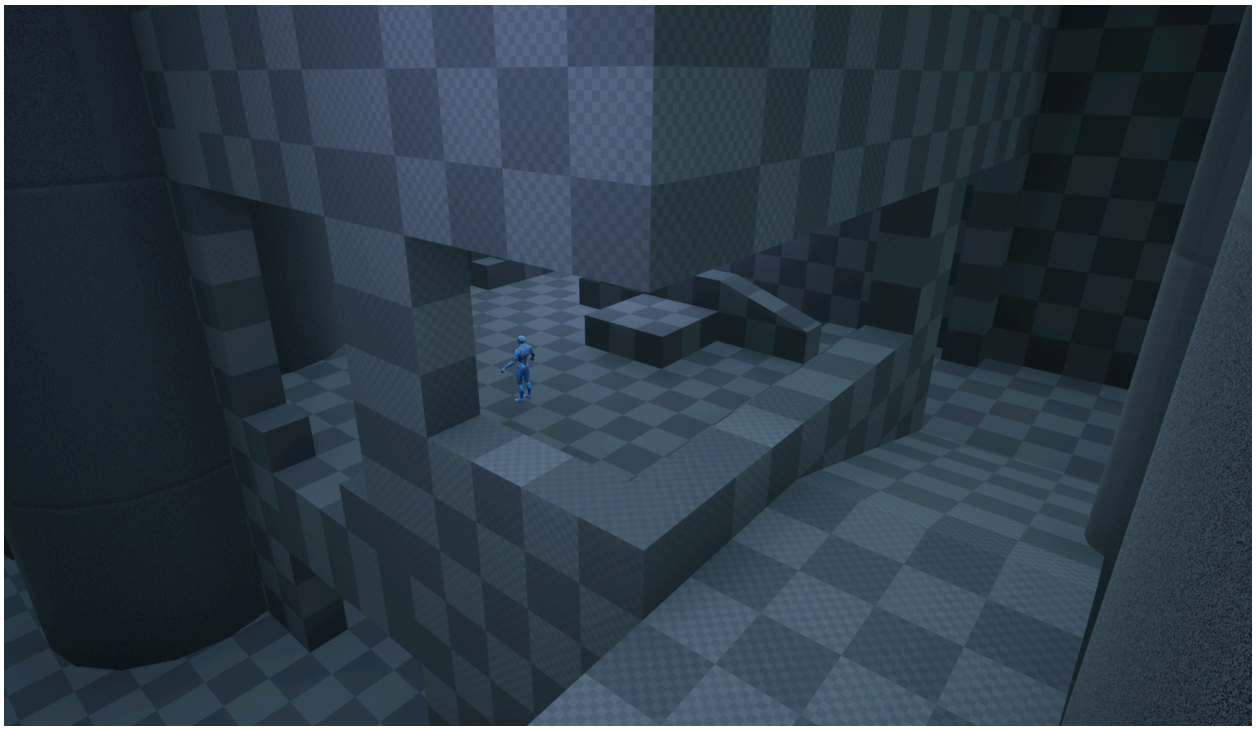
Red is the high route, Green the primary long route, and Blue is the tertiary risky route. The lighter colors indicate branch off points the players may take to switch routes (jump from bridge, to blue route, etc).

Onto the base blockout:









The Realization

Found this resource: https://www.youtube.com/@stevelee_gamedev/videos
There's the perspective that level design must have gameplay. This was easier to show (back in the day) when the only available level editors were embedded in games that have all of the

functionality and assets available to the creator. Now-a-days, we have these powerful game engines to build from scratch - so it's incredibly daunting to need to show "gameplay" if the toolset doesn't include the gameplay you're hoping to build for. I've only been doing white-boxing with "ideas" of how the game should play out, but it seems I need to actually show that gameplay.

Makes sense, and I understand the sentiment of creating within an editor that has everything for me as if I was going to make that game (hammer for tft, forge for halo, etc). However, it just feels hamstrung creatively and that I should be learning game engine toolsets that will be utilized broadly.

Note: This begs the question about my previous Elden Ring project… seems like a lot to get souls-like gameplay in there, but maybe that's what I'm missing.

Anyways, I guess I need to switch gears again. Fortunately I was already building with UEFN in mind (generic third person shooter gameplay). What I need to do now (and for continuing projects) is to build the gameplay immediately!

I've been almost too caught up in environment art and how that ***may*** dictate gameplay without any of the actual meat. I guess I need to bite the bullet and sacrifice some creativity and work within the game bounds of whatever plugins I can find (i.e. whatever the limits are of the market assets for fps, rpg, puzzle, etc…).

With all that being said, the next step is to get UEFN logic working and tested - even with the un-resolved areas. Maybe doing that first would have given me a better perspective of how to design the bases…

Gameplay

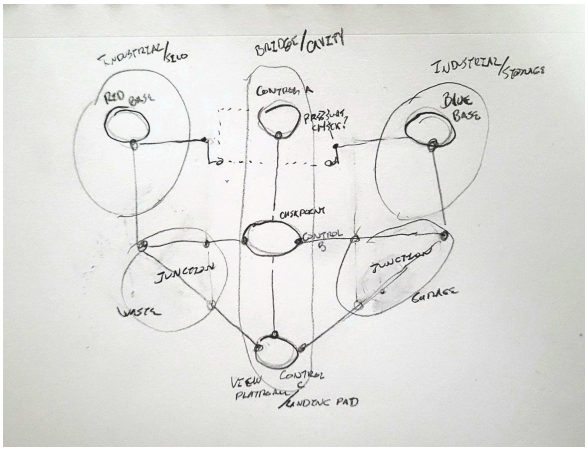
Quick initial gameplay test

Oof, rough. Tried adding control points to give the AI a reason to move but they keep clumping at the entrances across the map so it's hard to get a feel for the flow (besides just being buggy ai).
At least there's some gameplay to start.

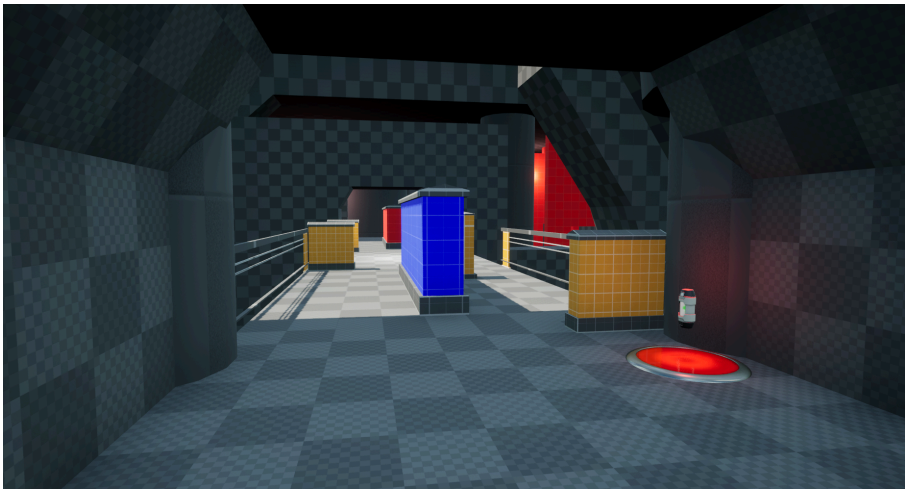
It's made me realize I've now done the opposite of my previous project. I've made things too big! There's no real cover yet either.

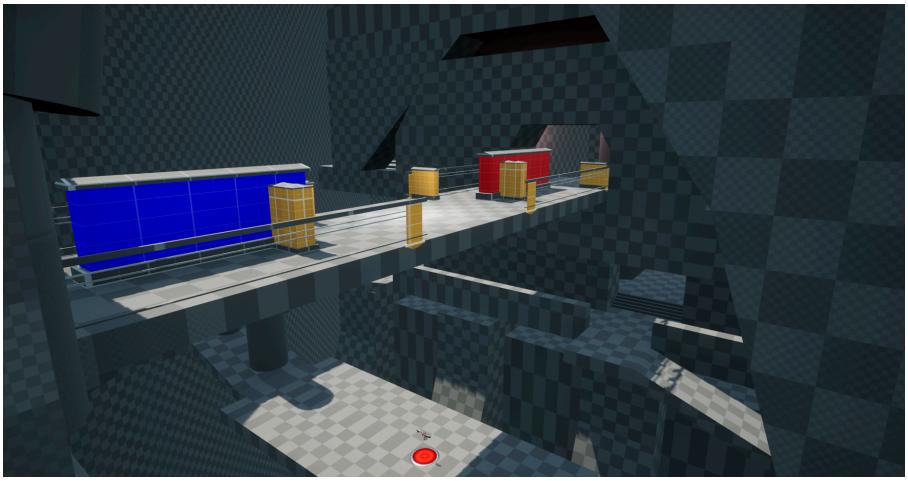
The Hiatus

After a break and some over-thinking, I'm back at it. Started with a node sketch to figure out what's wrong with the layout.



Added some powerups and bridge cover. Figured out some editor hiccups as well so keystrokes work for things that didn't before. Also the ai works slightly better as well.



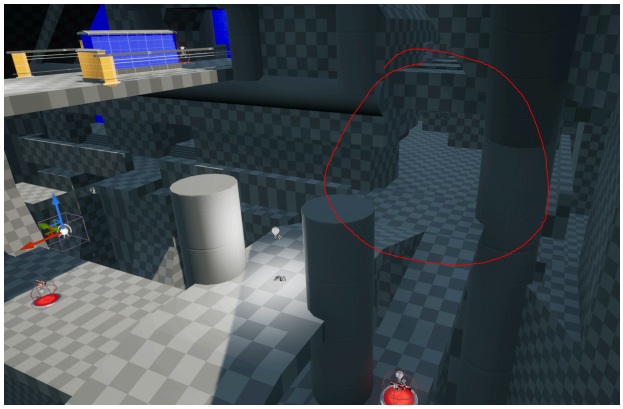


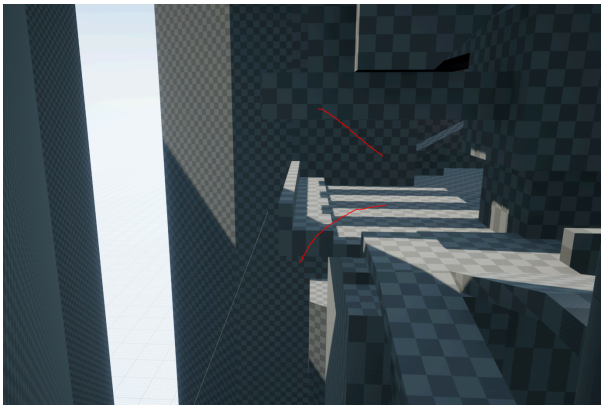
Form follows function

I can't believe I forgot this dictum. It was hammered into my head in undergrad. I guess I got caught up on the visual function and not the gameplay (or experiential) function. The map is called fissure to convey a sense of divide and a risk in crossing that divide. I then settled on some type of hydro/refinery/futuristic structure. What I didn't do was go into the function of this structure in relation to the experiential function.

How does "cavity", "divide", "enclosure", and "vista" translate to gameplay? I've been stuck on the bridges and following the "3-path" multiplayer rule. Right now the map is reeeeally just one path split into three branches. In all honesty, I recognized this with the ai gameplay - they had no reason to fight unless I forced control points. And those control points only make sense in one area - which is oddly enough, the main hallway/transition - the high bridge.

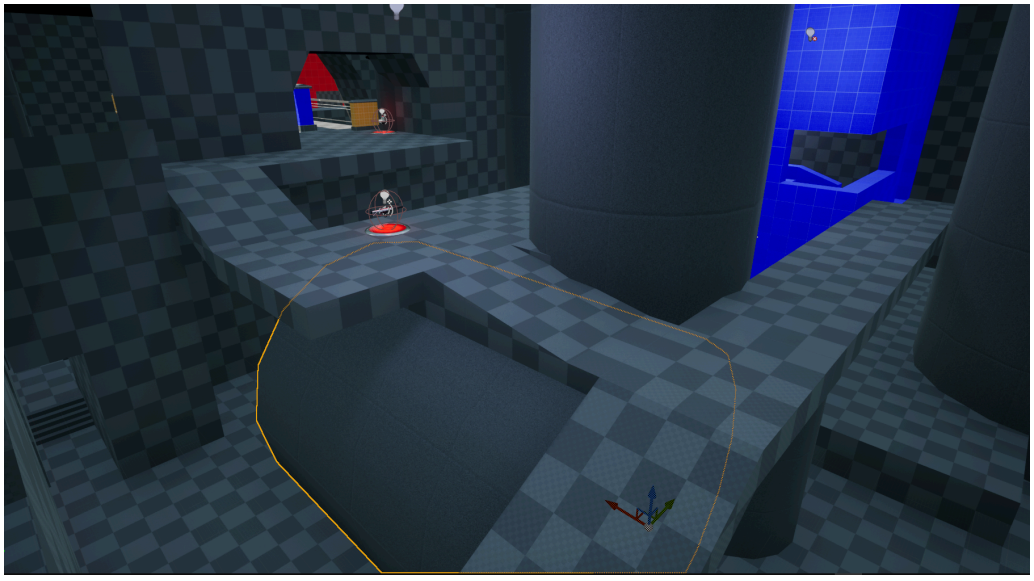
I have dead space outside of the bases and have been trying to force them to be something for the sake of satisfying the "vista" concept. Below is the mirrored area, the right image is the vista concept. As you can see, they serve no function:





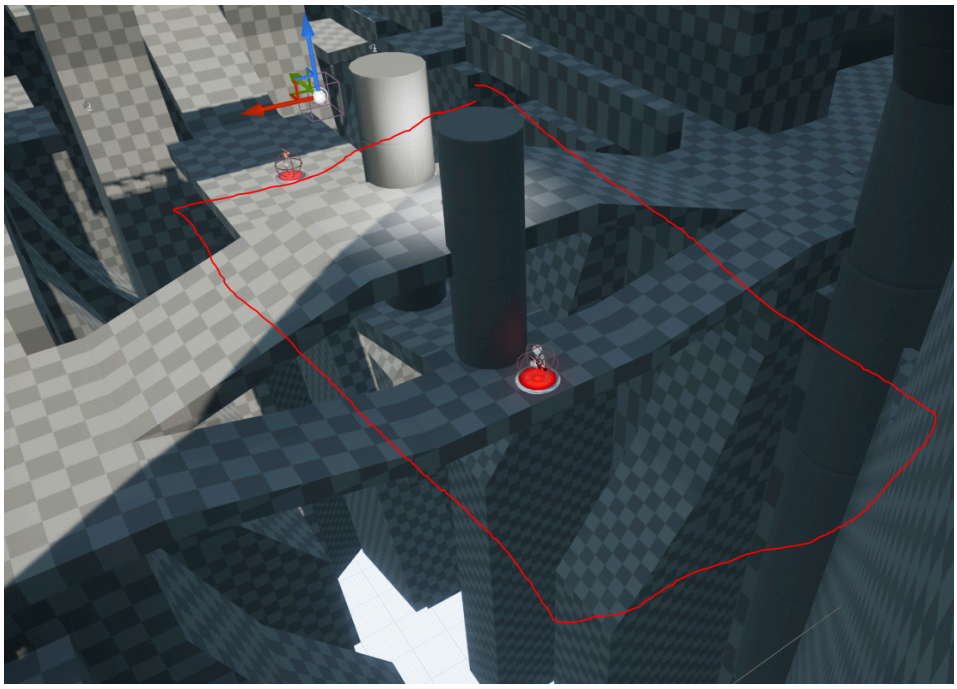
The solution is to crush that open area into a hallway since right around the corner is the base and another combat area anyways. It's interstitial in my diagram and the vista still exists. The vista vs enclosure serves as orientation between red/blue when not in the center.

Speaking of the area those corners open into:



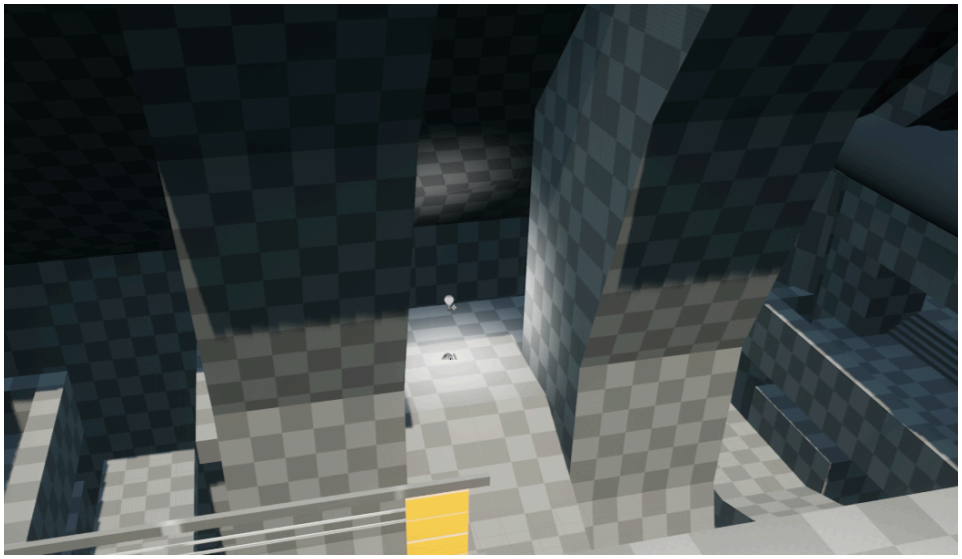
This is now a generator room and storage. Again, I was struggling with how to define this space, only relying on the overarching theme and leaving large unresolved areas. With a function, this space provides close quarters and elevated combat as players navigate the generators, silos, and catwalks. The base can also be considered an office area and control room. A control room holds something valuable (i.e. flag) and is the starting point for teams.

Converting the hallways and recognizing how the control points work in a symmetrical map means I need to rectify this zone as well:



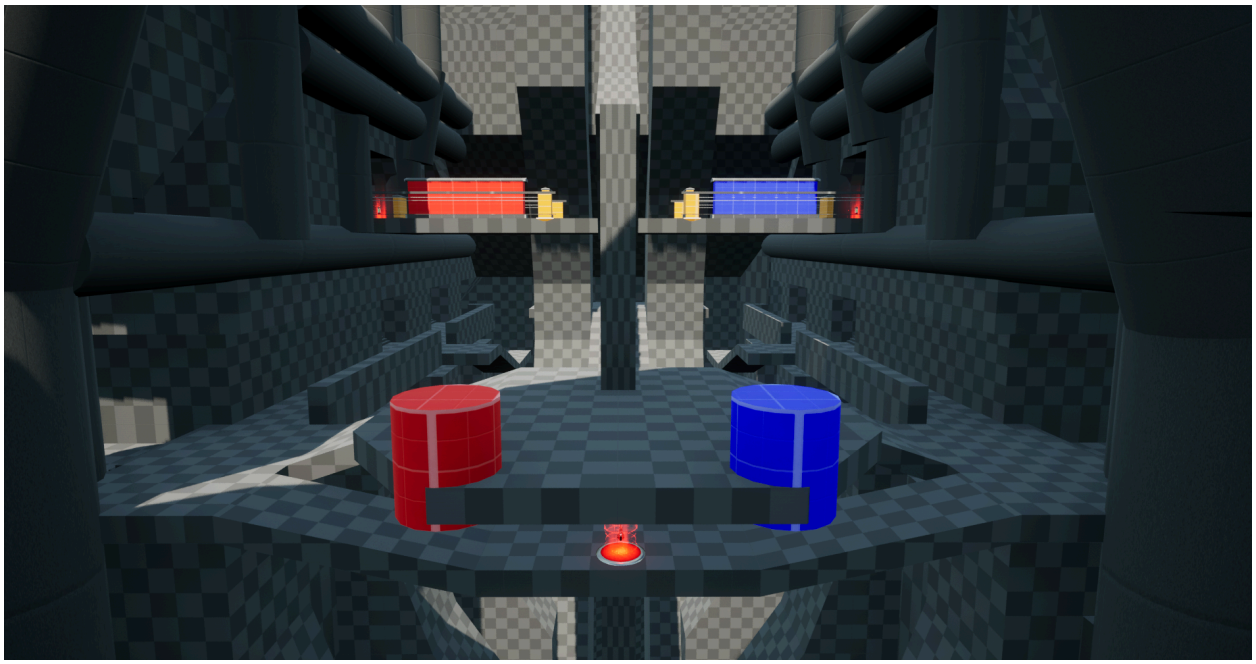
A solution is to make this into something like a landing zone, docking area, etc… The function of that changes the space into an arena area rather than something interstitial (i.e. another hallway). I plan on playing with making a large landing pad with some embedding into the angled cliff face in the bottom right of the above image.

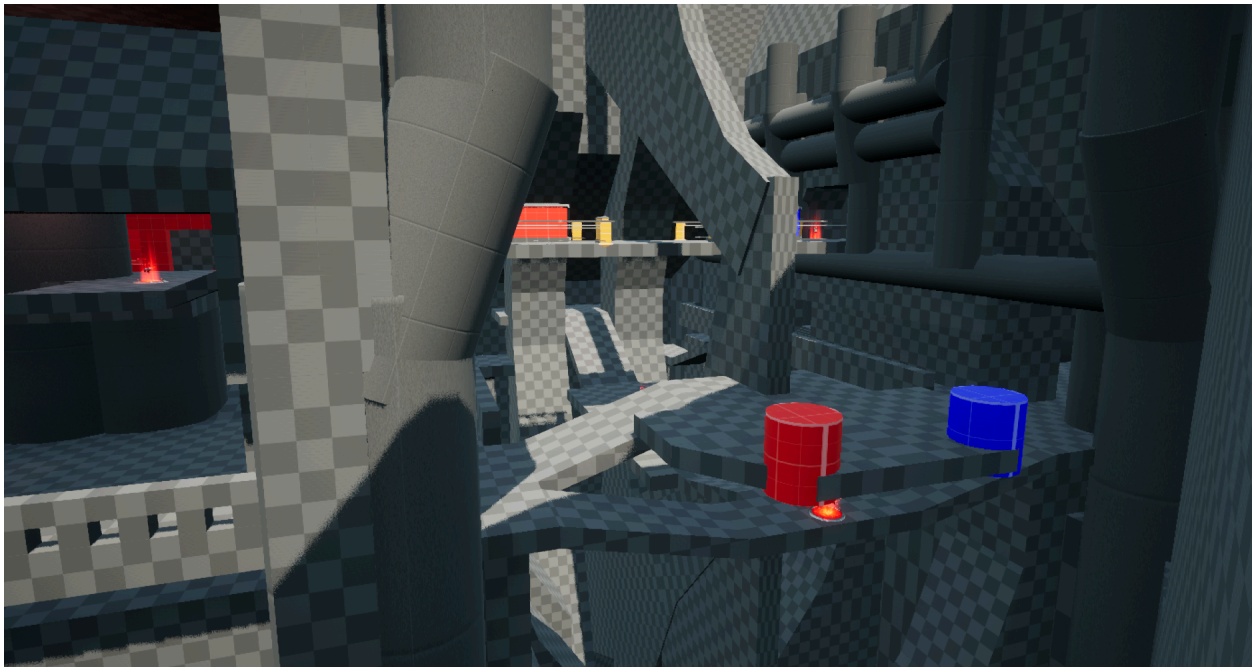
Finally, the third “path” is okay but lacks yet another purpose.

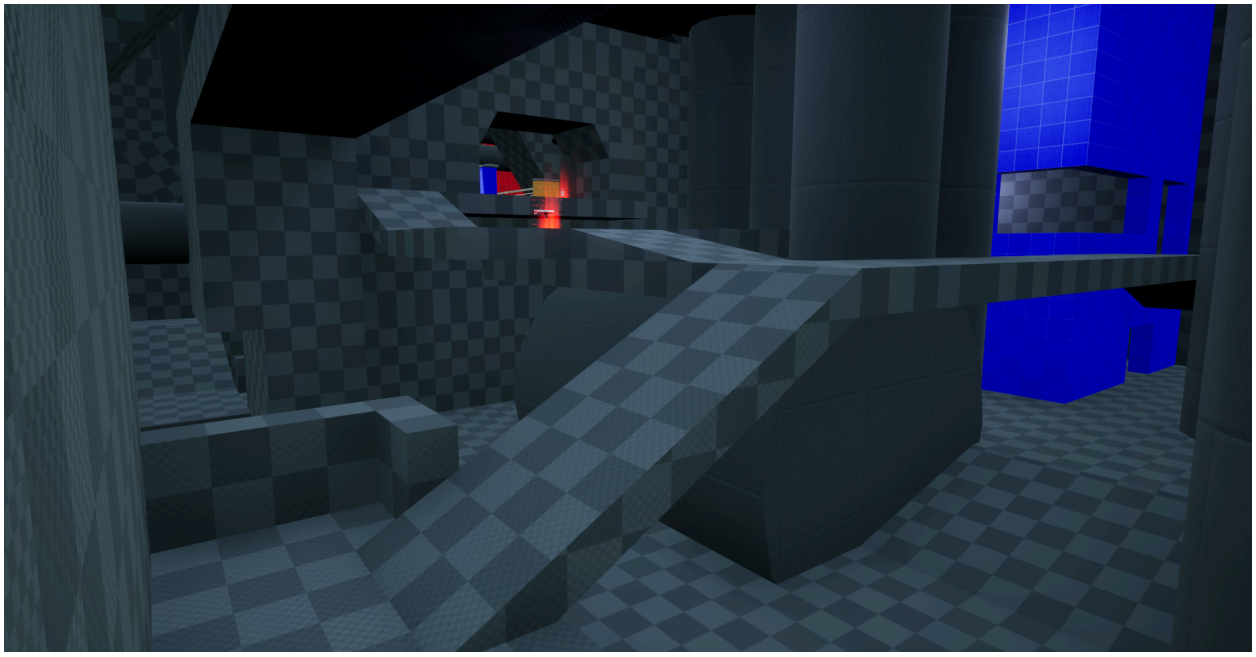


It serves as a control zone and some backdoor routes (the jump downs in the recesses) but it's a little small. Embedding it further into the wall, giving it a function of a hydraulic control area might fix this.

Update from analysis









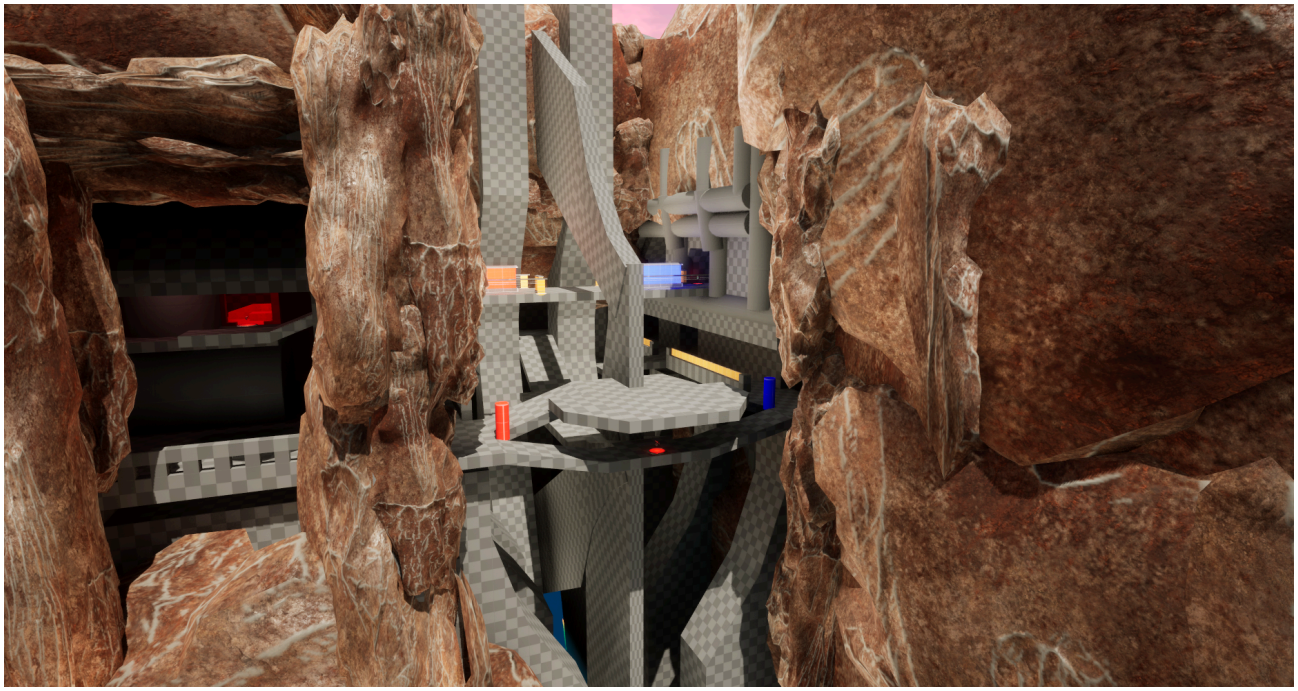
Still quite a bit to do but it definitely feels better.

—-

Did a simple aesthetics pass on the terrain to get a better feel. Liking the direction. Also made me realize the “landing platform” needed to be opened much more as it was feeling claustrophobic for being a “vista.”

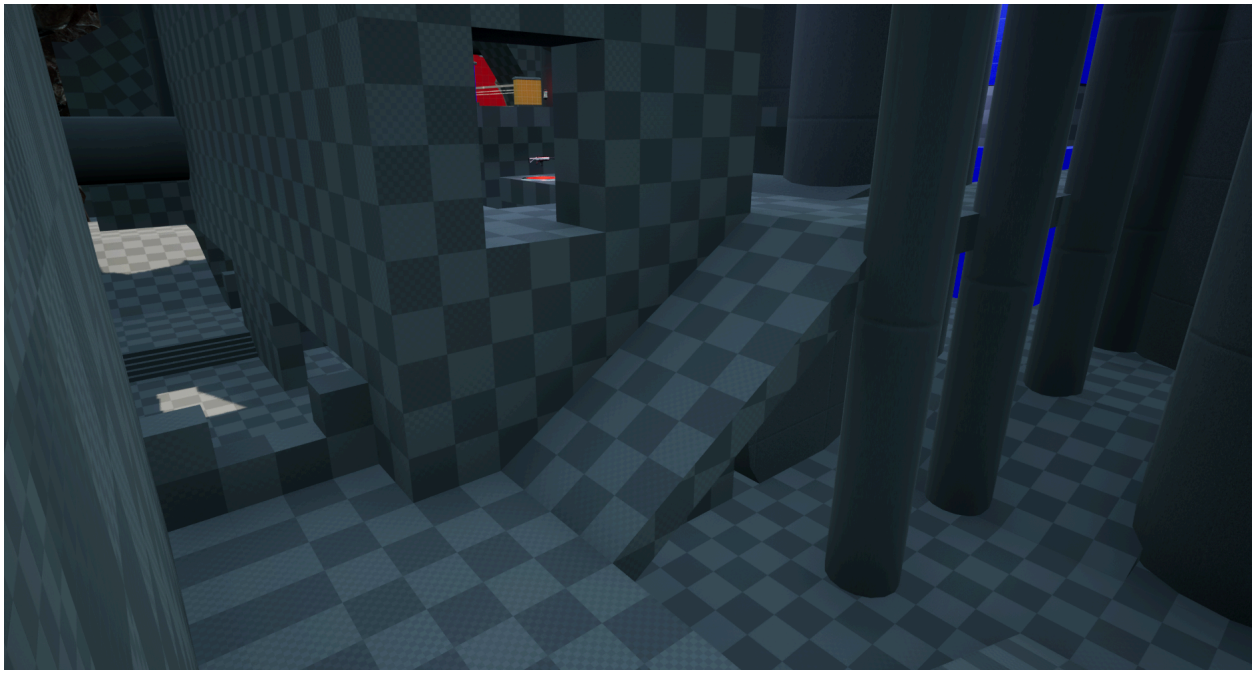


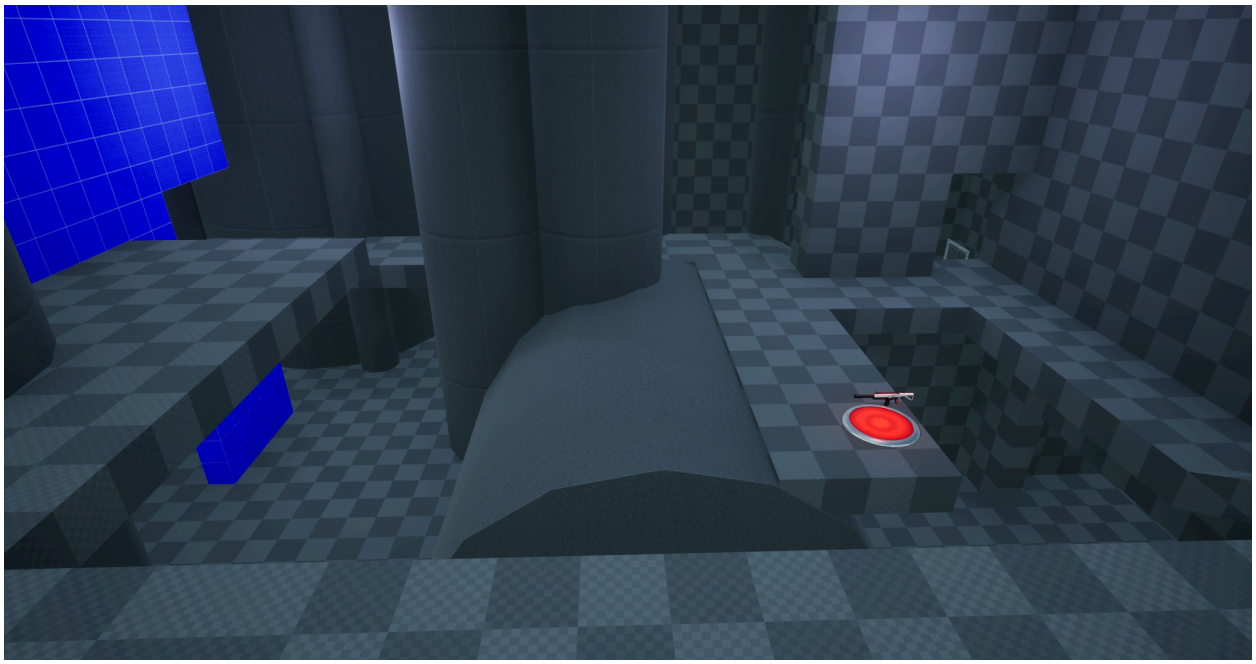
Blue base exit low looking out.



Overall map view.

Made some adjustments to the main base areas. Resolved a sightline from the incline to the farthest edge and somewhat figured out the elevation changes. Added some cover and enclosed the area as well as it was feeling too spacious.

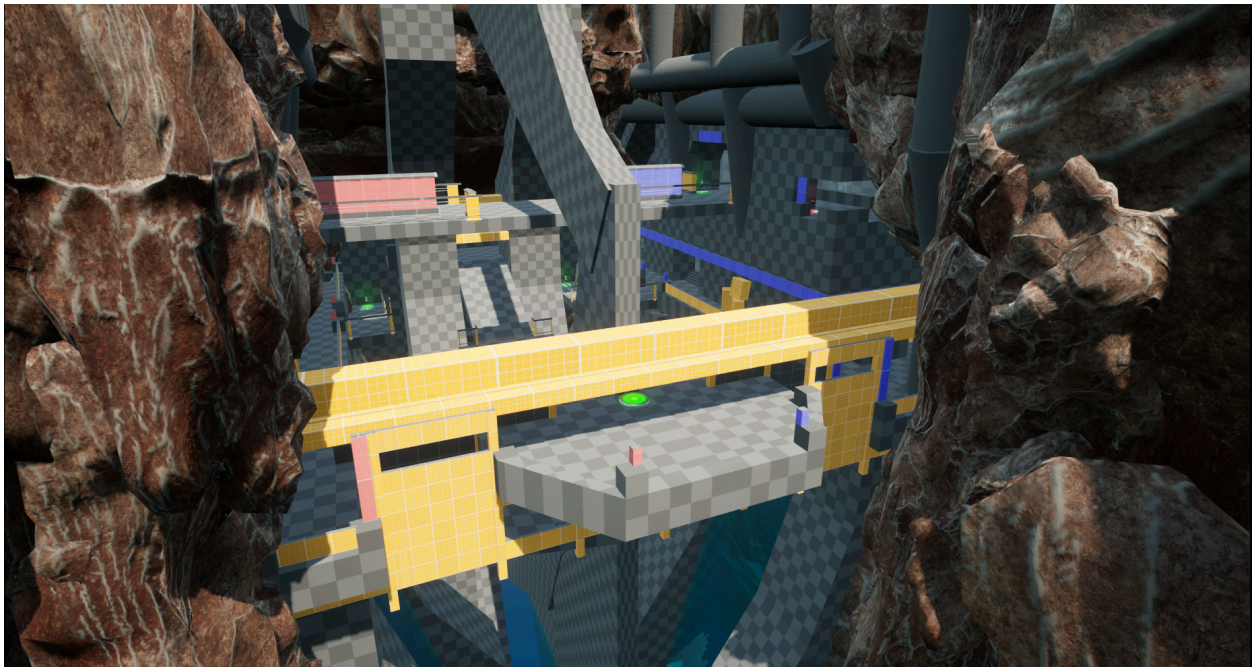


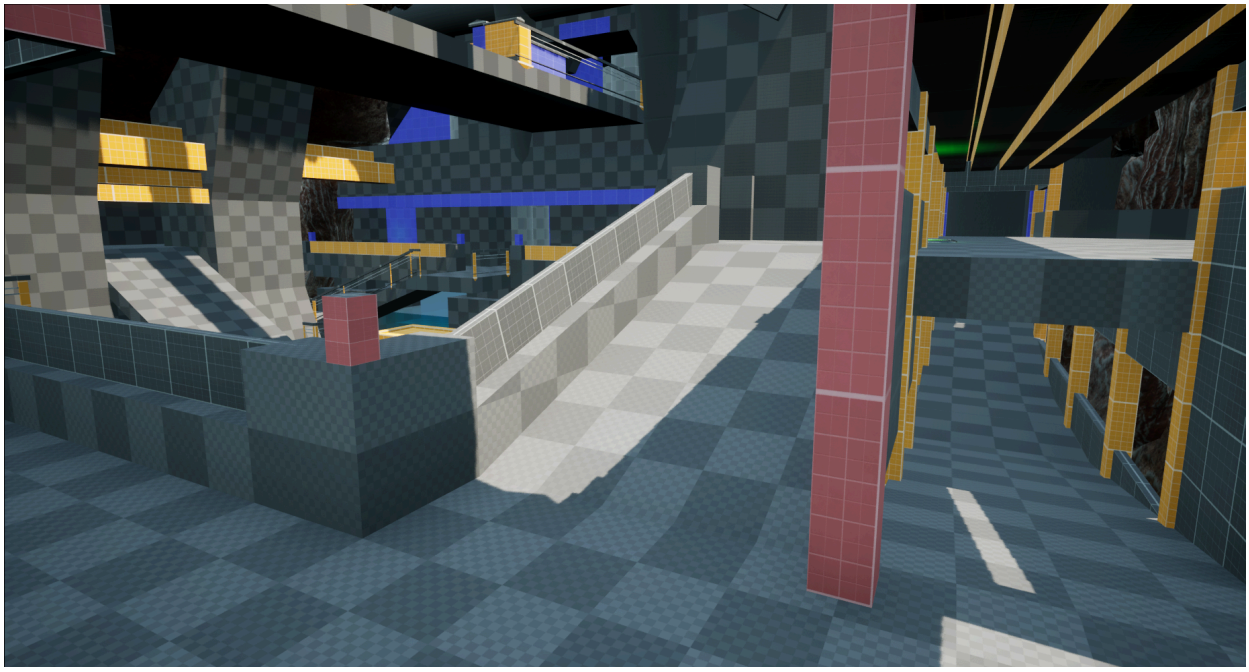


“Completion”

With a good amount of progress since the last update, I’m calling this “complete.” It by no means is, but there has to be a stopping point with each of these projects and I feel I’ve learned from each of these endeavors lessons I’ve needed to. So, for the next few images, I’ll be discussing the theory and intent as well as reflecting on the decisions made.

To begin, here’s an overall shot:

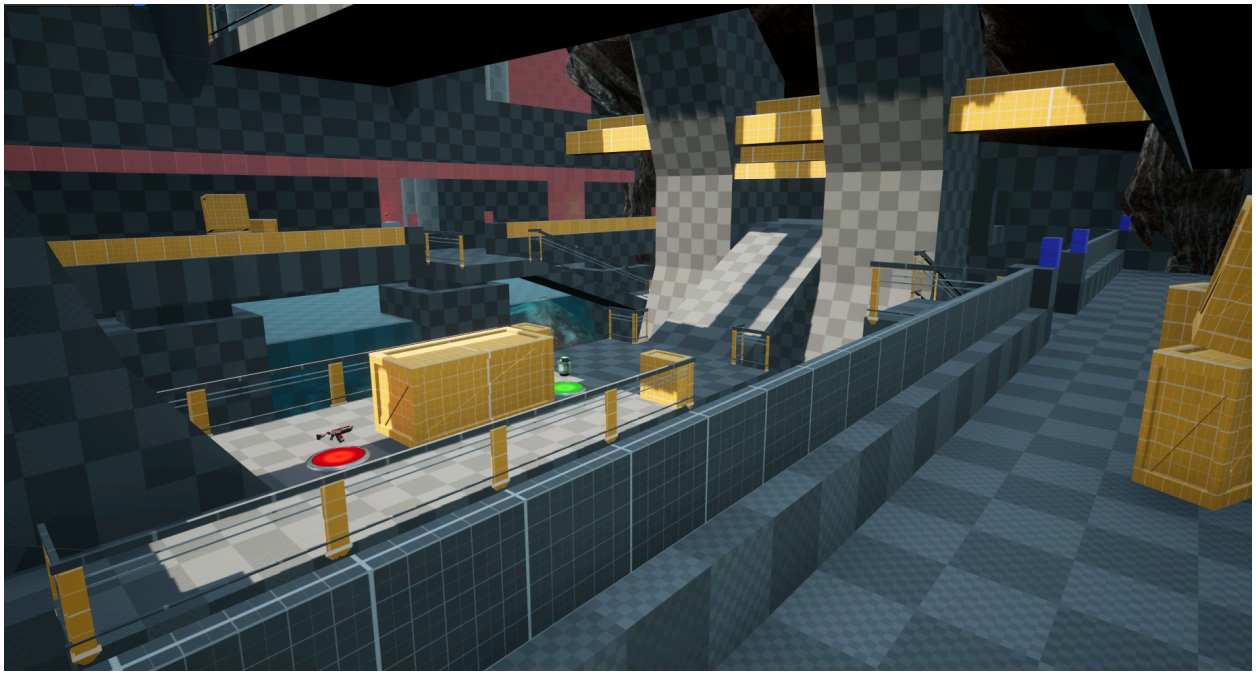


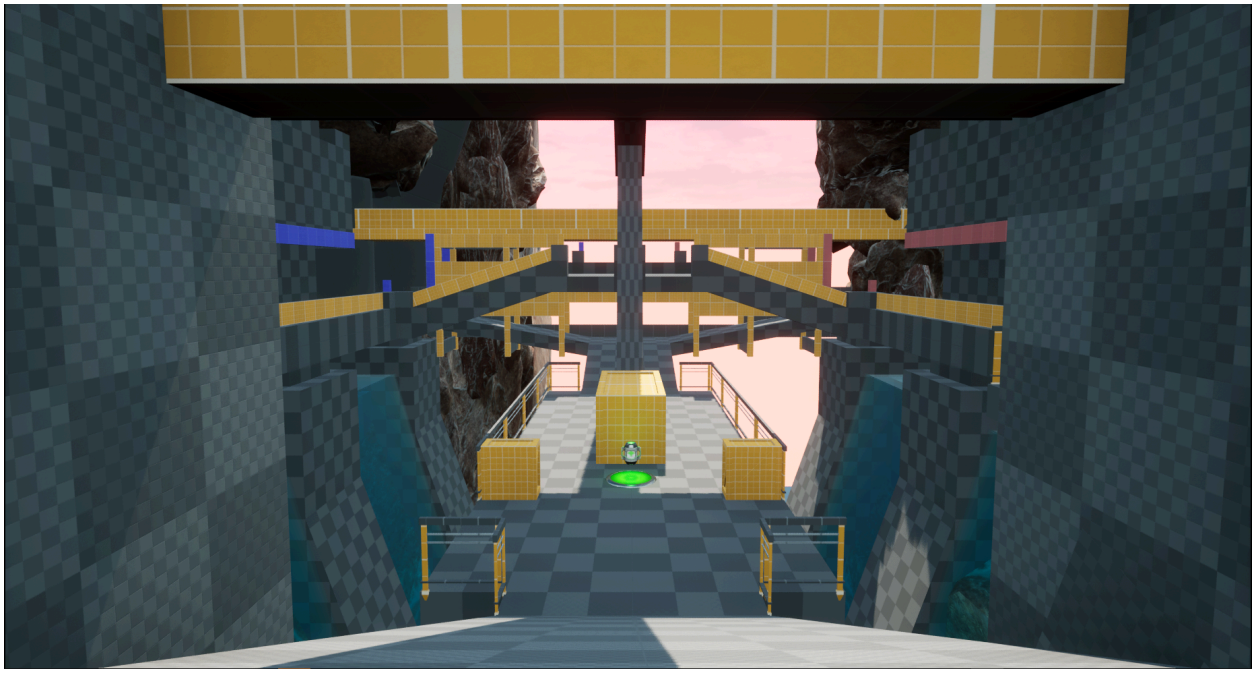


As you can see, a bit has changed with the closest platform. As much as I wanted to keep the area open, the gameplay was suffering. It was too open, especially since it contains a control point, where players in the zone could get sniped from too many locations. The resolution I came up with is to make a vent system that spans the canyon to provide cover. The long rectangular tube blocks a lot of pot shots from the high bridge. To be honest, it did visually enclose a little too much and in retrospect, the most forward facing panels (the two yellow walls) could be removed/replaced with those vertical columns to keep in theme with a lattice-work bridge stretching across. Those panels don't provide any cover anyway (as the camera is in a

position no player would ever be in. Other than that, the platform space has been widened to make more of an arena space and drop downs from the bridge entrances and exits.

Crates and rails!

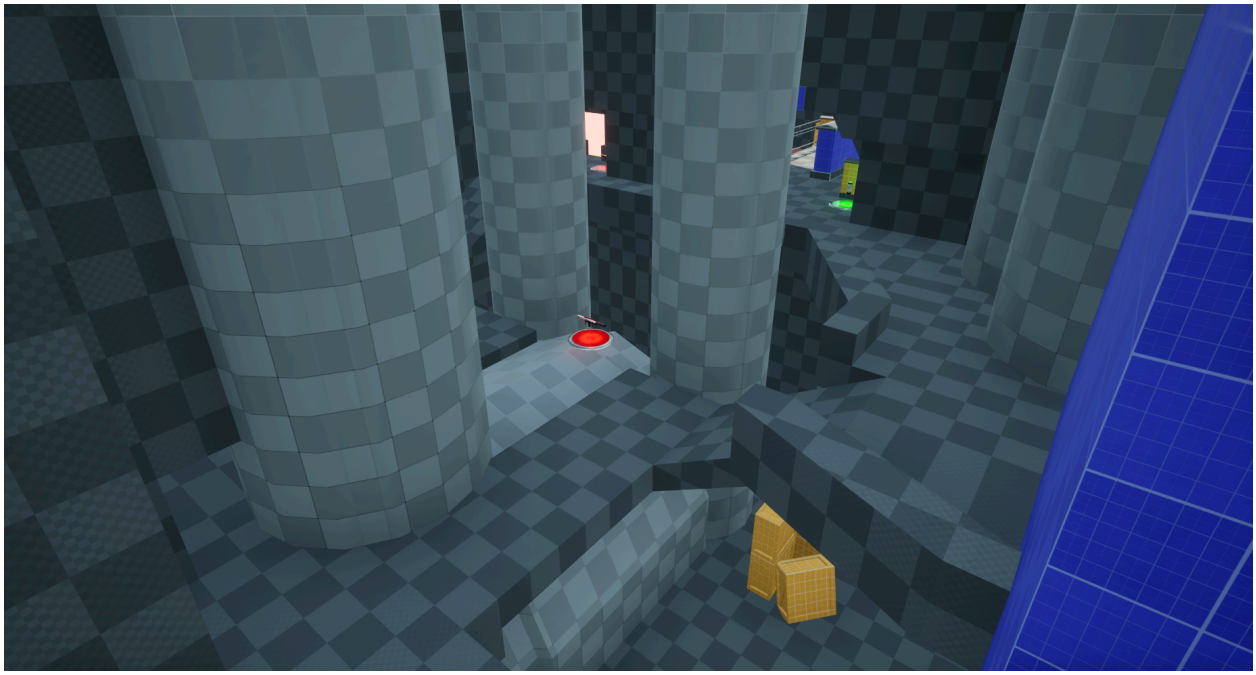




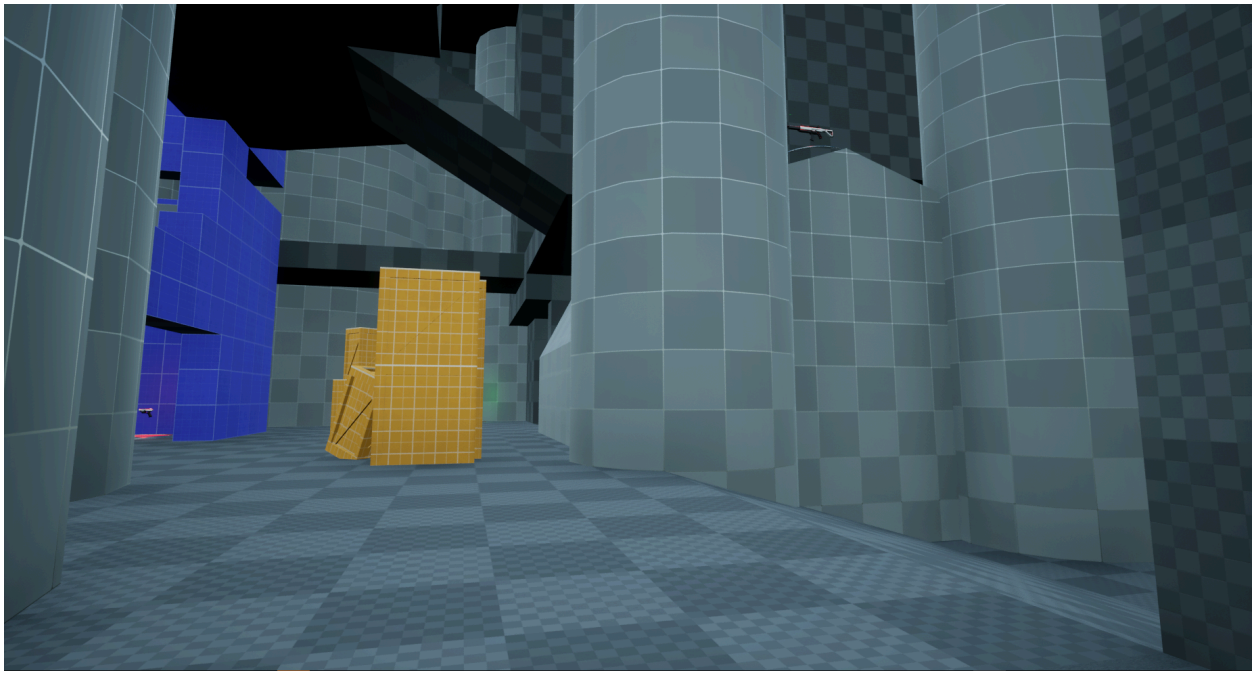
The central area feels pretty good now. There's cover and a power weapon plus health pack to encourage traversal. In the first image, the ramp towards the third capture point has another vent system overhead - similar to the bridge situation, this provides cover from the highest zone

shooting down. The railings still keep the main area more open and risky but crates have been added for cover without detracting from the theme. Not shown are the drop down points from the zone - those now have health packs as well and are isolated enough to act as the back door access back into the middle entrance of the main interior zones.

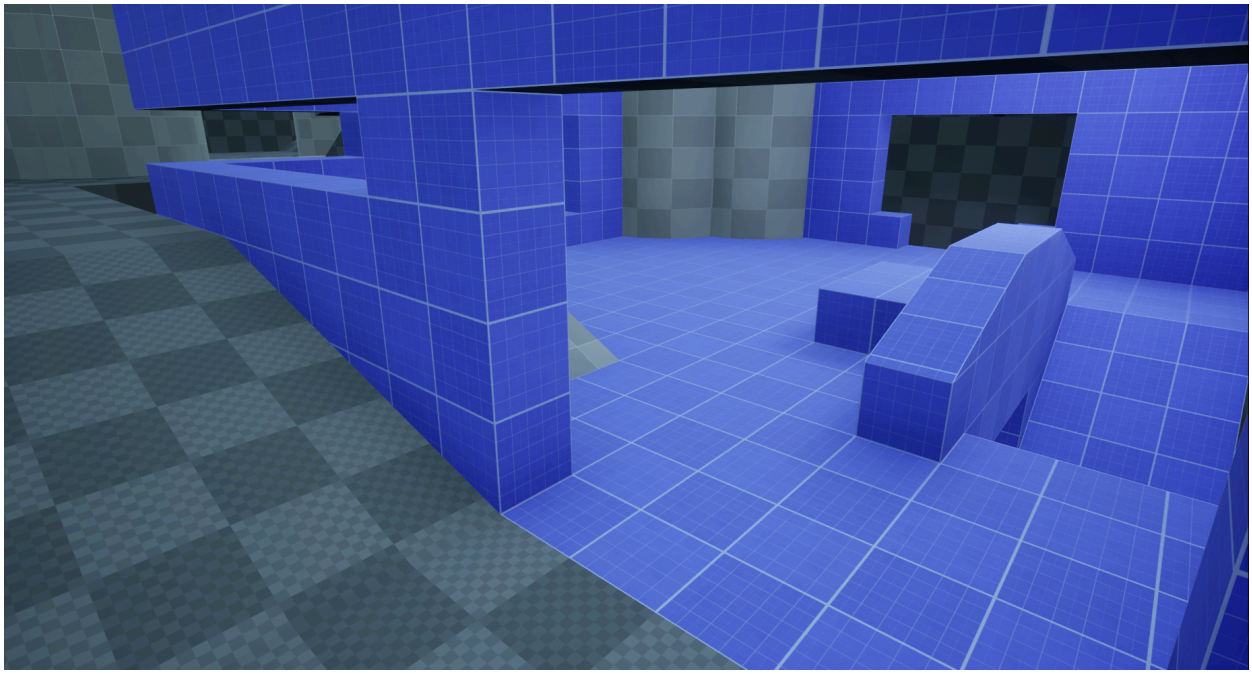
Interior spaces:



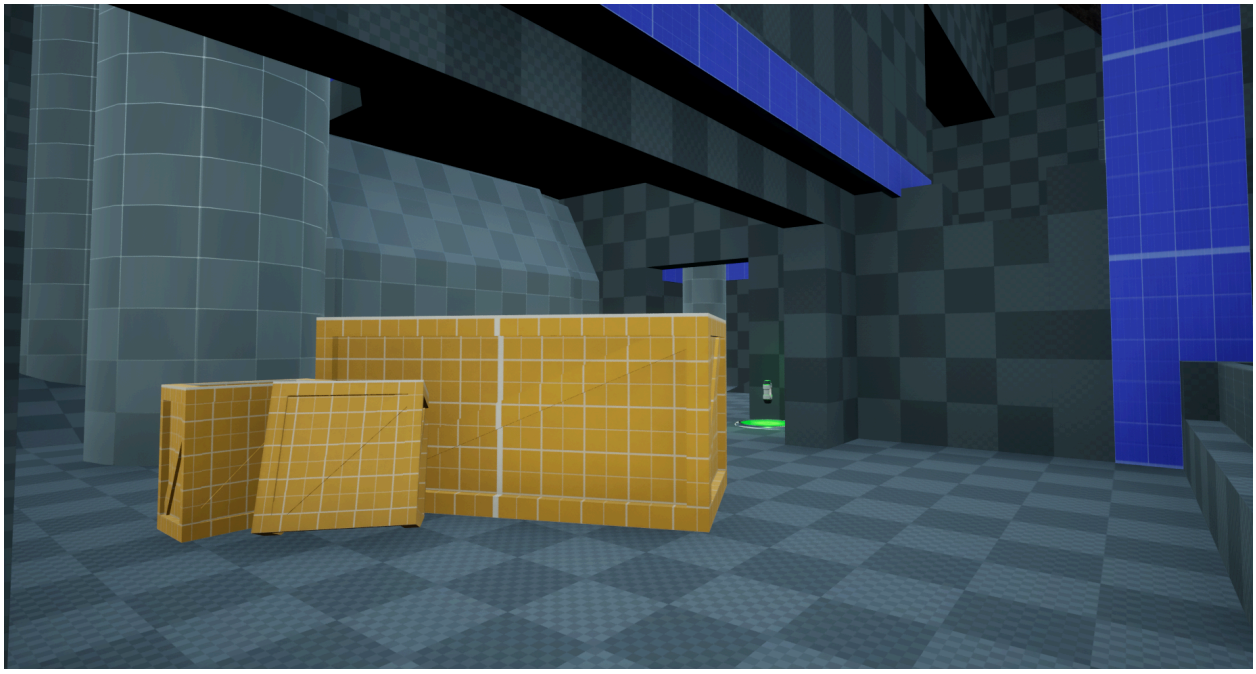
Main interior looking down onto “generator and ventilation” system.



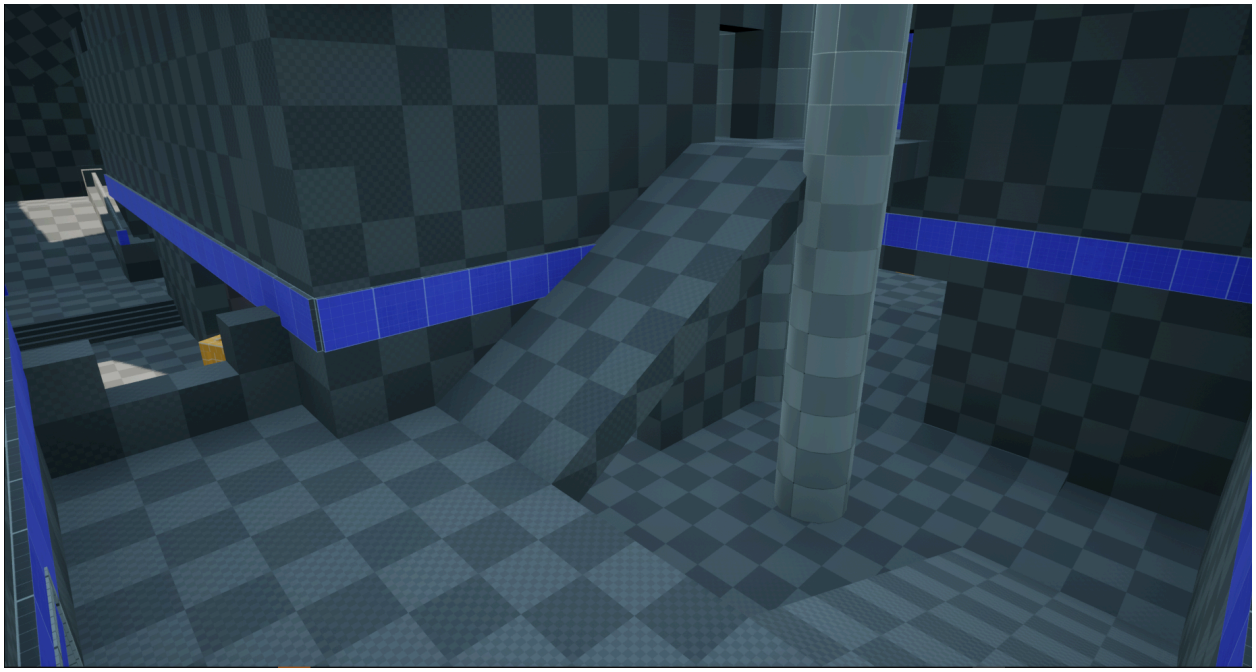
From center of outside looking into to generator (right) and main blue base (left).



Second floor of blue base.



Farthest interior from main base. Generator to left, stairwell behind to right.



Stairwell connecting lowest level and farthest point of main interior.

The interior area was feeling too spacious and ambiguous. Adding the idea of a generator and vent system as both a central focus and obstacle clarified the space a bit more. The edge space that leads to the far bridge (last interior image above), ended up solving the interstitial area by containing a power weapon and drawing sightlines to the second capture zone. The main base itself is two-tiered and provides a variety of choices from taking the low long path, medium middle/upper path, and quick risky central path.

To get a better sense of the space, below is a flythrough and video.
[VIDEO - Fissure Flythrough and Gameplay]

Post Mortem

Some lessons learned and things to improve:

- Space use (balance real function vs abstract game function)
    - The initial design was too abstract without a clear idea of the functionality of the spaces that were being connected. I struggled a lot with the interior (cliff) areas because of this. For the future, use node-graphs to define spaces more concretely instead of relying solely on how the space should “look.”
- Visual clarity
    - Part of the abstract vs real space also made the visual clarity a pain point. The interior spaces were supposed to be of a generator room or industrial type area, but that’s as far as I took it. Without zooming in the scope on and defining “is this a garage, is this a boiler room, etc” some areas lack a focus. Without a focus, the

more I tried to make interesting interactions, the more vacant and escheresque it became. Focus bring clarity.

- Gameplay loop first
    - This was discussed earlier but it would have really helped to have functioning gameplay to define a number of spatial decisions early on. Get the bare minimum out first and play that with the foundational mechanics first before laying geometry.
- Scale
    - This started to figure itself out towards the end, but for a good portion the scale was large and monotonous. Again, suffering from too much abstract. For example, the main bridge space works well because there's a utilization of railings and differing scales and the bridges feel like they could be part of poured concrete or there's a heftiness to the walkways needed to span such a space. However, the interior catwalks are the same thickness. They should be much thinner (think metal mesh catwalks in engine rooms). This would diversify the interior from the exterior, or at the very least, that a player is going to engage in smaller compressed areas rather than expansive ones.