

LEVEL DESIGN DOCUMENTATION

BRIDGE

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Contents

High Level Overview	3
Level Goals	3
Design Considerations	4
Map Overview	7
Map Structure	7
Character Experience	9
Points of Interest.....	21
Balance.....	24
Aesthetics	26
Visual Development.....	26
Affordance	28



High Level Overview

Level Goals

The purpose of my level is to create a fair, enjoyable and unique King Of The Hill (KOTH) Team Fortress 2 Map.

When I set out designing a level, I used inspiration from other tactical fps games I'm familiar with to create a starting point. I wanted a map that felt full, with pathways and routes all being connected and involved in the core elements of the map. I found that a lot of initial map designs lack complexity and have areas that feel pointless. So, with my level, I wanted to ensure it felt enclosed and every route had a specific purpose towards the aim of the game mode.

Starting with the capture point as a focal area, the enclosed spaces around mid promote tense combat that then expands into the outer corners of the map. Players naturally engage at the centre of the map, due to the game mode KOTH having specific focus on a mid-point, and pathways that lead to here are assessable to both teams. The level should allow for frequency and dynamic player encounters without feeling overcrowded or too chaotic. As well as this, dynamic gameplay should ensure the map remains interesting through multiple playthroughs with a range of strategies; staying memorable from unique features and landmarks which identify the map to the player base. Spawn rooms should allow for safe exiting to avoid camping advantages.

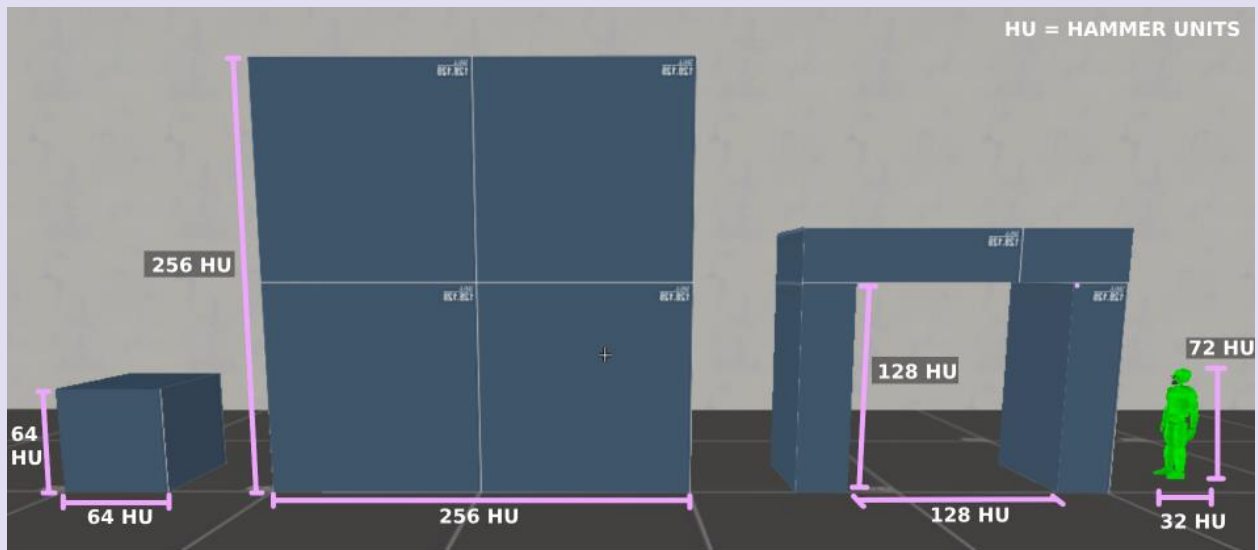
Some goals for my level will be to have fair and unbiased gameplay, allowing the game to run without one team having an initial advantage over the other. I would like my map to have a consistent design theme which is clear to the player, and recognisable. The level should also allow for beginner and experienced players to fully utilise the map to their skill needs and advantages, allowing for casual and high skill level gameplay.

When creating the level, I need to consider a range of elements to ensure my success, such as the size of the map to amount of cover added. The game mode King Of The Hill usually takes place on smaller maps, due to there being only one control point which takes focus throughout the game. I should design with each character class in mind, as all characters will need to be played fairly and not one should be overpowered as this would cause the game to be less enjoyable and discourage other classes from being chosen.

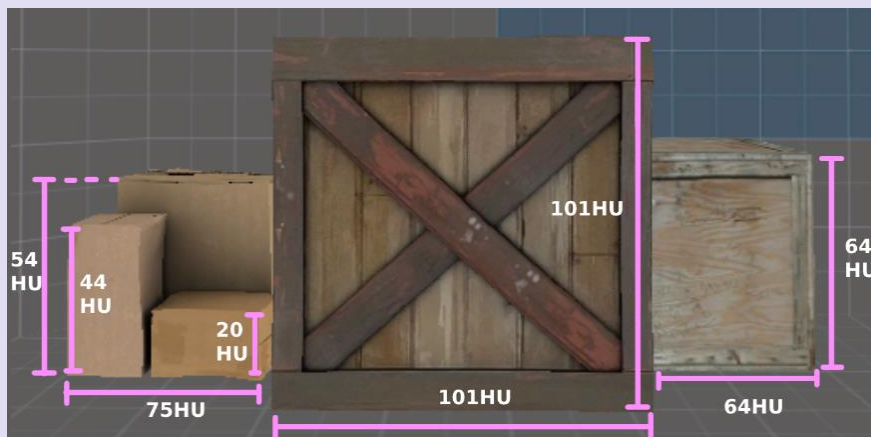


Design Considerations

When designing the level, it's important to keep in mind the purpose and style. It is a Team Fortress 2 map, so it must reflect this and look similar to levels already within the game. TF2's level style involves 90° and 45° angles for buildings and structures, as well as a range of elevation and most areas being interconnected with one another.



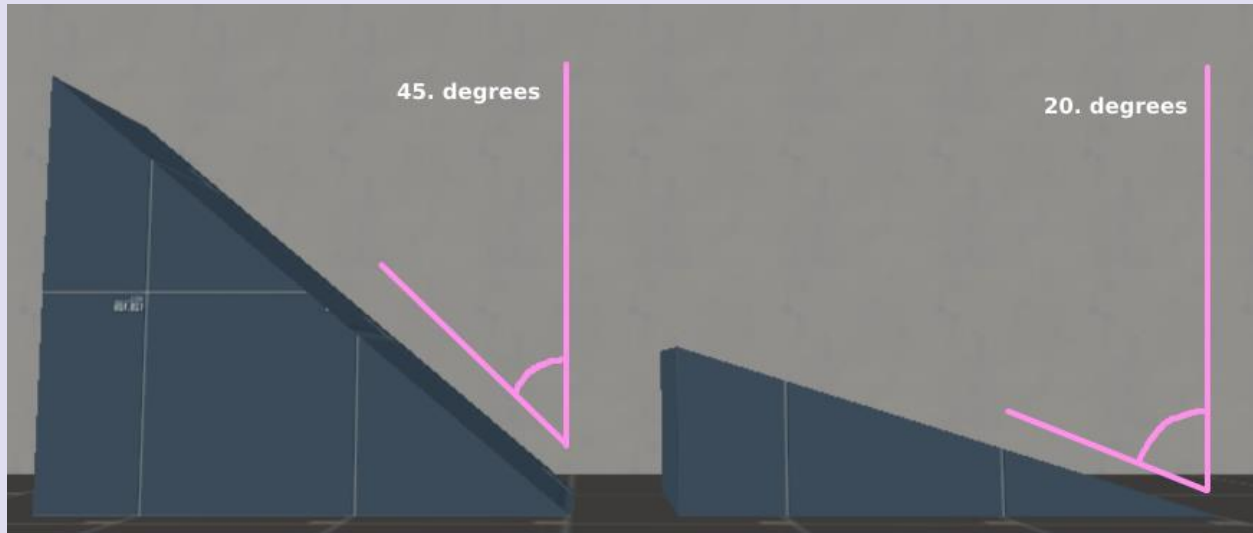
All walls are 32HU wide, allowing for consistency throughout. Doorways measure to be 128x128HU for the smallest, located at spawn and in the tunnels. Other doorways are much larger and allow for multiple people to fit through at once.



Cover ranges from half cover, which is 64x64HU, and full cover which is 101x101HU. There are also 'stair' prop boxes, which allow the player to climb them with various

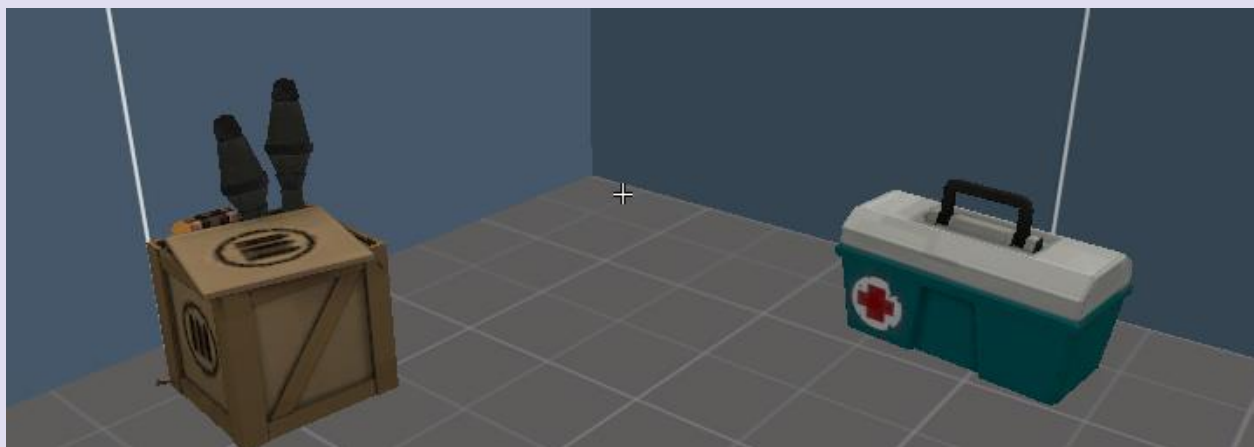


smaller heights, as well as hide behind them. TF2 typically uses hard cover, with most of it being full cover to stop players from having to crouch, which slows down pace.



Slopes start at 20° and max out at 45°, to ensure players can travers the terrain smoothly with a natural feel.

The TF2 character speeds range from Scout at 400 HU/s, to the Sniper (while scoped) moving at 80HU/s. The normal jump distances start at 210HU for Heavy's and go to 330 HU for Scout. However, this doesn't consider Scouts double jump, reaching 640HU, and Soldier rocket jumping which can max out at 1024HU.



Items consist of Health packs, which restore lost health points to players, and Ammo, which provides players with addition ammo for any of their weapons that require it. Health packs can range from small packs giving 20%, medium 50% and full health packs restoring all player health. Ammo pickups start at small which again, gives 20%,



medium ammo giving 50% and full ammo pick ups fully restocking the players ammo supply.

Pickups are located off to the side of main conflict areas, drawing players out of the main route to explore the map, resupply flankers and stop teams from being able to effectively hold opposing spawn rooms or the point itself. TF2 also uses large pickups to create their own conflict points and influence gameplay around a specific point.

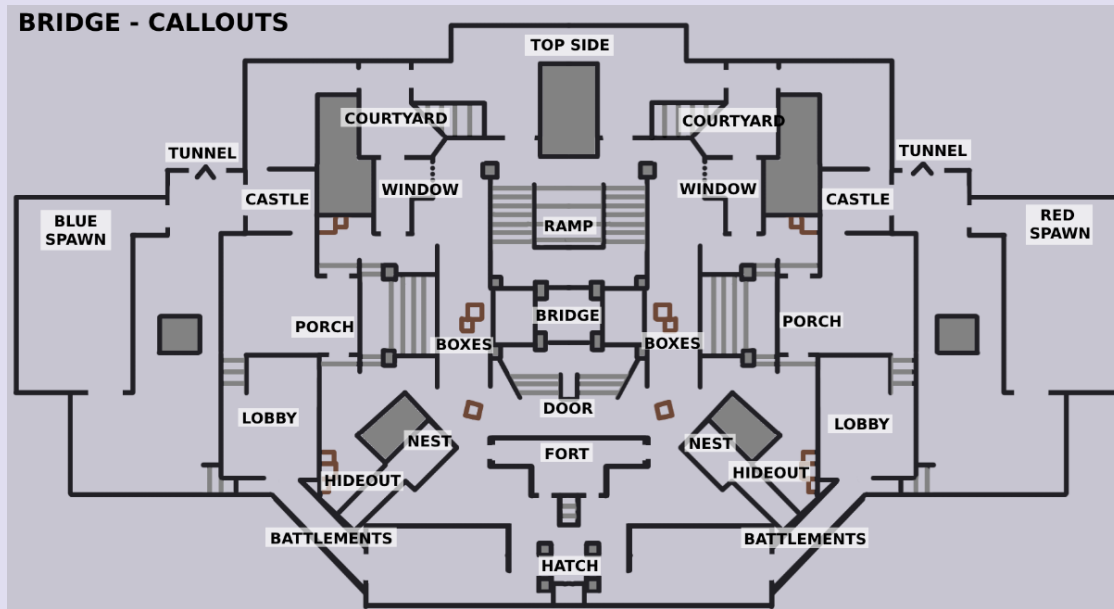
Maximum height to fall from without taking any damage is 269HU. As my level will include a range of elevation, its important to keep in mind what heights will be unable to be jumped from without causing damage.



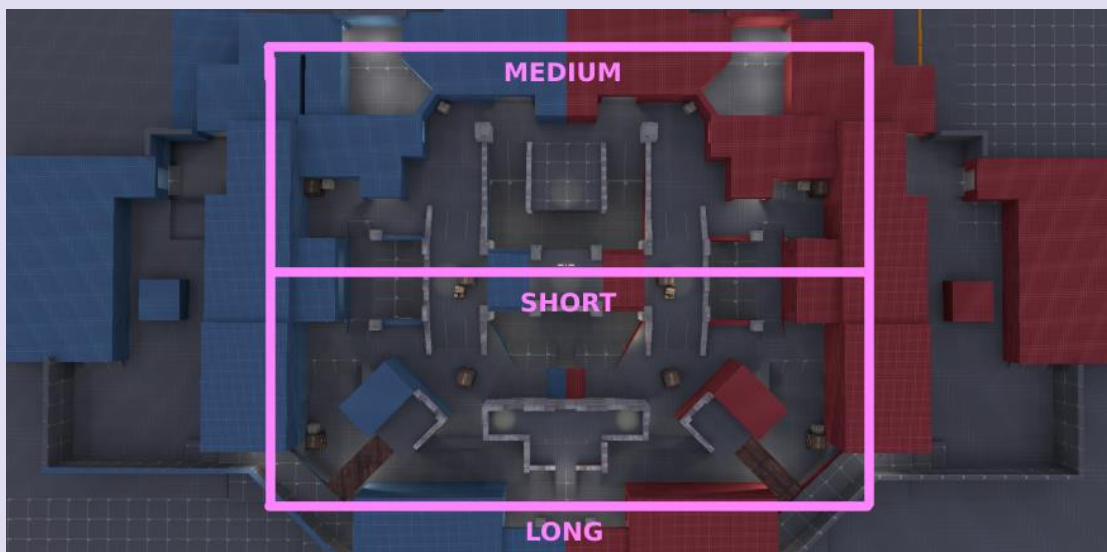


Map Overview

Map Structure

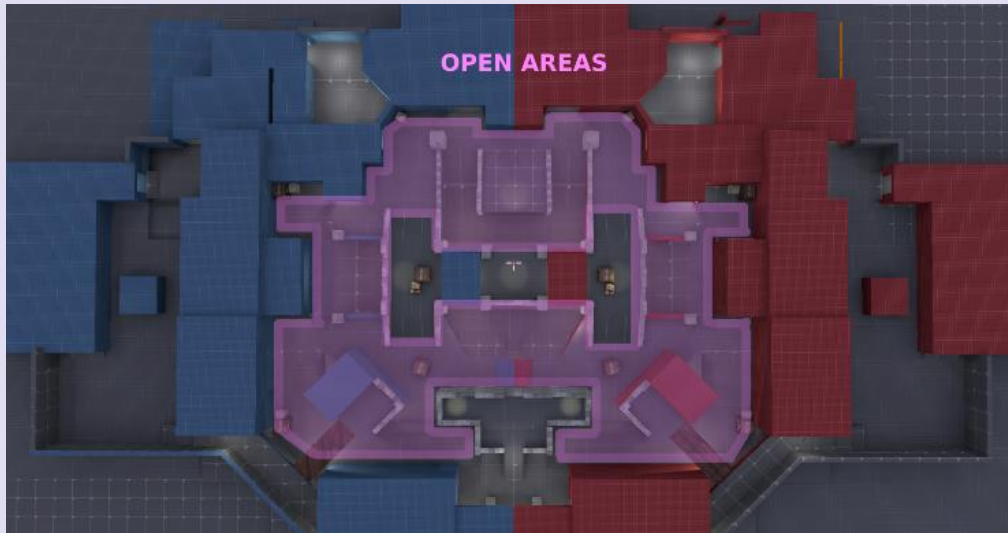


The map structure loosely follows the three-lane structure, with a critical path going directly to mid where the capture point is, and then two alternate routes that go north or south of the map. Short sightlines are found at mid, where there is a range of cover and confined spaces. Medium sightlines are at the north of the map, where classes like Heavy and Soldier would thrive. And then long sightlines are south of the map with areas like Nest and Battlements allow for Snipers to take advantage of open space.





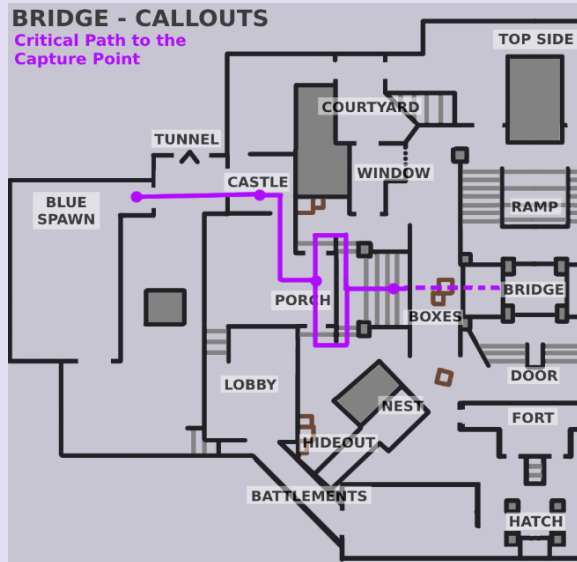
The open areas are found on the edges on mid and separate the outer buildings from the levels central point. This open area introduces players to combat, and grows with intensity as they move through the open space towards mid. The open area allows for the area around point to be held by ranged characters, which in turn balances the closer range characters that thrive in the small space around the point.



There is a range of verticality around the map, with the core structure having three levels of elevation which are the capture point lowering into the ground, the open area ground level, and then raised platforms such as Bridge or Nest.

Choke points are centralised around mid, ensuring the majority of combat takes place there. I tried to ensure there are minimum 50/50 entrances, as this makes pushing areas difficult favours the team already holding mid.

Some key zones around the map are Spawn, the Capture Point, various vantage points around the edge of mid and the cover scattered around. Team Spawn rooms are located the furthest out to make spawn camping difficult. I added multiple exits to allow to players to safely leave, and a range of flank options so teams can get stuck in their own spawns and be unable to push out to any open space. The capture point is initially deceiving, as it is hidden underneath the bridge and hard to spot. I wanted the point to require other parts of the map to also be captured and controlled, as this promoted team strategy and incorporates more of the level into the main objective of the game.

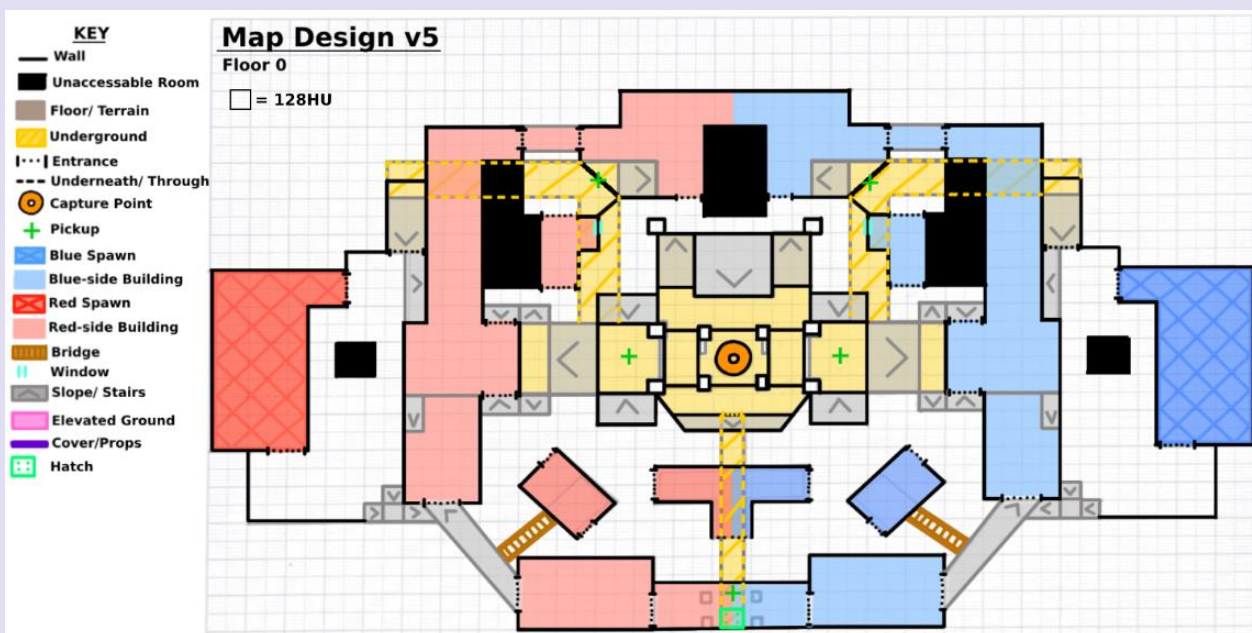


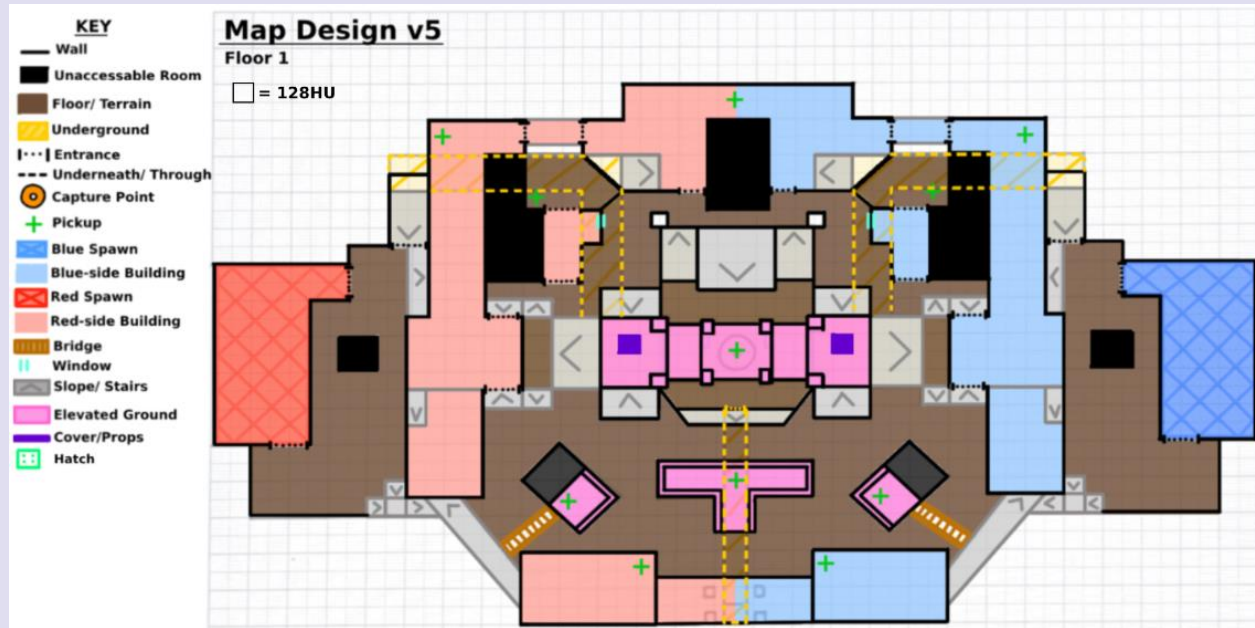
The flow of the map is fast paced and intense. The confined space at mid require players to be constantly moving and pushing areas of the map, and it's common for the point to be recaptured several times in a round. Players navigate to the point using signage; however, all paths eventually lead to the central point. The fast path is to take the middle route straight to the ramps under bridge, and it takes roughly 6~8 seconds to walk to the point from spawning. This short timer allows for flanks to be fast, as well as quick respawning so players are more likely

to play recklessly rather than sit and hold angles.

The level is construct from builds and walls, all 32HU thick. The whole level is quite large for a KOTH; however, fighting is focused into such a small space with outbuilds acting as a secondary wall for mid, making the map feel smaller. Size wise, the key structures are realistic to the TF2 scale and looks suitable for a castle-like setting.

Final Level Design Map







Character Experience

TF2's range of character classes allows for a multitude of strategies and playstyles. Each character has strengths that they can utilize for their team, but also downfalls the enemies can exploit. This is also affected by the map itself, with characters being more effective than others depending on the setting, amount of cover and sightlines.

Character Class Evaluation in Map Areas

x	Point	Mid (under)	Bridge (above)	North Building	South Buildings	Sniper Nest	Hideout	Battlement
Scout	1	1	2	2	3	1	1	3
Soldier	1	2	2	2	1	2	2	2
Pyro	1	1	3	2	3	1	1	3
Demo	1	1	3	1	3	2	2	3
Heavy	1	2	3	2	2	1	1	3
Engineer	2	3	3	2	3	1	1	1
Medic	2	1	3	3	3	2	1	3
Sniper	3	3	2	3	1	1	2	1
Spy	2	2	2	1	2	1	1	3

1	Advantaged
2	Average
3	Disadvantaged

	Scout	Soldier	Pyro	Demo	Heavy	Engineer	Medic	Sniper	Spy
Advantaged Areas	Mid, Hideout	Point, South Building	Point, Mid, Hideout	Mid, North Building	Mid, Hideout	Hideout, Battlements	Mid, Hideout	Sniper Nest, South Building	Sniper Nest, North Building
Disadvantaged Areas	South Building, Battlements	Bridge	Bridge, Battlements	Bridge, South Building	Bridge, Battlements	South Building, Mid	Bridge, South Building	Point, North Building	Battlements



(Reference Map of Callouts Used)

Offensive Classes – The main attack force and damage dealers of the team, who focus on pushing points and contesting objectives.

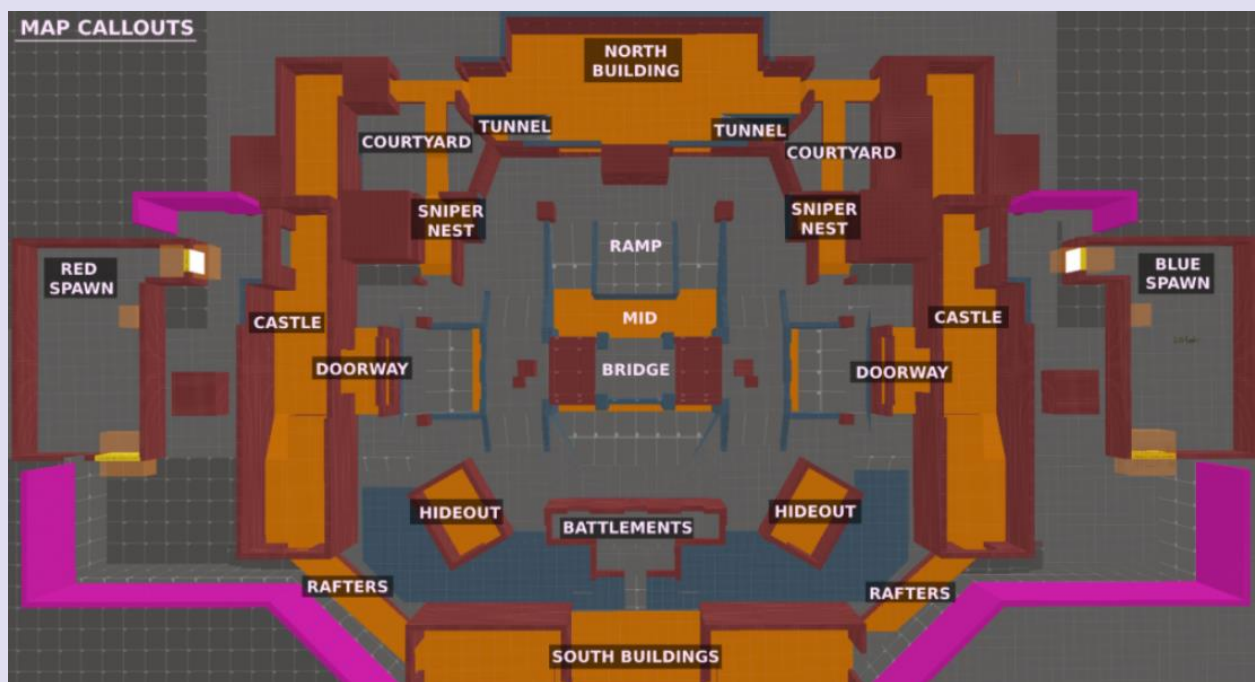
Scout



Weapons: Scattergun, Pistol, Bat

Range: Close

Scout is one of the most commonly played characters and specialises in running to the capture point and taking it quickly. They are faster than other classes, allowing them to get to positions early and their double jump gives additional movement and opportunity for ambushes.





Scouts' movement speed and primary gun allow for dodging and diving gameplay around cover and specifically the capture point. He is strong around mid, due to built up walls and close quarters. He is vulnerable traversing around the edges of the map however, but his double jump allows him to move across buildings with ease compared to other classes.

Scout's Experience



Soldier



Weapons: Rocket Launcher, Shotgun, Shovel

Range: Mid

Soldier can use their rockets to zone players as well as aid movement to attack from unexpected directions and disrupt defences.

Soldier is a good all-round character, with long-range and short-range abilities. This means he can be effective in most areas of the map, using rockets to deal AOE




damage to areas on site, and pushing choke points with his shotgun. Soldier is an ideal character to pick on this map, and only need to be careful of walking into sniper sightlines or getting flanked by the enemy team.

The elevation around mid-bridge is a key area where characters with additional movement can take advantage of terrain, especially on parkour jumps towards pickups that most classes cannot make.

Soldier's Experience



 - Strengths/ Best Areas To Play In

 -Weaknesses/ Areas To Avoid In Fights

Pyro



Weapons: Flamethrower, Shotgun, Axe

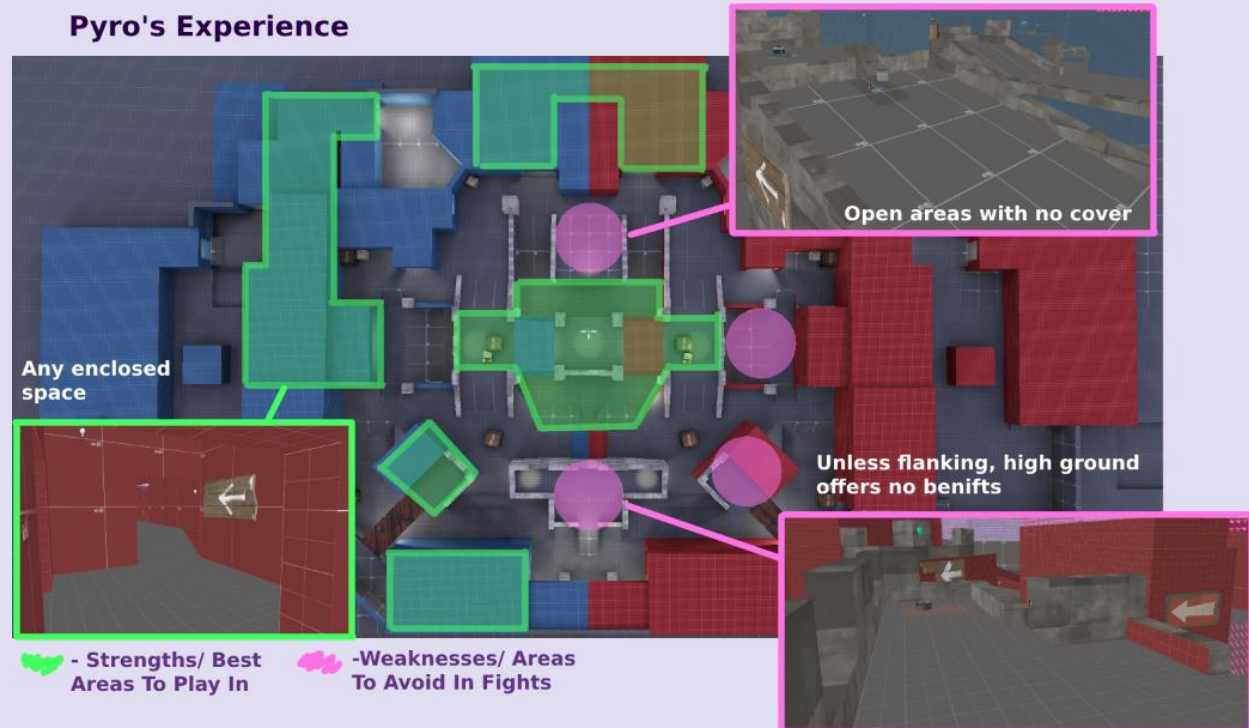
Range: Close

Pyro aids in causing chaos in team ambushes and dealing supplementing and consistent damage while pushing enemy groups.

Pyro deals good damage fast, however, is very vulnerable in fights over distance. He is highly effective on this map, from being able to hold chokepoints around mid to



dropping down onto the point and recapturing it. Any enclosed space or indoor building suits his playstyle, and even in playtesting his effectiveness was demonstrated by his pick rate. He still is vulnerable to snipers and long-distance fights, meaning he is locked to playing around cover and escape routes.



Defensive Classes – Hinder enemy access and hold them back from objectives and key points on the map.

Demo



Weapons: Pipe Bomb, Sticky Bomb, Bottle

Range: Mid-Long

Demoman is another class that have zoning abilities, inhibiting enemies from pushing points or entering key areas. They can place traps that are detonated from afar and help defend areas of the map that are difficult to retake, such as 50/50's or chokepoints.



Demoman is a class that is seen played less in lower elo but utilised in high-skill lobbies for this ability to set traps and contest spaces that are being held tightly. He works well around mid where he has vision on the point but is stood at a safe distance as to not be caught in any crossfire.

Demo's Experience



Heavy



Weapons: Minigun, Shotgun, Fists

Range: Mid

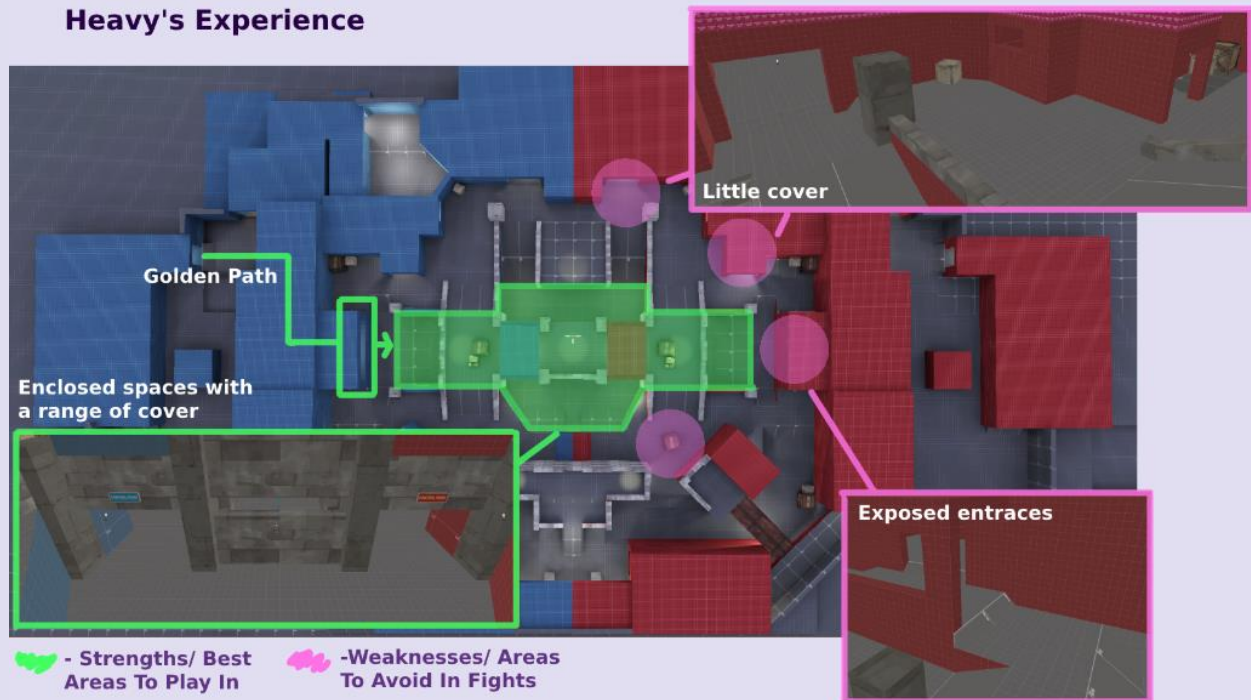
Heavies are good for pushing back enemies and whittling down health while their team finishes them off. They deal consistent damage and can act as a tank in group fights to take the grunt of incoming force.

Heavy's are also a common character pick, with it being vital a team always has one to function as a tank when pushing areas. He thrives around mid, where there is cover



to hide behind and heal, and defend up close. His bullet spread gets more erratic and less powerful with distance, so staying around close areas such as mid are best for him. As a key team player, he is a target for snipers meaning walking to mid alone could be dangerous.

Heavy's Experience



Engineer



Weapons: Shotgun, Pistol, Wrench

Range: Mid-Long

Engineers can build a range of useful support tools, from Sentry Guns to defend the point, Teleporters for quicker rotates and Dispenser for logistical support.

Engineers are necessarily fighters but providers and are valuable by what they can provide to the team. Turrets around mid are strong, and crates/boxes give them



perches to build on. It's important they stay with their turrets too, ensuring they are replaced if broken. Directly on the point is far too dangerous, but close by with a clear sightline allows for engineers to fully utilise their kit to defend mid while supporting their team.

Engineer's Experience



Support Classes – Use their abilities for the benefit on the team to tip the game in their favour and support other classes playstyles.

Medic



Weapons: Syringegun, Bone Saw

Range: Close

Medics offer mobile healing and are capable of over-healing or adding invincibility buffs which can be vital in team fights or ambushes.




Medic isn't a combat role, meaning he acts more of an extension of another character than anything else. Because of this, he requires areas with cover and clear sight of his team to heal effectively. Spaces with flank routes or open to sniper sightlines can be detrimental to medics, and it's common for them to stay around mid to support the close-range characters taking over point.

Medic's Experience



 - Strengths/ Best Areas To Play In

 -Weaknesses/ Areas To Avoid In Fights

Sniper



Weapons: Sniper Rifle, Submachine Gun, Kukri Knife

Range: Long

Snipers can focus and eliminate on key targets from a distance and hold key sightlines and angles from being pushed easily.

Sniper is the longest-ranged character in the game and is designed to support the team from afar. He is optimal throughout the edges of the map, taking advantage of



open spaces and any view onto the point. His main weakness is being flanked and close-range fights, so areas away from mid are best for him.

As somebody who mains sniper, it was important that despite being a close range-favoured map, snipers could still impact the game state and be useful. There are two main buildings (Nest and Window) where snipers are designed to be able to pick off enemies that have overextended or walked out of cover.

Sniper's Experience



Spy



Weapons: Revolver, Knife

Range: Close-Mid

Spies are critical flankers, who can infiltrate enemy lines, disable and deconstruct buildings, and assassinate critical characters to sway team fights.

Spy is another character this isn't combat focused. He spends most of his time traversing the map to the enemy's side and waiting to strike. It's important there are easy flank



routes he can take to get behind the other team unnoticed, which is why he is better staying to the edges of the map and then working towards the conflict at the centre.

He should stay away from direct team fights, such as on the capture point, as its easier for him to be exposed and killed before he can make any impact or deconstruct any buildings.

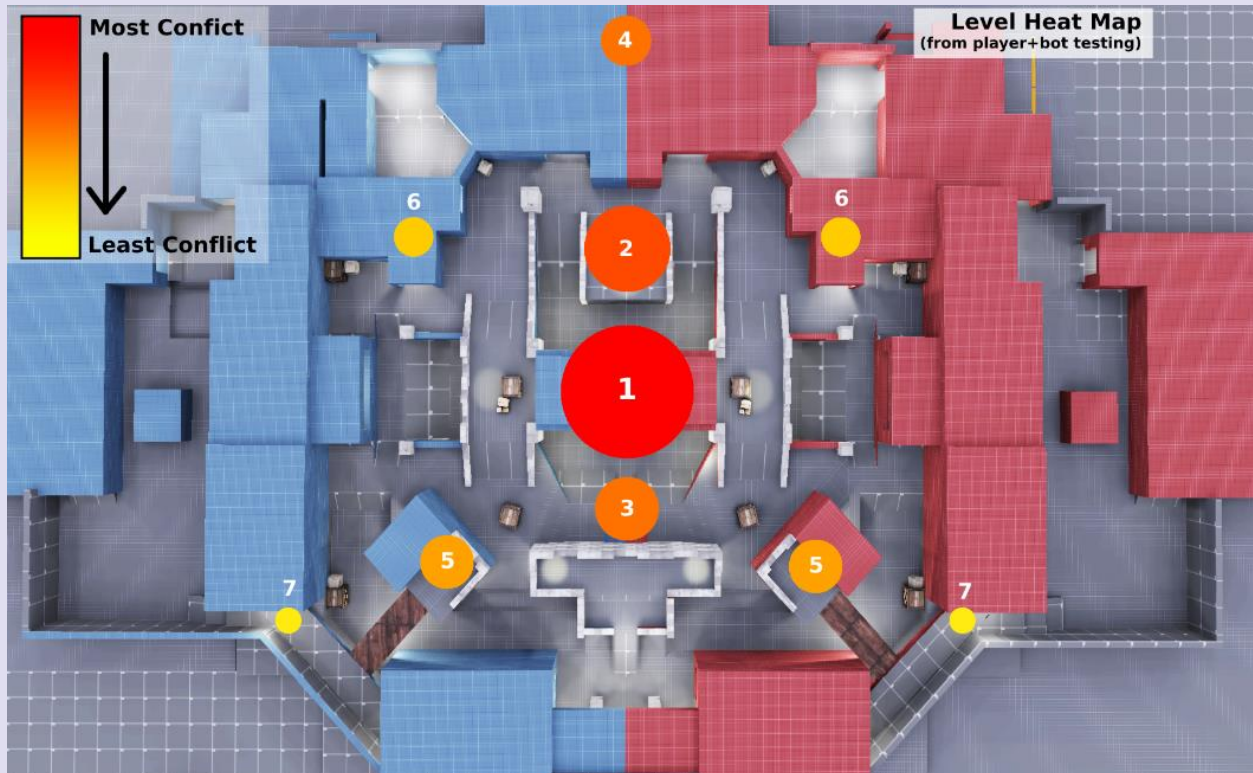
Spy's Experience



Points of Interest



This heat map shows areas of engagement and danger zones where most conflict takes place:



A breakable hatch leading from the south buildings to a door at mid offers a flank route which creates stealthy opportunities for Spy's, or quick rotates to the point. This shortens travel time to mid and encourages exploration of the outer map for pickups, as there is a safe pathway back to the centre of the map.

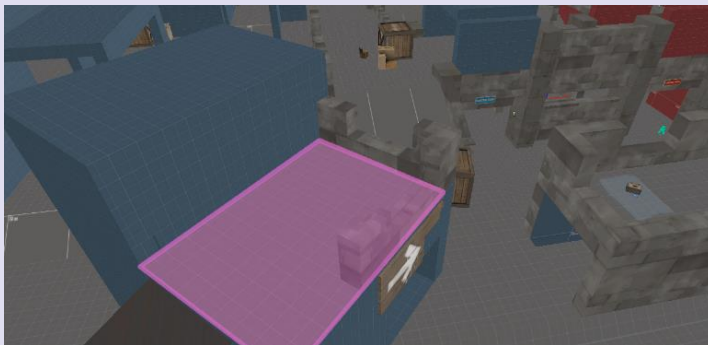


The bridge in the middle of the level allows for above and below gameplay, adding verticality to the level and unpredictability for those capturing the point underneath. This promotes the top of the bridge as a critical area to hold, as controlling this layer ensures more security on the point and no unpredictable ambushes from above.



There is also some key pick ups situated on top of the bridge, which again draws players to fight over the space in its own conflict ecosystem and objective to secure.

Nest is positioned at a similar high elevation, providing long sightlines for Snipers across the map. There is a view of the point, and long-range classes can monitor and hold open spaces leading up to mid. This fosters other classes to be cautious around their own player visibility and look out for cover around the map.



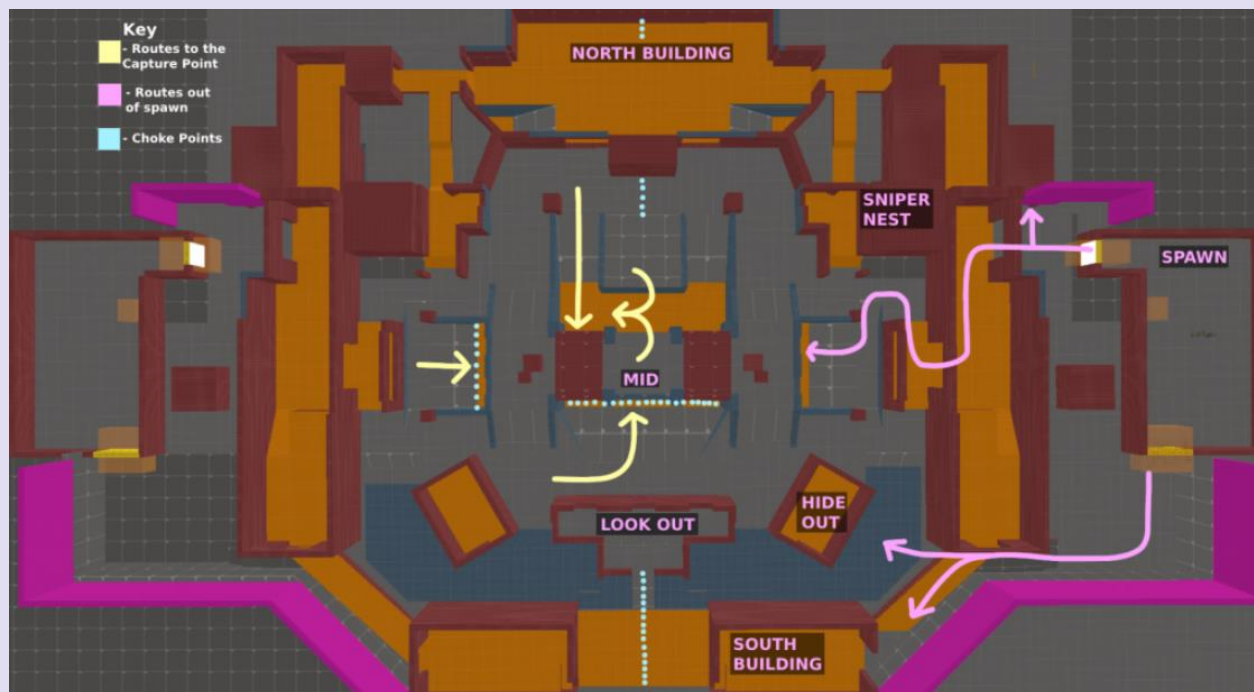


Balance

Skill levels, safe routes for beginners and substantial risk/high reward for experienced players

My map is symmetrically mirrored, ensuring fairness between teams completely. I felt this was the only way to make sure neither team had an advantage in game because of geometry or the physical layout.

I had to consider several to ensure unbiased and engaging gameplay. Spawn rooms are far removed from the main conflict points and provide more than one exit to ensure spawn camping is difficult and unrewarding. There are multiple pathways to the point, including various levels of elevation to accommodate the range of playstyles the character classes offer. Pathways are balances with varying amounts of cover, and chokepoints to discourage stalemates or teams being overpowered before reaching mid.

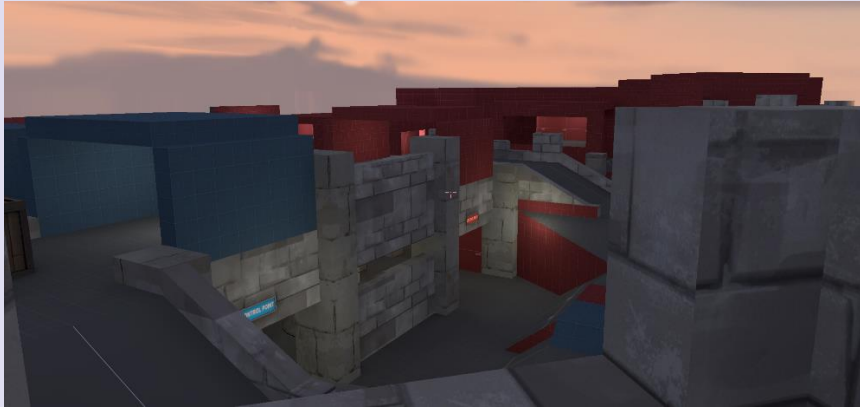


The control point is placed in an easily controllable area, with a plethora of cover and ways to contest or recapture the objective. This creates defences for the team that is controlling the point and creates skirmishes continuously.

Ammo and health pick up placement being distributed away from the map centre rewards players for taking strategic routes and stop excessive camping. Some key



pickups, such as those on top of the bridge, create their own conflict points that teams can fight around to control for their overall benefit.



Sightlines have been carefully created to prevent snipers from dominating whole areas, while still allowing for the threat of ranged combat. Cover and walls have been placed according to team

needs so all routes remain relevant and useable. These height advantages are balanced by including nearby flank routes, so long ranged characters still need to be aware of their surroundings and cannot continuously hold angles.

Another key thing to note is the central bridge, which acts as a key landmark for players to orient themselves around and communicate with their team. By looking to the bridge, it is clear to tell where on the map the player is and what direction the enemy is coming from.



I also made a simple mood board on the housing of each side. Despite not fully set dressing my level, I did plan for the visuals and investigate the difference of red to blue side.

My level is set at dusk, and so the general lighting of the level is low. This means I had to add extra lighting for indoors and sections of the map to ensure player clarity as the function of the map is more important than visuals.





Affordance

I added a range of affordances to my map to improve playability, clarity when navigating and overall visuals. I ultimately decided not to completely set-dress my level as it is necessarily a goal for this module, and I would rather spend time on continued testing. That being said, I did texture a few areas slightly for visual clarity.

I added general point lights to every building in the map to increase light levels, as my sky box is an evening scene. I then added specific spotlights over all pickups, to draw attention to them, and doorways/specific entrances such as the entrance to tunnels.





A range of signs, from arrows to worded titles were put around the map. I wanted to ensure that no matter where the player was, they could walk a few steps and see a sign pointing to where the capture point was. This makes the level a lot easier to navigate as a new player experiencing the map layout for the first time.



I did add crates and smaller boxes as cover in open areas, as well as make-shift stairs to jump up to battlements etc. This gives players something to play around in fights and hard cover when reloading/walking around.

Slopes and ground around mid all point towards the capture point itself, directing player behaviour towards the point and main objective of the game.



There are range of doorways

also a windows/ which look



to the capture point and middle of the level. This frames mid as the main objective and solidifies it as a key point in the level.

As for anti-affordances, tall buildings and walls confine the level and stop players from leaving. There is no way for players to see outside of the map, and thus they cannot attempt to leave.



**Walls Around the map
- discourage leaving the area**



**After meshing these would be replaced
with fences, props and buildings
to keep immersion while setting boundaries
for player movement.**