

LEVEL DESIGN DOCUMENTATION KOTH_PALACE

BY S020231L

Contents

High Level Overview	4
Level Goals	4
Design Considerations	5
Map Overview	6
Map Structure	6
Character Experience	14
Points of Interest	19
Balance	23
Aesthetics	26
Visual Development	26
Affordance	27

HIGH LEVEL OVERVIEW

High Level Overview – Project Goals

Designer Goals

#	Goal
1	Create a KOTH map for TF2 that fits the conventions of the game mode – a map that is symmetrical, sensible map size, structured around a capture point and includes necessary elements such as pickups.
2	Design a map that has a unique theme in mind and reflect this theme through the map design.
3	Design a map that feels balanced for all TF2 classes and creates an enjoyable and replayable experience regardless of skill level.

Player Goals

#	Goal
1	Utilizing flank routes and having both successful and unsuccessful flanking attempts.
2	Utilizing cover, techs and map knowledge to show skill expression.
3	Using the three-lane structure of the map to play a class to its full potential.
4	Using the map's affordance to guide and deliver a more comprehensive experience.

High Level Overview – Design Considerations

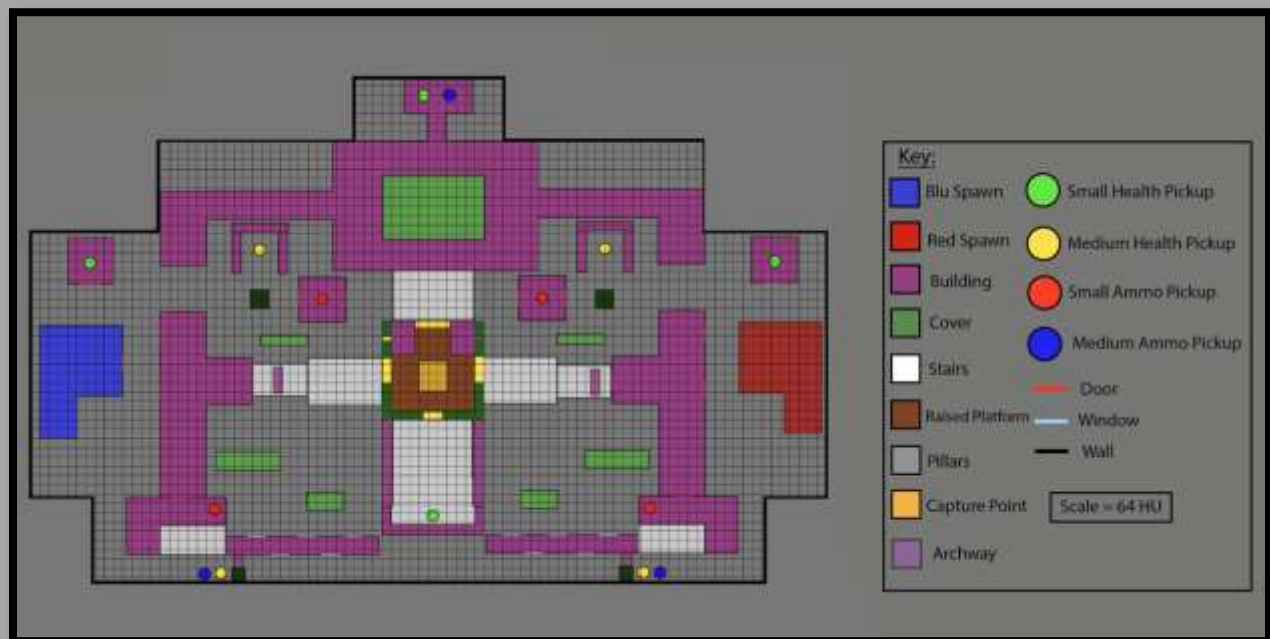
Aspects to keep in mind when creating the map:

- Considerations for different weapon ranges.
- Considerations for different playstyles, e.g. offense, defence, support.
- Considerations for innate advantages/disadvantages present within the level design and how to balance them.
- Considerations for skill expression and how to incorporate that within the level.
- Considerations for each classes' strengths and weaknesses, and how to balance around them.
- Considerations for gameplay elements, such as spawns, pickup placement, the structure around the point, and how that affects POI and conflict points.
- Considerations for affordance, how this will guide the player.
- Considerations for theme, how the theme will be conveyed through the blockout.



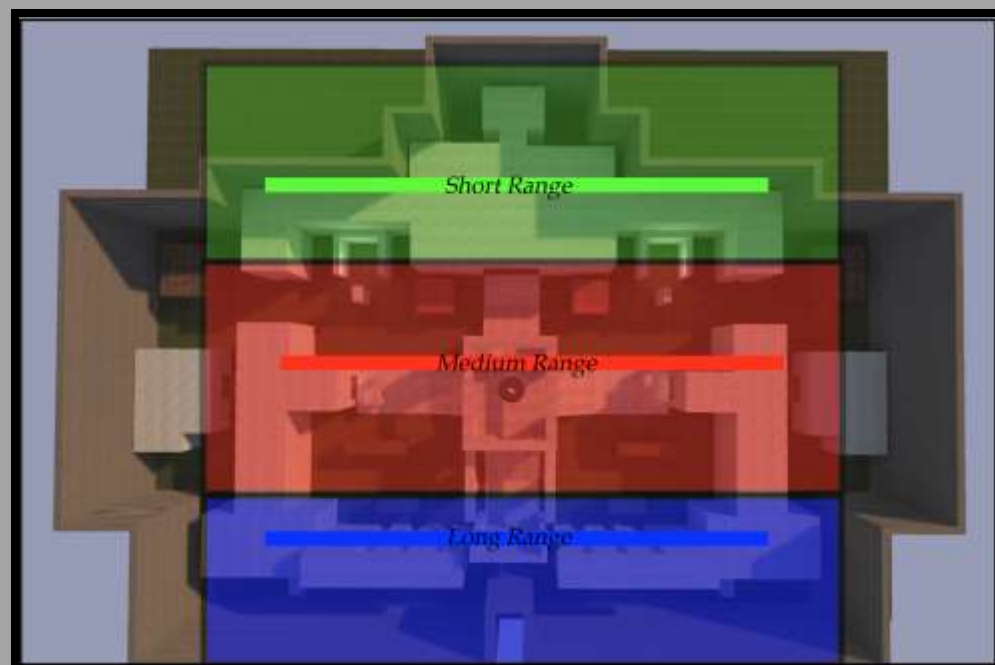
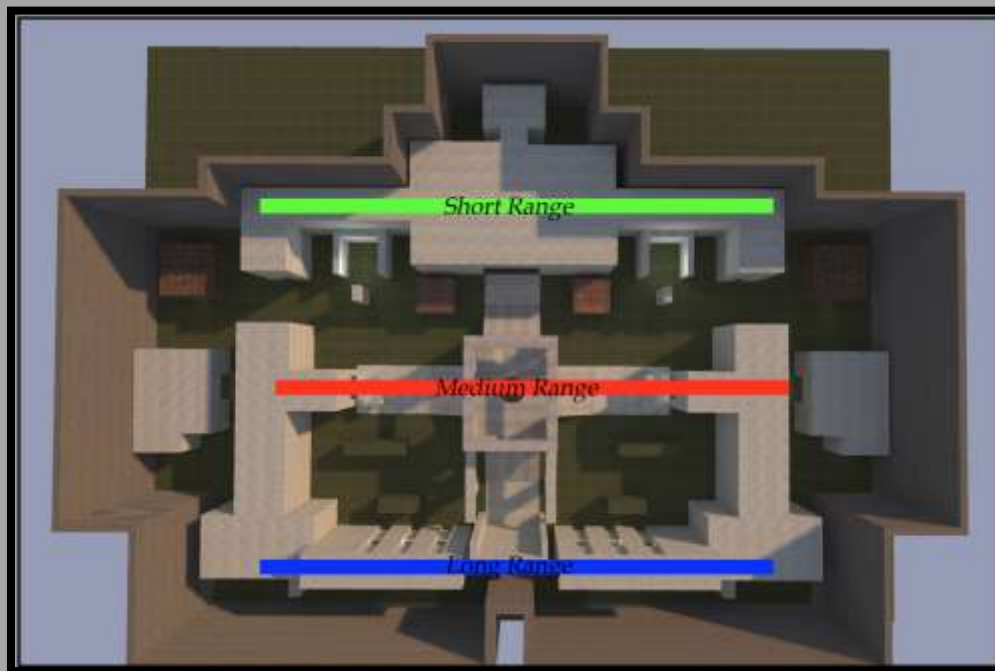
MAP STRUCTURE

Map Structure – Design Overview



The map was designed with the three-lane structure at the forefront of the design plan to ensure a balanced map that makes all classes viable. Each of the lanes offer various advantages and disadvantages, these being amount of cover, range, and how long it takes to navigate. In the centre is an elevated point which has pillars on each side which offer cover to both attackers and defenders. There is a ramp leading up to this point on each side of the map, making the point open to attack from all angles. The openness of the point was one of the ways balance was maintained due to an elevated point giving defenders an innate advantage. The design was intended to be simple to navigate and the elevated point to be the main attraction, which playtesters agreed with.

Map Structure – Three Lane Structure Visualiser Diagram



Map Structure - Lane Breakdown

Short Range Lane Positives

- Closed off space, suitable for short range classes.
- Gives a side angle of the point, allowing flankers to attack the point from the sides to create disruption and take attention away from Heavies attempting to push.
- Has a health and ammo pickup inside.
- Full cover from the player side of the map up to the side ramp of the point.

Short Range Lane Negatives

- Longest lane to traverse – designed for medium/fast paced classes who can make up for this distance
- The closeness of the lane means some classes will be at a damage disadvantage.
- Sightlines are small and closed off.

Medium Range Lane Positives

- Fastest lane to the point, suitable for Heavies.
- Lots of open space that players can utilise, keeping short range characters at a distance.
- Despite being open, there are various areas of cover that players can use to peek, dodge between and hide in.
- Lane with the most pickups allowing for players to get back into the fight quickly.
- Areas for rocket jumping/sticky bomb jumping.

Medium Range Lane Negatives

- Although there is cover, the area is open so players with poor positioning will be punished easily.
- The area is in the direct path to the point so if your team does not hold it, it will be difficult to navigate.

Long Range Lane Positives

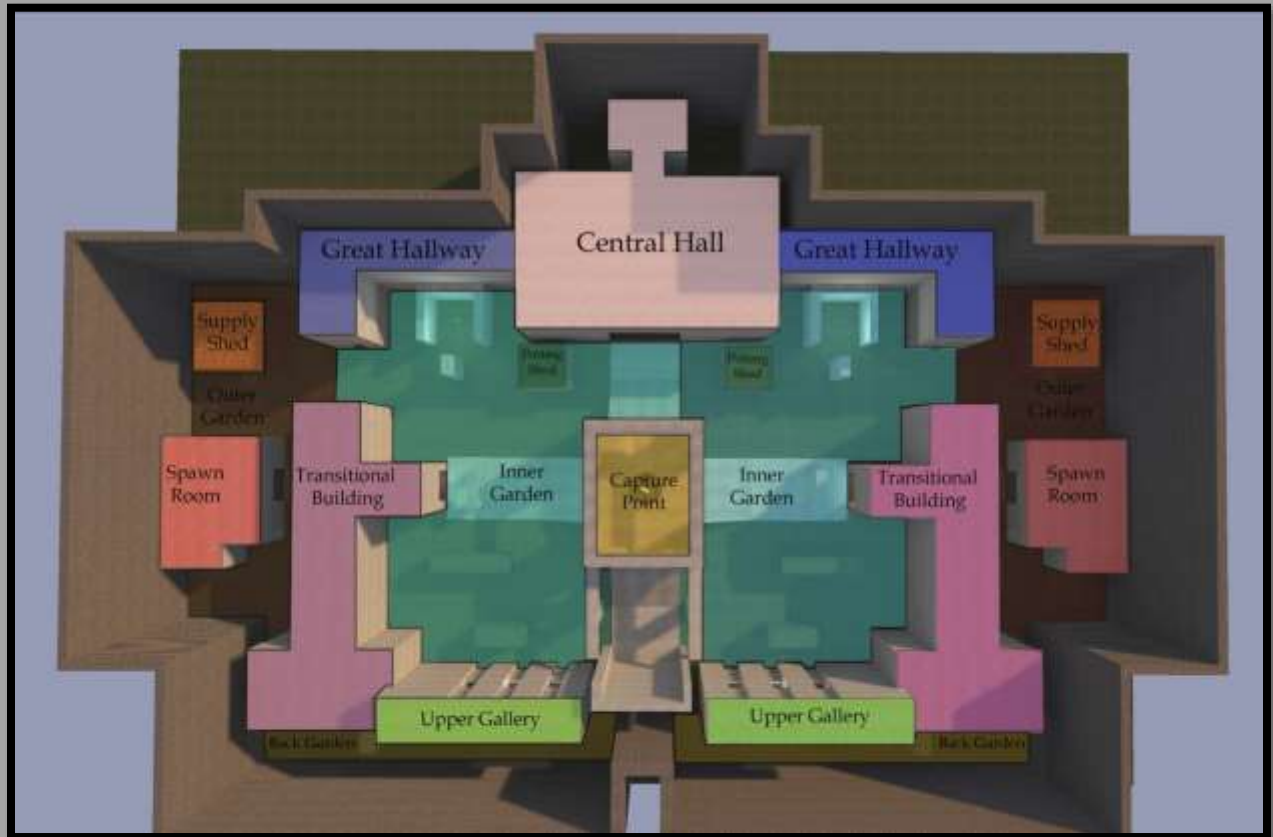
- This area has lots of cover to utilize.
- The Upper Gallery within the lane is tricky to get to for enemies, making it the safest lane.
- The Upper Gallery has an ammo pickup and a health and ammo outside it.
- The area has lots of elevated sightlines with cover some of the capture point and the player's side of the map.

Long Range Lane Negatives

- Despite being hard to get to, the lane has a flanking route which some flankers will utilize to get picks on long range enemies. The Upper Gallery is very narrow meaning flankers will often win against long range classes.
- Lane with the least number of pickups.
- Most isolated lane, making it take longer to switch between lanes.

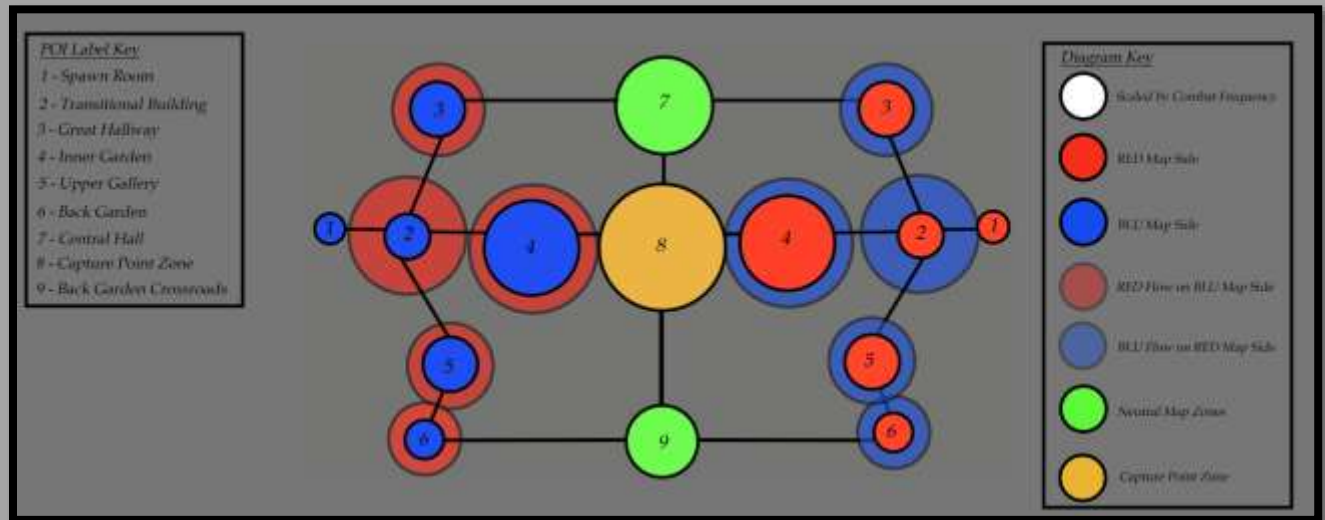
Map Structure – Map Points of Interest

Call-Out Diagram



This is a diagram of the map which shows the name of each area of the map. This would be used in a TF2 map to alert teammates to enemy positions and help team coordination. Throughout this document, these areas will be referenced for clarity. These call-out names were selected to reflect the Palace theme of the map.

Map Structure - Bubble Map Flow Diagram



Map Flow Overview

The flow of the map varies depending on what lane the player picks. For a lane like the Short-Range Lane, the player has more time to travel to make it to a big combat zone, but the zone is the biggest skirmish zone on the map beside the point. The medium range lane has less time to travel but has a higher frequency of combat as the lane is more open, compared to the short-range lane where most of the combat happens in one small zone. The long-range lane has the least combat frequency, due to it being more isolated and taking longer to flank, and most combat that happens within this zone will typically be between one flanker and one long range class.

Map Structure – Speed Tables

Speed Table: Palace Map Class Comparisons

Character	Spawn Room (Enemy)	Central Hall	Transition Building	Transition Building (Enemy Side)	Great Hallway	Great Hallway (Enemy Side)	Capture Point	Upper Gallery	Upper Gallery (Enemy)	Supply Shed	Supply Shed (Enemy Side)
Scout	14.28s	7.14s	2.40s	12.02s	6.72s	11.48s	6.22s	5.88s	17.70s	3.59s	14.34s
Heavy	24.92s	12.42s	2.82s	18.42s	8.35s	17.20s	10.19s	9.41s	24.37s	4.59s	15.59s
Sniper	18.45s	9.21s	2.57s	15.99s	5.27s	14.56s	8.22s	7.75s	22.24s	4.19s	18.00s
Pyro	17.77s	8.97s	2.38s	14.92s	5.92s	14.12s	8.20s	7.54s	21.66s	3.87s	17.57s

Key
S = Seconds

Speed Table: Palace Map Iterations & TF2 Map Comparison

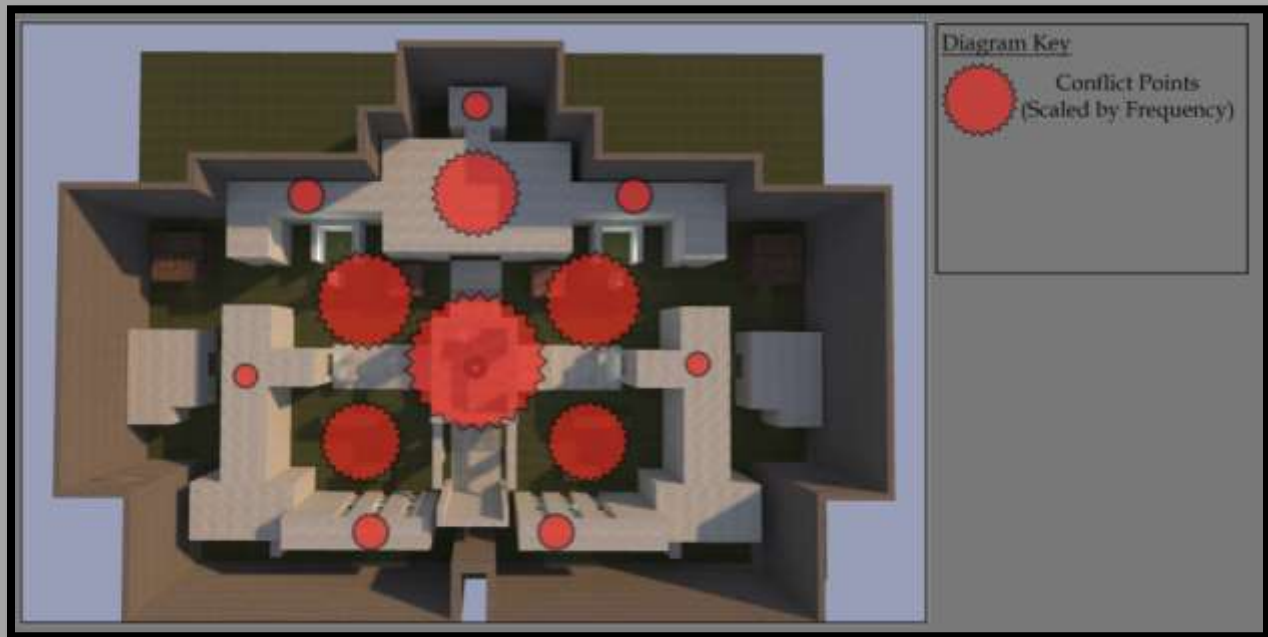
Scout	Spawn Room (Enemy)	Capture Point
Palace Iteration 1 (Student Map)	20.02s	8.92s
Palace Iteration 2 (Student Map)	14.46s	7.12s
Palace Iteration 3 (Student Map)	14.11s	6.62s
Palace Iteration 4 (Student Map)	14.02s	6.39s
Harvest	13.96s	7.45s
Viaduct	19.24s	7.29s
Sawmill	15.85s	6.78s
Suijin	14.85s	6.46s

Key
S = Seconds

Speed Table Overview

Data was recorded for how long it takes certain classes to navigate the map. This was also done again to compare the iterations of the map to official TF2 maps. This data was recorded to ensure the map fit TF2 conventions for scale. The map size changed a lot throughout the 4 iterations as playtesting feedback was received. The final map iteration fell between official TF2 KOTH map numbers and was at a stage where 69% of playtesters agreed the size was just right.

Map Structure – Conflict Points



Conflict Points Overview

This diagram is a visualizer that shows the conflict points on the map in a similar way to the bubble map which focuses more on flow. The data for this diagram was made through playing the map in playtest sessions alongside others and noting down where people would fight, and from spectating and playing in bot playtesting matches.

CHARACTER EXPERIENCE

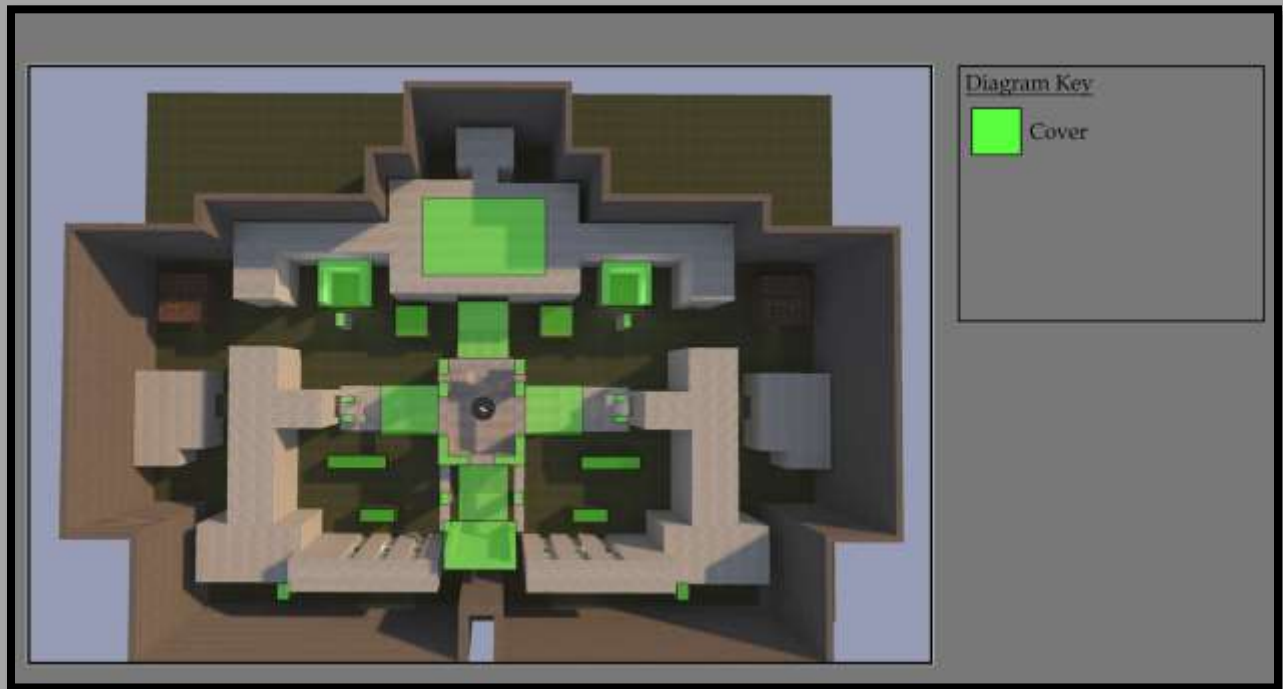
Character Experience – Map Elevation



Map Elevation Overview

Due to the map theme being a palace garden, the elevation was decided to come from buildings, archways and some blocks that represent shrubbery. The highest elevated points of the map are the capture point and the Upper Gallery, and the archway that connect the point to the southern archway. This archway is intended for characters with vertical movement abilities like Soldier and Demoman who can get up there. This is a good counter to snipers as you can fire into the Upper Gallery and get some better sightlines on the point. Other roofs were blocked off however, as they provided too much of an advantage. The archway that is not blocked off gives a notable advantage, but there is also geometry in the way that stops it from being too oppressive. Also, it puts the player in a direct sightline of the Upper Gallery as stated before, so it leaves players vulnerable to Snipers if they don't target them. Any other areas with medium elevation are roofs that do not give much of an advantage but could potentially be useful in certain situations and leaves some room for skill expression in these moments.

Character Experience – Map Cover



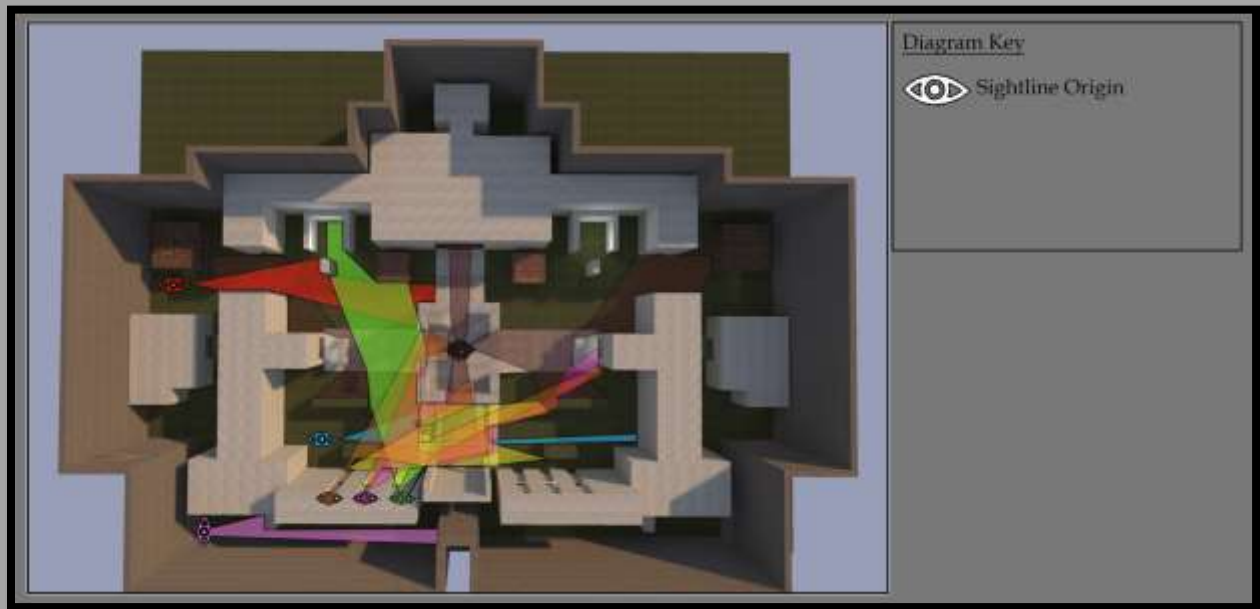
Map Cover Overview

Palace was designed to be an open and fast paced map while still adhering to TF2 conventions. The most open lane is the middle lane – the point and the garden surrounding it. The cover was placed to provide players a means of closing the distance on the point and traversing from lane to lane, while still being thematically appropriate; cover was placed as pillars, archways and shrubbery. The point being elevated also gives players some cover – for example, Medics can position themselves below the point making them less visible to the enemies on it. A playtester mentioned there being lots of areas for Medic to duck behind, which was something focused on during designing the map and through the iterations. The lane through the middle is open but rewards good positioning and players that utilize even unconventional uses of cover (e.g. the ramps), again being a way to allow players to have skill expression on not just offensive classes, but also on a passive class like Medic.

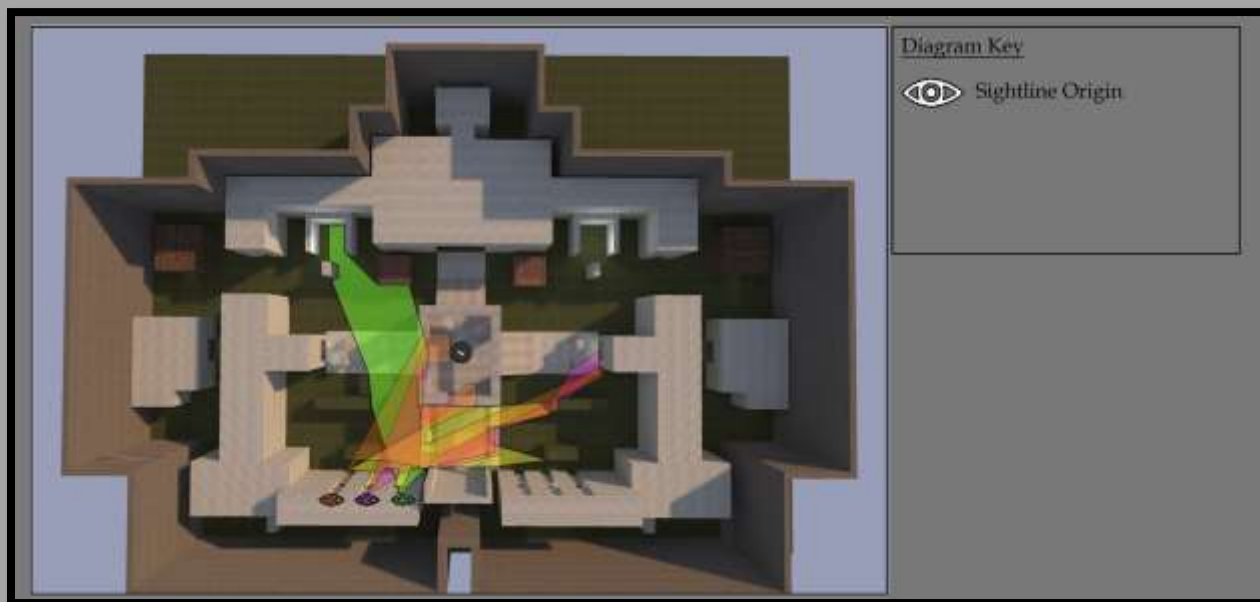
Character Experience – Sightlines

Note: Only the BLU side is mostly portrayed for visual clarity, but as the map is symmetrical, sightlines are the same on the RED side of the map.

All Map Sightlines



Upper Gallery Sightlines



Sightlines from Capture Point



Additional Sightlines



Map Sightlines Overview

Overall, sightlines were designed to not be oppressive. There are several blind spots throughout the map where only short-range classes are viable. Cover and map geometry was placed in areas to break up long sightlines and to aid attackers in traversing the map in a safer way.

POINTS OF INTEREST

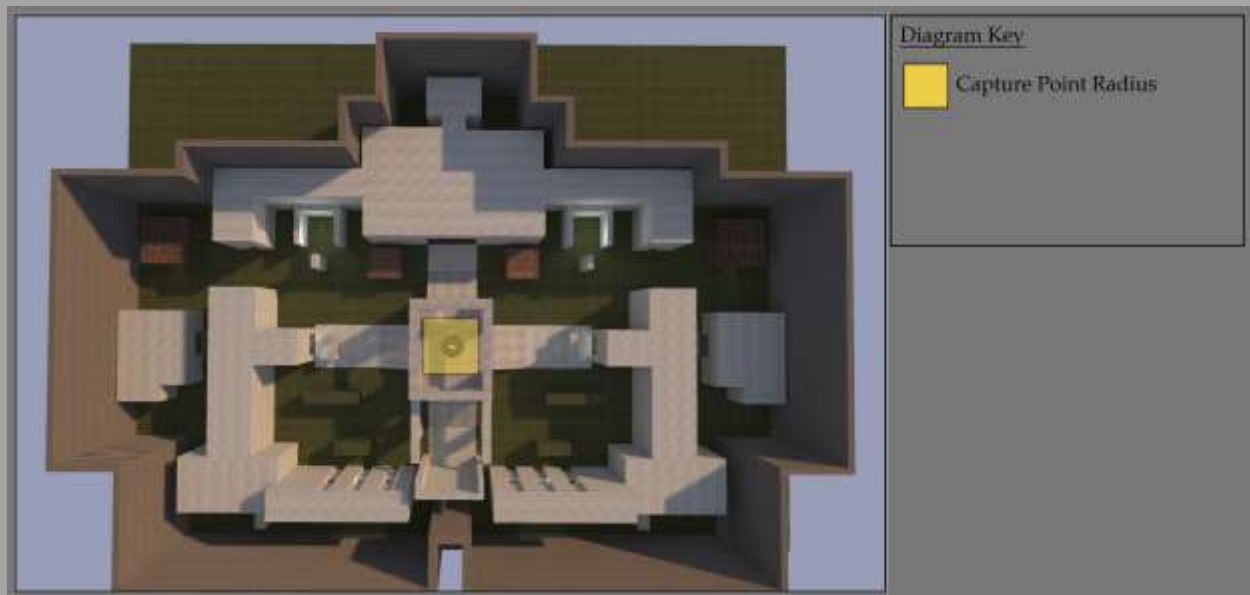
Gameplay Elements – Spawn Rooms



Spawn Rooms Overview

The spawn rooms for the map are identical – both have two doors and a supply locker. Since the top side of the Outer Garden is open, the secondary door is placed on the bottom side of the Outer Garden so that if players are being beaten into their side of the map, there is less chance someone will be there. There is a chance flankers will come from the bottom as it has a flanking route, however, this was a design decision based more on if a team is being beaten badly back, where players from the point push forward, and will most likely be positioned central or to the top side of the Outer Garden as they are more accessible routes to push onto a team.

Gameplay Elements – Capture Point



Capture Point Overview

The capture point is in the centre of the elevated area. Since the elevation gives attackers an innate advantage, the point is structured to be more open and is attackable from four angles. The capture point radius itself is mostly in the open, but there are a few areas where you can capture it from behind cover. This is again to reward good positioning through the use of cover.

Gameplay Elements – Pickups



Pickups Overview

Pickups were placed in a way that enables mostly enables attackers. This is because as stated before, the elevation of the point gives defenders an innate advantage. To combat this advantage and balance the map, pickups are placed mostly away from the point. This also means defenders must leave the point and their elevation to get ammo and health, making gameplay more unpredictable and chaotic. Pickups are placed to incentivise players to use different parts of the map and enable skirmishes. For example, the Potting Shed pickups and the small health pickup at the bottom are placed near the centre of the map and close to the point. This means players will have to risk going heavily contested zones if they want to restore health and ammo. Pickups are also placed as rewards. For example, the two pickups at the top of the map in the Central Hall are hard to get to because they lie in the centre of one of the biggest conflict points on the map. Most likely, players will have to win a skirmish to get to these pickups, rewarding a kill with health and ammo.

BALANCE

Balance – Bot Playtesting

Bot Playtesting Table: Match Results

Playtest Number	Winning Team	Time Remaining	Key S = Seconds
1	BLU	0:44s	
2	RED	1:12s	
3	RED	0:26s	
4	BLU	1:38s	
5	RED	0:07s	
6	RED	0:54s	
7	BLU	2:19s	
8	RED	1:58s	
9	BLU	0:32s	
10	BLU	0:27s	

Bot Playtesting Table Overview

Although bots aren't as reliable as real playtesters, they give a decent indication as to how well attackers and defenders preformed at their respective roles. The results were varied, #7 was a very strong victory for BLU team, whereas #5, #9 and #10 were close matches. The results ended in 50%-win rate for either side which shows it was balanced for either team.

Balance – Zoning Table

Character	Outer Garden (Enemy)	Central Hall	Transition Building (Enemy Side)	Great Hallway	Great Hallway (Enemy Side)	Capture Point	Upper Gallery	Upper Gallery (Enemy)	Inner Garden	Inner Garden (Enemy)
Scout	Yellow	Green	Yellow	Yellow	Yellow	Yellow	Red	Green	Yellow	Green
Heavy	Yellow	Green	Yellow	Yellow	Yellow	Green	Red	Red	Yellow	Green
Sniper	Red	Red	Red	Green	Red	Yellow	Green	Yellow	Green	Yellow
Medic	Red	Yellow	Yellow	Green	Yellow	Green	Red	Red	Green	Yellow

Diagram Key

- Optimal Area
- Viable/Situational
- Not Viable

Zoning Table Overview

For the zoning table, four classes were chosen that all have unique playstyles and broken down into how optimal they are in some of the POI within the map. The table shows that each class has strengths and weaknesses, and in some of the POI where one class shines, one will not do well. This is to ensure each class is viable and has an area of the map they can work within. Making sure a class does not excel in too many areas was achieved by adhering to the three-lane structure theory.

VISUAL DEVELOPMENT

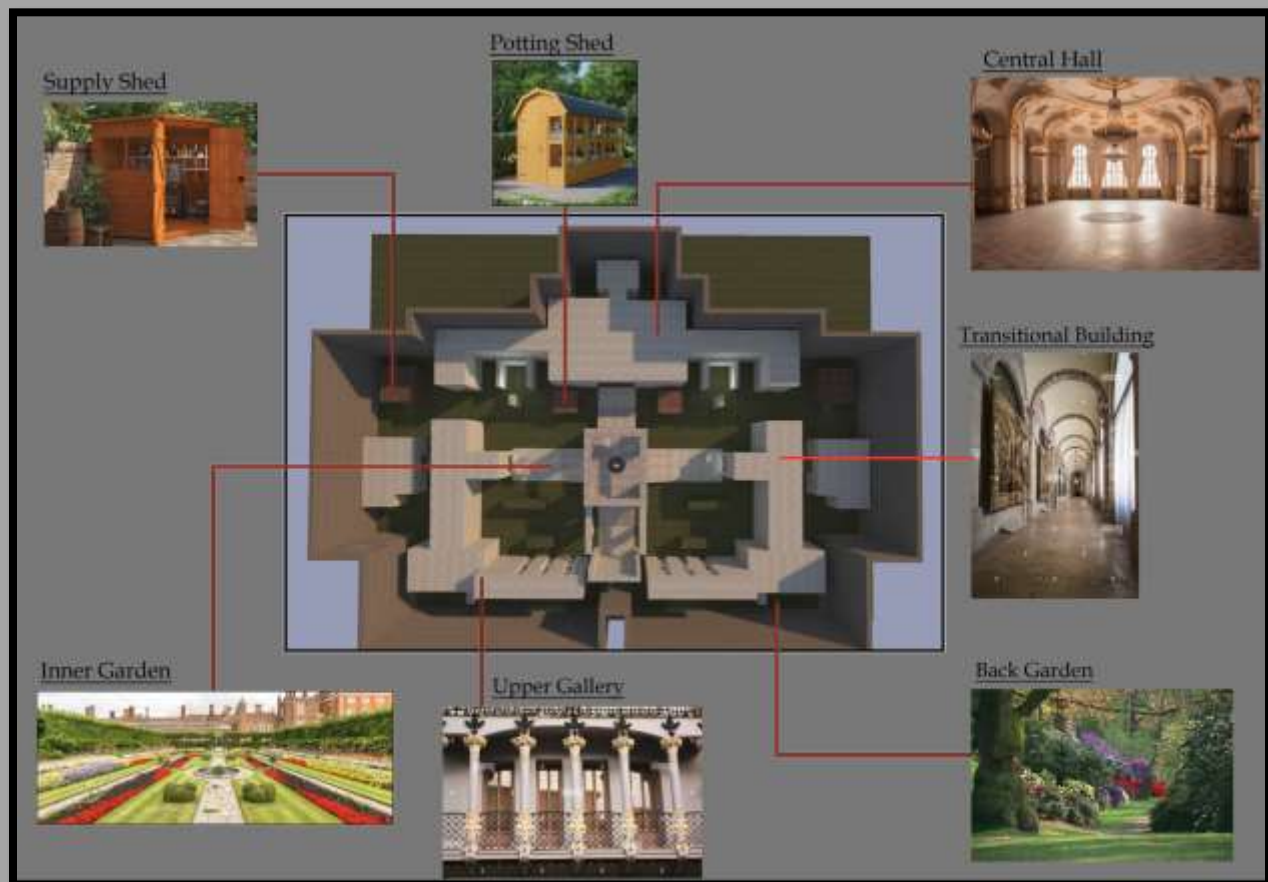
Visual Development – Theme Moodboard



Theme Moodboard Overview

The moodboard was made very early in the development of the iterative process to give some ideas for how to design the level. This aided with how to combine the theme with the TF2 map project, mainly through cover ideas, such as the pillars, shrubbery and archways.

Visual Development – Visual Reference Map

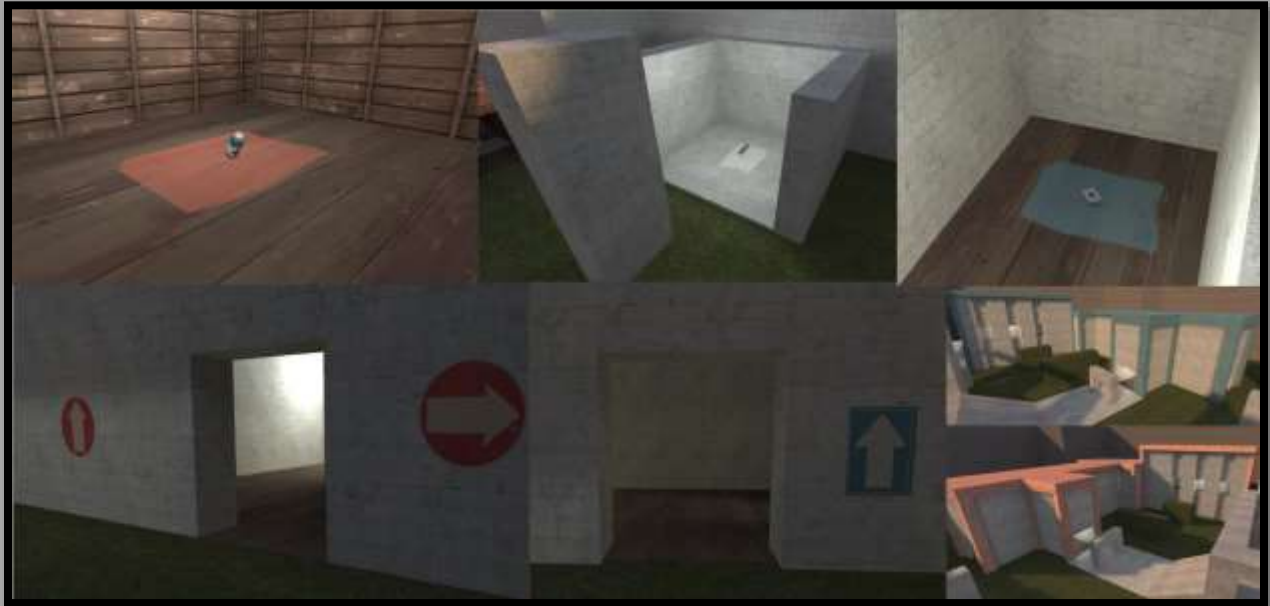


Visual Reference Map Overview

This Visual Reference Map was made at the end of the map's development and was created to give an idea of what each area is supposed to represent if it were fully meshed. Some of these are too detailed and extravagant for TF2 and would have to suit the art style of the game, but these images give a general idea of what each area is supposed convey.

AFFORDANCE

Affordance – In-Game Visuals



In-Game Visuals Overview

The In-Game visuals shown above are ways the map has used affordance to help guide the player through the map. Colours are used to represent both the BLU and the RED team, such as the pickup overlay colour, the sign colour, and the rims of the buildings. Since Palace is a more formal theme than some TF2 maps that are more industrial based, the way of showing BLU team from RED would have to be done in a different way than using the industrial themed overlays present in the game. Suijin was used as inspiration – this is a Japanese shrine themed map, where the visual affordance for RED/BLU is symbolized through red/blue signs and red/blue roofs, compared to a map like Highpass, where it is symbolized through industrial themed overlays. Since it is a Palace Garden, the way of presenting it had to be more subtle to fit the theme, while also still guiding the player adequately.