

# Retro Shooter Analysis

The purpose of this analysis is to gather enough information to make a level block out for a retro shooter-type game as they are made by *Nightdive Studios*.

## Characteristics

A modern *Retro Shooter* like *Dusk (2018)* generally has the following characteristics:

- Fast-paced action
- Simple mechanics like limited movement options, non-regenerating health, and a focus on quick reflexes.
- Pixelated or low-poly art styles to resemble older games.
- Minimal story, with more focus on raw gameplay.
- Limited modern conveniences like cover mechanics or advanced physics.

## Relevance for Level Design

Since Retro Shooters try to mimic Classic Shooters like *DOOM (1993)* it is acceptable to look at these Classic Shooters for references as well.

To ensure levels fit this type of game they need to follow some key principles:

- **Player Speed:** allow fast-paced movement without getting slowed down by obstacles. Avoid tight or cramped spaces unless they follow a specific purpose. Limit Bottlenecks. Players need to be able to strafe, dodge and circle enemies.
- **No Cover:** The player is expected to constantly move and dodge while shooting. Levels should encourage this and discourage hiding. Wide open spaces are best.
- **Complex Interconnected Layouts:** Multiple
- **Multi-Level Structure:** Players need to be able to traverse stairs and ramps smoothly. Traversal should not slow down the flow. Jump Pads and Elevators can also be used.
- **Enemy Placement:** Spawns/Waves should be placed to encourage movement and discourage sniping enemies off from a safe place. The player can enter a room from multiple sides or multiple times. It is acceptable to spawn enemies in other rooms behind the player in case they backtrack.
- **Enemy Variety:** mix room sizes and enemy types to create more variety.
- **Keycard Doors:** This can create tension and help the non-linear flow. They can lead to new areas or be used for backtracking and help to give a sense of progression.
- **Switch-based Puzzles:**
- **Resource Placement:** Health does not regenerate over time. Planning out where players find health, ammo or other pickups is crucial for the flow. Don't oversupply the player and reward exploration. Placing at least double the amount of needed ammo is recommended.

## Scales

For reference, I will take Quake. I will skip the quake units here and only refer to real-world units instead.<sup>1</sup> I will translate some values from quake units as well.<sup>2</sup>

### Player Character Height

The main character in Quake (Ranger) is approximately **1.98 meters** tall.

### Player Run Speed

The run speed of the ranger is **13.2m/s** which translates to 47.52km/h.

### Player Jump Height

In Quake the Ranger can jump **1.77m high** by itself. Trick Jumps may add to this and open up hidden areas or paths.<sup>3</sup>

### Room height

Adding jump height and the height of the player character means that rooms must be at least 3.76 meters high but it is best to add another meter or a half to avoid the feeling of bumping the head. This results in a room height of **4.26 - 4.76 meters**.

### Room Width

The width of a regular corridor is 2 approximately meters. To accommodate the speed of the player and allow strafing without bumping into walls all the time the width of a corridor should be no less than **~4 meters**.

### Gap Distance

To make a gap appear manageable to jump over the distance should be ... .

To make a gap appear impossible to jump over it should be at least ... .

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<sup>1</sup>Slipseer.com:

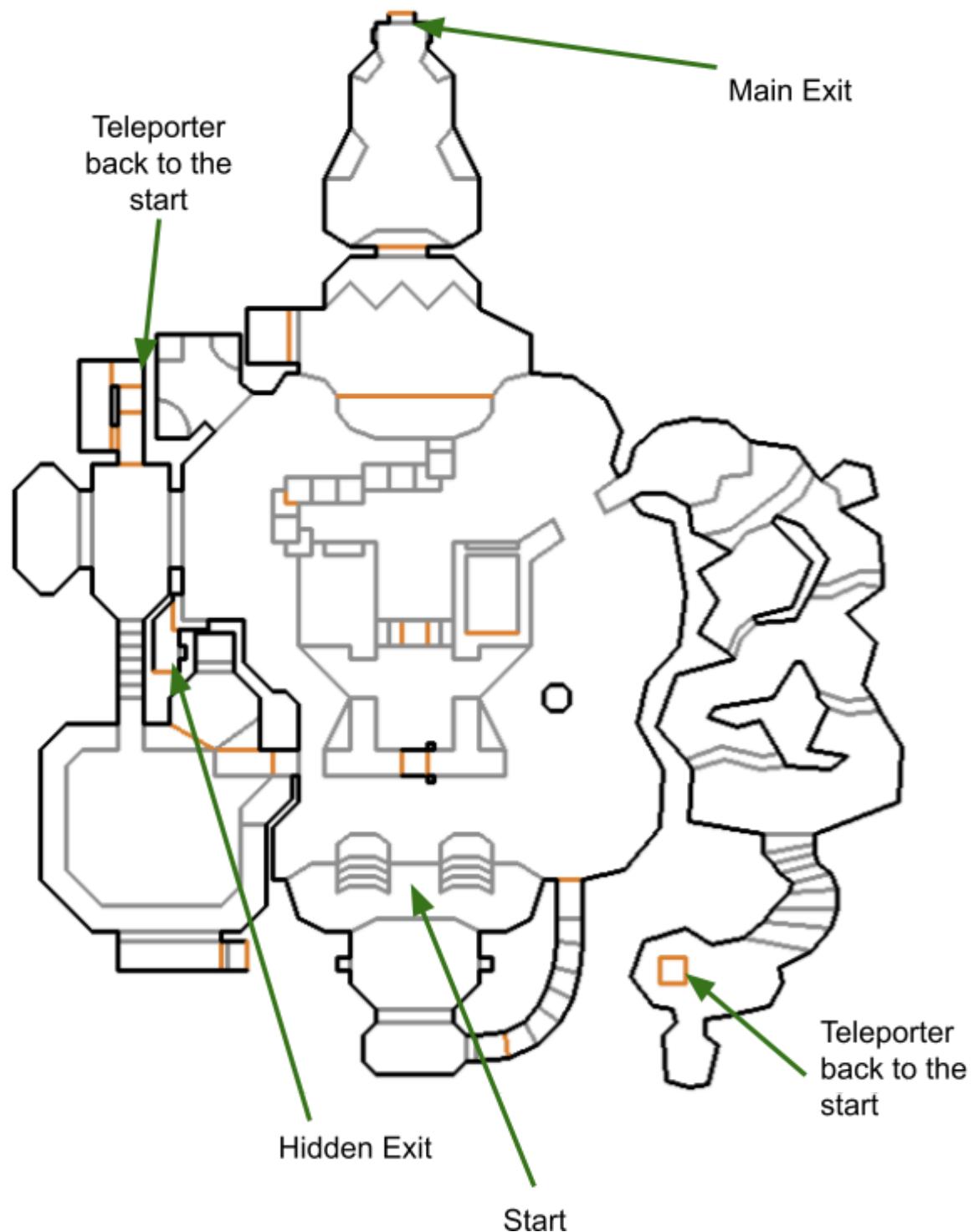
<https://www.slipseer.com/index.php?threads/quake-scale-and-perspective-is-weird.335/#:~:text=In%20Quake%201%20Ranger%20can.%20away%20from%20the%20ground>

<sup>2</sup>leveldesignbook. <https://book.leveldesignbook.com/process/blockout/metrics/quake>

<sup>3</sup>Quakewiki: [https://quakewiki.org/wiki/Trick\\_Jumps](https://quakewiki.org/wiki/Trick_Jumps)

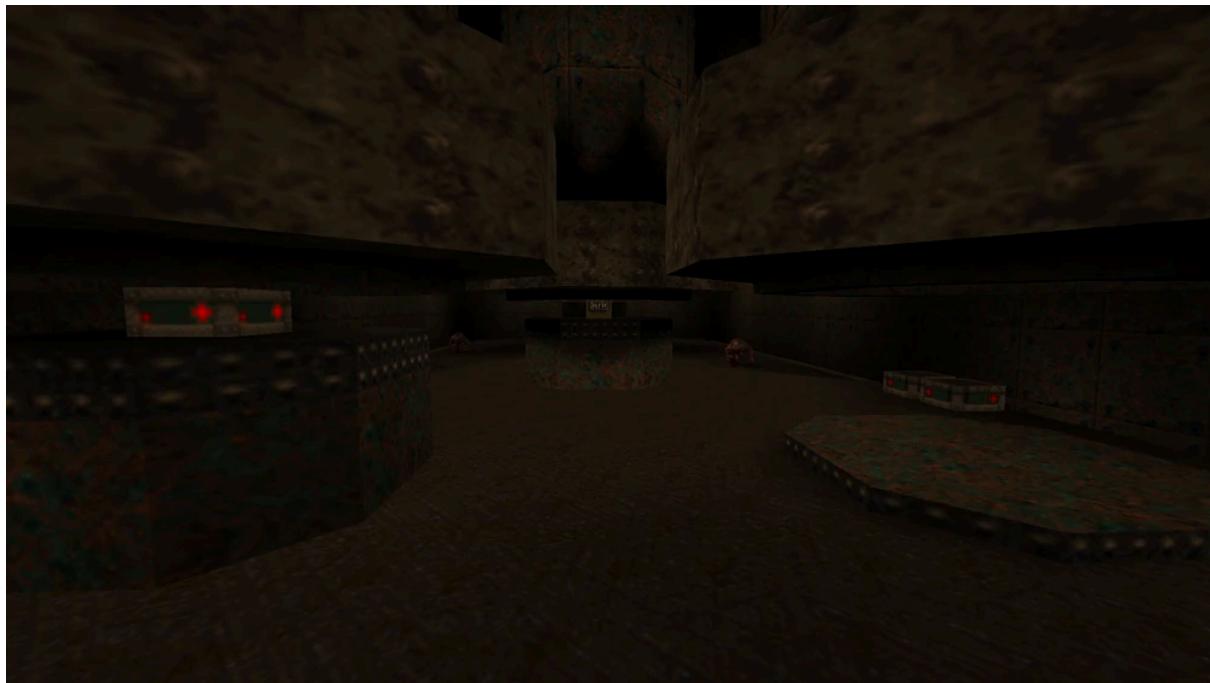
## Reference Levels

E4M2: Perfect Hatred – *Doom* (1994) and *Ultimate DOOM* (1995)



The level spawns the player directly in combat with multiple enemies in a hub room. Two stairs serve to help the player reach the central platform. The level contains a lot of barons and kako demons but also a BFG Weapon.

## The Wind Tunnels – Quake (1996)



- Introduces a new mechanic: wind tunnels: they transport the player when jumping to a new area and feel very fast. Might either be inspired by *Super Mario* (1985) or *Jedi Knight Dark Forces* (1995). The player can continuously jump onto the exit of a tube below and get propelled upwards.
- Regular teleporters are also present
- The level revolves around one room where the player can enter 3 different wind tubes total to different sections of the map. Two are locked at the beginning. Flying and jumping enemies are here.
- First room after the hub room has multiple enemies on balconies and leads to a corridor with flashing lights and two jumping enemies. The player can utilize the jumping on the tube exit here to shoot at the enemies from above. A hidden room contains rockets
- The corridor leads to another arena like hall with a water pit on the left, and a button on the right and a locked tube in the back. The hall is filled with flying and grounded enemies.
- The button opens a hole down into a sewers like section where some enemies are half submerged. The player swims below the water and ends up in the main hub room.
- The now unlocked tube leads again to a room with jumping and flying enemies. The center floor has a railing and the player may fall below into the water of the hub room if not careful.
- Next room has a secret underwater: rocket launcher
- Shoot at switches way above or hidden in the floor
- A sky box is seen through slits and small gaps in the ceiling

## Links

Quake Metrics: <https://book.leveldesignbook.com/process/blockout/metrics/quake>

Scaling in Quake:

[https://www.slipseer.com/index.php?threads/quake-scale-and-perspective-is-weird.335/#:~:text=In%20Quake%201%2C%20Ranger%20can,"\)%20away%20from%20the%20ground.](https://www.slipseer.com/index.php?threads/quake-scale-and-perspective-is-weird.335/#:~:text=In%20Quake%201%2C%20Ranger%20can,)  
[https://quakewiki.org/wiki/Trick\\_Jumps](https://quakewiki.org/wiki/Trick_Jumps)

Wind Tunnels Playthrough: <https://www.youtube.com/watch?v=NkQuJ6dk9B4>

Perfect Hatred Map Playthrough: [https://www.youtube.com/watch?v=vs\\_tRvVNzCQ](https://www.youtube.com/watch?v=vs_tRvVNzCQ)