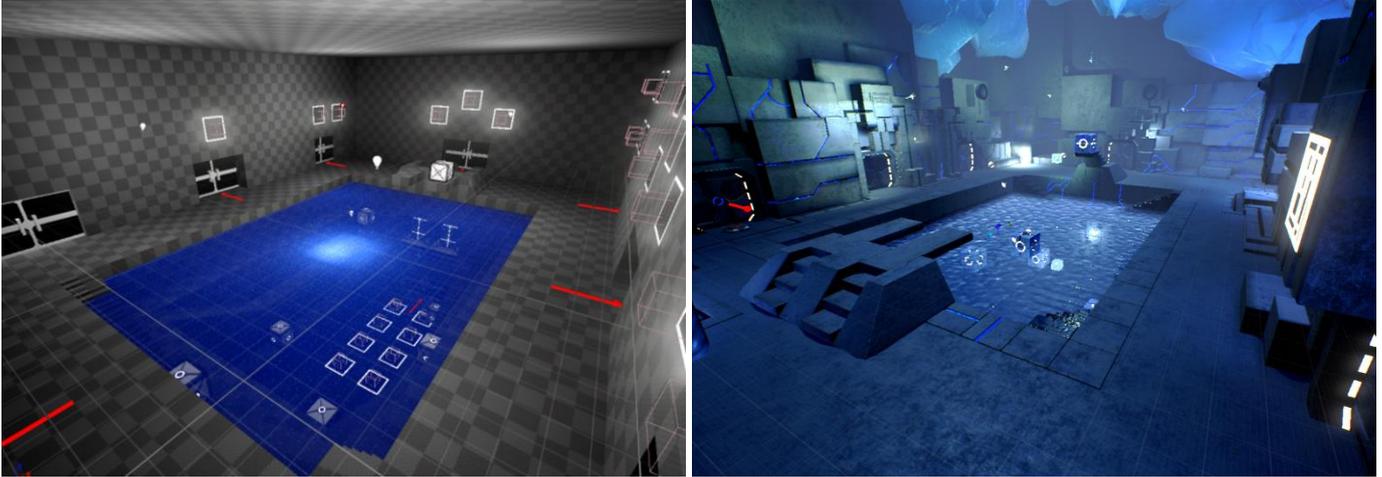


Pool Area, Level Design Reflection Document

In this document, I will try to describe how the pool area transformed from its original whiteboxed state into the final shape it has taken until now. I will discuss feedback I have received for each area and how I have tried to implement that feedback. At the bottom of the document, I will reflect on the entire process of whiteboxing.

Pool Room



The pool room is the first room of this gameplay section that the player will see when they enter through the door seen in the middle of the left of the screenshots. The room is meant to feel big and spacious.

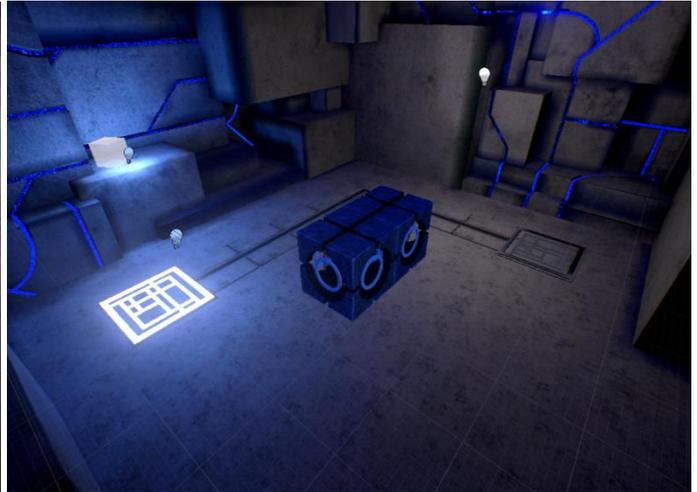
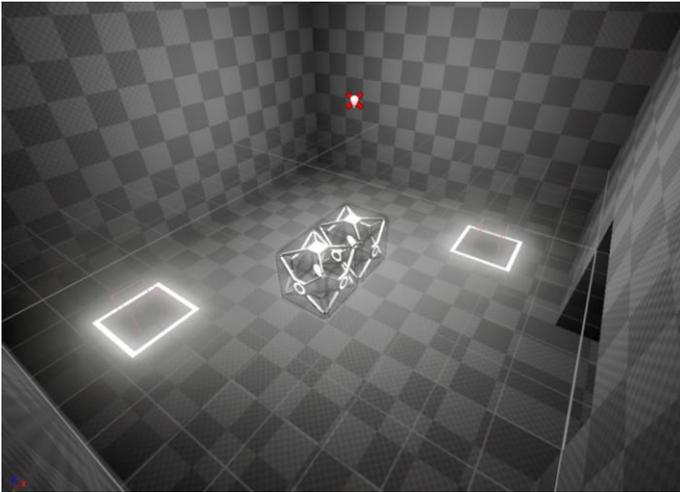
In the earlier whiteboxed version, I had placed a number of activator tiles above each door, representing its number. The idea behind this was that the player would need to grab an anti-gravity block and move it to door #1 to open it. After finishing the first puzzle, the water would lower, and the player would have access to another anti-gravity block. They would then need to get the additional block out of the pool, and move the first block from the initial activator tile to the next door.

I received feedback about this section of gameplay being rather tedious. It is neither difficult to think of the solution to move the blocks around, nor is it difficult to actually get them in place, but it does take a player a lot of time. I have tried to solve this by just placing one activator tile above every door in the final version, so that players would only need to grab the new block from the pool and place it on the activator tiles from there. In order for players not to mess up the level order, I had the first activator tile power the next one on, so that I would still have control over the order in which a player would play the puzzles. I decided to keep the blocks in the pool, because that would focus the player's attention on the pool every time they come back to it. This way, a player is bound to have a sense of progression through the levels, as the water level keeps falling further, slowly revealing the doorway to the next section of the Water Wing.

Another piece of feedback I received about this room was that it was counter intuitive to have the first room to the left of the entrance, as most people would miss the glowing activator tile and walk right passed it. This is why I switched the positions of the rooms, in order to have the first room positioned right across the entrance door. This immediately draws the attention of most players to the first door, so that they immediately have a clue of where to go next. They would still need to explore the area a bit further to find the anti-gravity cube that they need to use in order to open it, but they would have already seen the activator tile at least.

I have tested the results of placing the first anti-gravity cube on the diving plank right in front of the entrance, but it would often result in players just going forward into the first room, without taking in the scenery. After finishing puzzles, these people would have more trouble to notice any changes to the pool room, like the water level having been lowered.

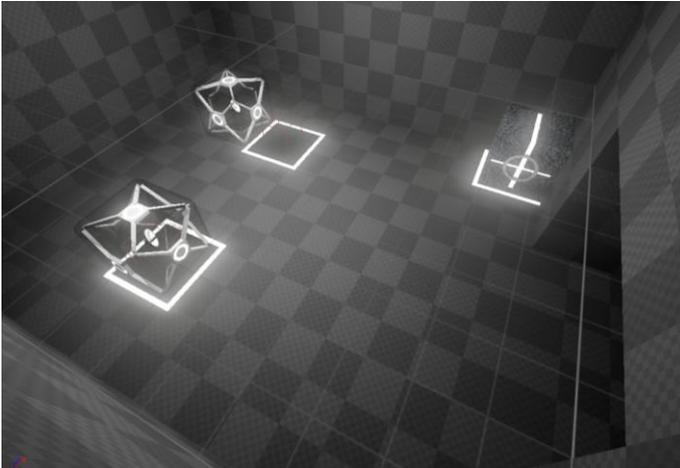
Puzzle 1



Puzzle 1 is a relatively untouched puzzle from the beginning. The sole purpose of this puzzle is to teach the player the Link Block mechanics in a safe environment. This room is a perfect square and it is impossible to move the link blocks into any position from which the puzzle becomes more difficult. If a player succeeds in placing one of the blocks on an activator tile, the other one will automatically have been placed on the other tile.

A very important design decision was to have the blocks stand next to each other in their initial position. This way, players are sure to notice the behaviour of the link blocks, as shooting on will affect the other. This whole process is also guided with voice lines.

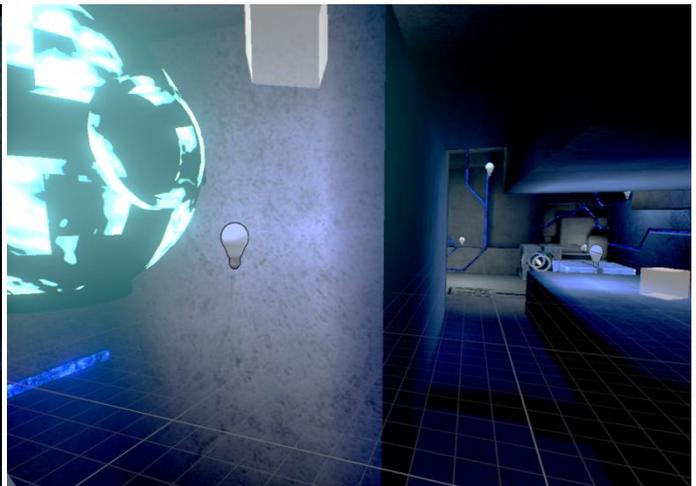
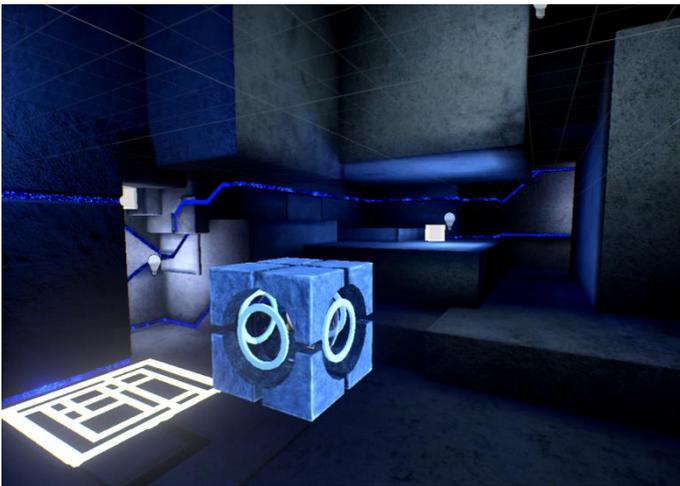
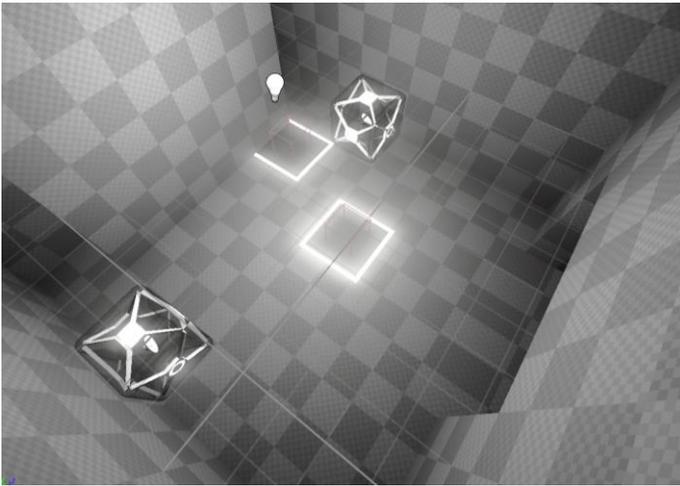
Puzzle 2



For puzzle 2, I wanted to teach the player that link blocks do not always automatically end up on the right activator tiles. Pulling one of the link blocks on the activator tile, would push the other off. The basic block, which the player would be familiar with at this stage of the game, can be used to block one of the link blocks from moving, while still being able to move the other. This way, a player can manipulate the link blocks to both end up on the right activator tiles.

As the image above illustrates, the basic block's location has been changed. This was due to testers missing the block when walking into the room, and not noticing it until the puzzle was already frustrating. Currently, for the puzzle to be completed, all 3 blocks need to be on the right activator tiles. I am however considering to remove the middle activator tile, because players had found it confusing which block needs to end up on which tile. The additional challenge of placing the basic block on the middle activator tile is also not meaningful gameplay.

Puzzle 3



This puzzle is essentially similar to the previous one, except that there is no basic block for players to use to manipulate one of the link block's movements with. This means that a player would now need to actively search for a solution within the environment in order to move one link block, without affecting the other. Interestingly enough, this puzzle was a lot easier when we tested people with the whiteboxed version, than it was for the people playing in the final versions.

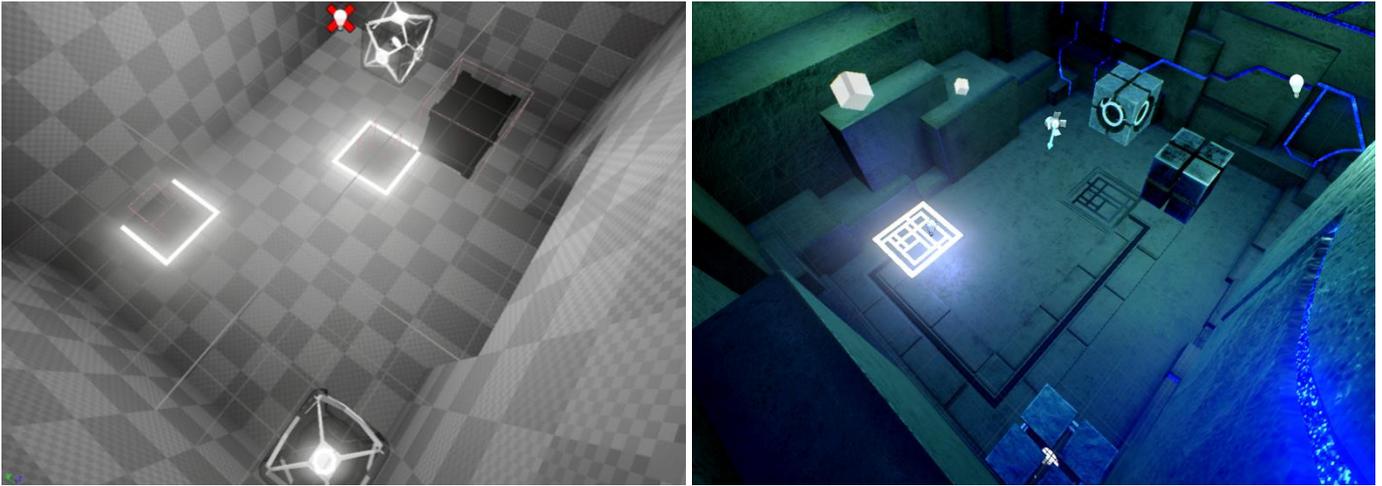
The problem was the visibility of the corners of the room. In the whiteboxed version, there is nothing to distract the players from the shape of the room and it is therefore very clear that players need to use the gaps in the wall in some way. Especially since the last two rooms were perfect rectangles, the gaps in the wall would stand out a lot.

With the final version, players would have a blind eye for these gaps in the corners, because there are more gaps in the level that cannot be accessed with the blocks. In order to help guide a player's attention towards the usable corners, I have placed light sources in the corner to attract their attention.

This experience has taught me to use the environmental objects wisely. I have to be cautious of making a puzzle unnecessarily more difficult in order to make the scenery look nice. As it so happens, Portal, a game which success we would very much like to live up to, has struggled with the same issues, as environmental clutter would only distract their players from meaningful gameplay. We will definitely be careful with making this mistake, but we will need some additional playtesting sessions to draw more solid conclusions.

I have also hidden a pick up in this room, to try and stimulate players to actively explore the environment. The pick up is not essential for players to continue the game, but would be a nice reward for their exploration in the form of an audio log or clue. There is a light source next to the pick up to try and lure the attention of watchful players towards it, without making it too obvious to everyone.

Puzzle 4

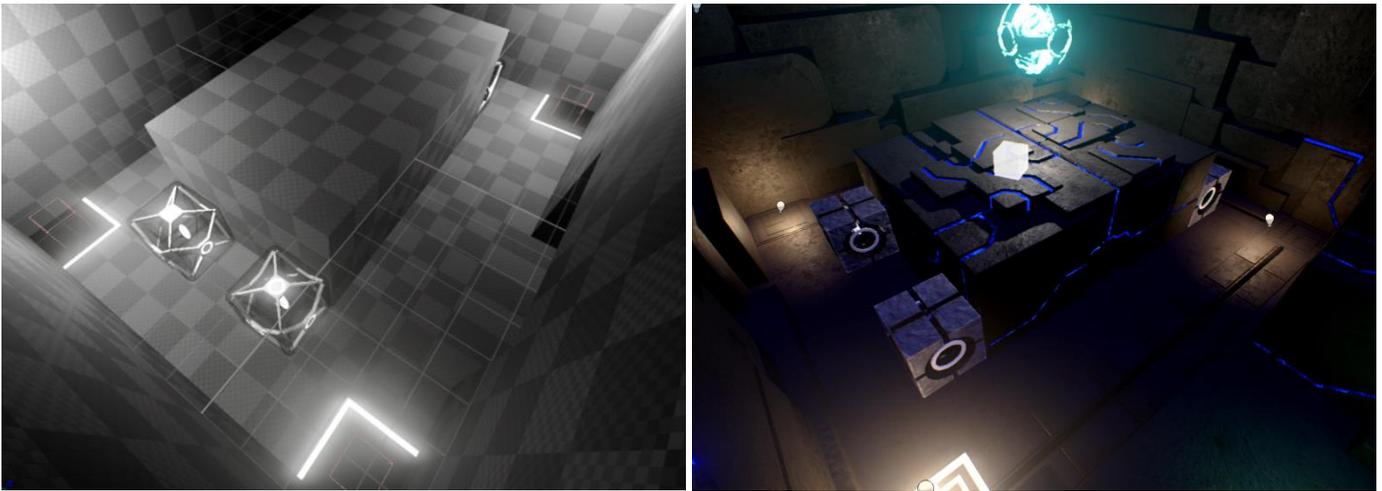


This puzzle could be seen as a combination of the two previous ones. Just like puzzle 2, the player needs to use a block in order to move one link block while blocking the other, but instead of a block they can manipulate themselves, this time they have to use the metal block in the room, that they would be unable to move. The added difficulty to this room is in having to use the metal block to block one of the link cubes in two directions, before the solution becomes available.

After completing this puzzle, I hope I can assume that players understand how the key to solving link block puzzles is to try and get one of them stuck somewhere, to move the other. This is one of the more difficult puzzles, despite for the fact that the solution is very easily recognised. This makes it a really fun puzzle and we have received very good feedback about it so far.

The only thing I am considering to change is to replace the metal block with an environment cube. The reason for this is that we want to try and introduce players to separate mechanics in separate wings, and the metal block is introduced to the player in the Generator Wing. By using an environment cube, the puzzle will essentially stay the same, but there should be less confusion about what can be done with the metal block.

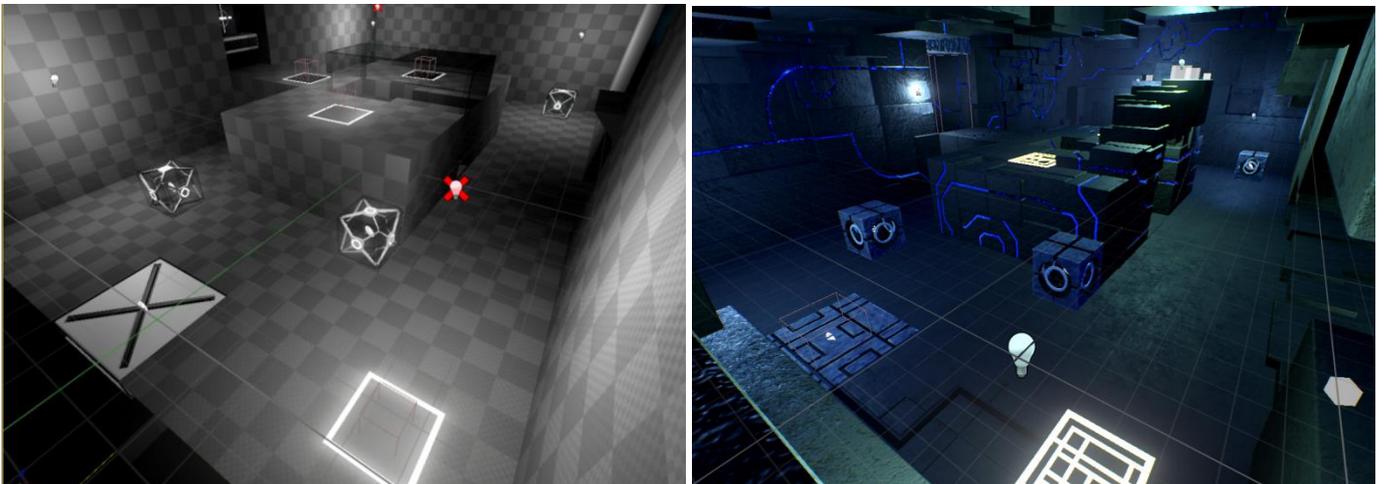
Puzzle 5



Despite its complicated looks, puzzle 5 is actually one of the more simple ones. This puzzle's sole purpose is to teach players that multiple link blocks can be in the same room and that a pair of link blocks will always share the same colour. Because the puzzle was so easy, I have added the piece of stone in between the activator tiles, to try and add difficulty by reducing visibility. I have also placed a collectable item in the centre of the room, which is clearly visible, but takes some skilled jumping to reach.

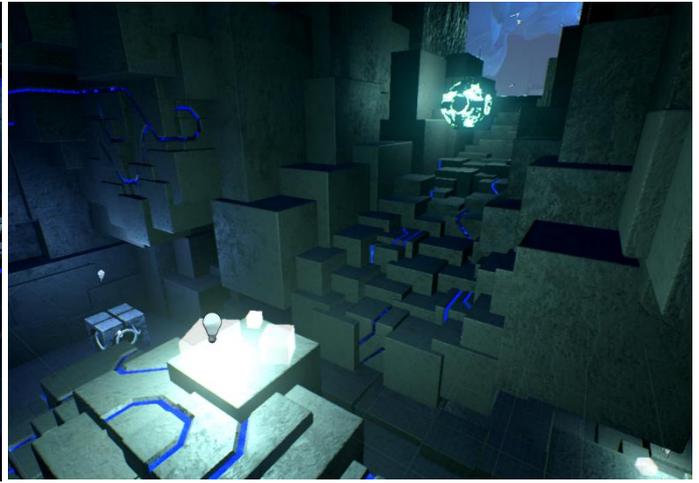
This way, I'm trying to alternate the difficulty in getting pick ups. Some of them will be difficult to find, others might be difficult to reach. Again, it is not vital for gameplay progression to collect the pick ups. They merely serve as an additional bonus reward for players who enjoy side quest objectives.

Puzzle 6



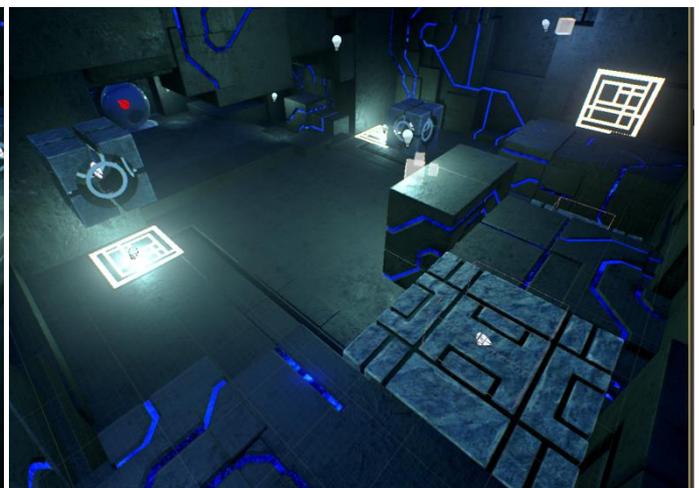
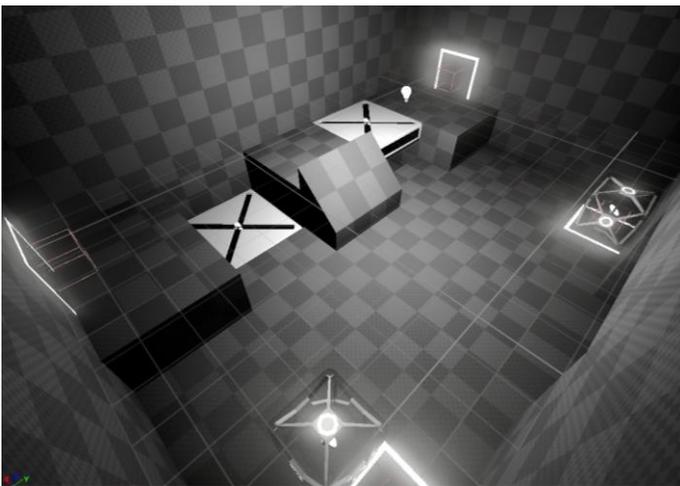
This was originally the last puzzle and as such I had tried to make it necessary to combine the skills learned throughout the previous levels in order to complete this one. Again, this level has two sets of link blocks, with which players need to work. The goal of the puzzle is to set up a pair of link blocks in such a way that they can be simultaneously shot from the elevator onto the elevated rock in the middle. There are several ways to do this and that makes this an easier puzzle than I originally expected. This is not necessarily a problem, but it did mean I had to reorder the puzzles and make this one number 6.

This room still contains a lot of problems though, as it is unclear to players what needs to be done in the room. I have already thought about solution to signpost the objective of the room more clearly and I am looking forward to implement them in block C.



This room contains two pick ups, one is hidden to the player and the other would require them to complete an additional 'hidden' puzzle that can only be seen after completing the gameplay required puzzle. This way, I have tried to encourage players to look beyond just solving a puzzle. A nice reward for players that find the hidden pick up, is that by navigating towards it, they can get a high-up view of the pool room and jump down from there. This is not necessary in any way, but it is my favourite part of the entire pool area.

Puzzle 7



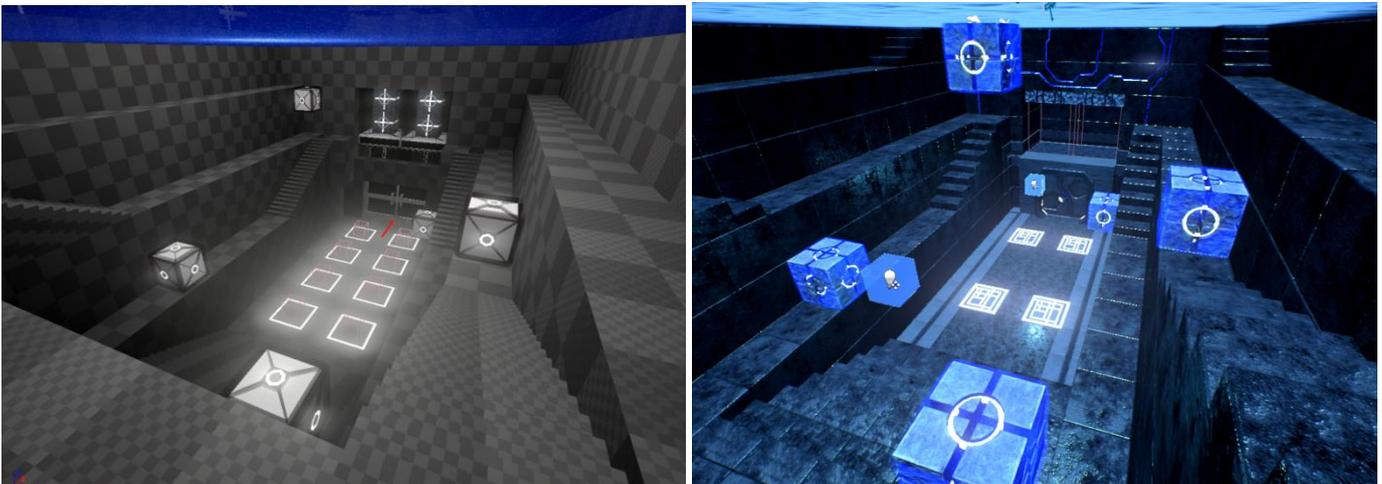
This puzzle was originally the third puzzle that players would encounter, but turned out to be the most difficult of all. Players would get stuck or take very long to figure out the solution and many players found the difficulty increase to be very unfair. In the final build, I have swapped the order so that this puzzle would be the final test for the player.

Most players would still find it difficult, but having been skillgated through the previous puzzles, they would stand a better chance of completing this one.

One thing that I have noticed in particular with playtesting in this level, is that the objective of the puzzle is very unclear. Players do not recognise the desired end state of the puzzle and would therefore just try out some things before they would get the right solution. This felt unfair to them, as the game did not signpost the desired end-state of the puzzle. I have taken this feedback into consideration and I will make sure that the activator tiles needed for level completion will be signposted to the player.

Another signposting issue I had with the whiteboxed version in particular was that players did not see the connection between the activator tiles and the elevators in the level. I have attempted to fix this by having energy wires run from the activator tiles to the elevators, to signpost their connection.

Pool Room



After completing all the puzzles, the water level would have lowered to the point where the player is able to walk on the pool floor. Placing a diving plank in front of the final puzzle makes jumping in the pool all the more rewarding for the player. There used to be 8 activator tiles on the floor, which was a leftover signpost for the player to understand that it would need to be reached after completing puzzle #7, which had 7 activator tiles back then. However, now that all rooms could be opened up with one block, it seemed useless to have 8 activator tiles on the floor here. Not to mention it was a tedious task for players to have to complete.

Instead of changing it to one, I kept 4 activator tiles, because of their light drawing a player's attention from above the water during the playthrough. This way, it would still function as something cool to look at, without punishing the player with too much tedious gameplay. The activator tiles are placed strategically in a position where the blocks presented to the player on the lowering elevators would fall right on top of them by shooting at them with a charge bullet once or twice. This way, moving the blocks to their designated positions is really easy and quickly done.

Short reflection

If there was anything I could do over in developing this game so far, it would be to have done more extensive playtesting during the whiteboxing phase of developing this area. It was a very tedious and demanding task to change the level from its whiteboxed version to its final version. I had to replace all the walls and floors and I found out how the original floor plans of the whiteboxed level could not possibly be made with the environmental tools at my disposal. This meant I had to get creative with puzzle room positioning and heights and made it challenging for me to fit everything together in a way that would connect to the pool room.

It had taken me roughly two weeks of literally spending any second I had available to change the area from its whiteboxed version into the final one. 90% of this time, I was manually placing environmental blocks around the scene to make it look good, without having it interfere with gameplay. Of course there are tools like Houdini for building these environments more quickly and efficiently, but at the time this tool was not available to our development team.

Still, I was really proud of the result and glad to have finished the work after two long weeks. However, I only had the opportunity to playtest this area and fine-tune the mechanics after that. During playtesting, it became painfully clear how room #7 (which was initially room #3), was the most difficult one of the bunch and that meant I had to swap the rooms around after having spent so much time and effort trying to get them all to fit together.

In the end, I was able to rotate the entire pool 180 degrees and switch up the room order. An additional problem was that I needed to find a way to signpost to the player in which order they would need to complete the puzzles. My teammate designer cleverly thought of the lasers that we have used in other wings, in order to bridge the gaps in the level and still have it look good. This way, I could prevent the entire area from becoming one big mess of energy lines crossing each other, and it even made the level look a lot cooler in my opinion.

What I would take from this experience is to never again start on making a level beautiful until it has been properly playtested. I think this is the most valuable lesson I have learned throughout this block. It would have saved me a lot of trouble and I will make sure to be more cautious of it next time. Funny enough, I had found that the developers of Portal had run into similar issues about having to adjust difficulty curves throughout their game by switching up levels and adding levels in between them. They did a good job in creating the levels in such a way that they can easily switch up the order, because the start and end points are always the same. If I had done this for the pool area, it would have been a lot easier to switch up the rooms for me as well. Of course, this would take away the uniqueness of every hallway, but that is a compromise worth making sometimes.

In the upcoming blocks, I will make it my personal mission to make sure that every part of the game is properly playtested before it ever gets into the game. This way, I hope to ensure that the game will not only be more enjoyable, but less time would be wasted on trying to fix unnecessary problems.