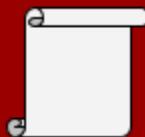


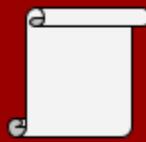
# LEVEL DESIGN DOCUMENT





# REPUBLICAN MICE – THE BURROW

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## Document Changelog

Version	Date	Comments
0.1	07/03/2021	Creation of the document.
0.2	08/03/2021	Addition of references.
0.3	25/03/2021	Added Map & flowchart, added Literated and Gameplay summaries, added Metrics.
0.4	27/03/2021	Added Context, revised references.
1.0	29/03/2021	Made some revisions.
1.1	18/04/2021	Redone Literated Summary in first person, revised Context, details to Gameplay Summary and re-styled.
1.2	24/04/2021	Added the player guidance summary.
2.0	1/06/2021	Corrections after feedback.
2.1	10/06/2021	Added more feedback corrections.
2.2	12/06/2021	Rational Design section.
2.3	13/06/2021	Expanded Rational Design section, fixed typos, added & updated images.



# REPUBLICAN MICE – THE BURROW

## Context, Target & Platform

This level has been created using the “Path of Pain” doctrine, which means it will be built using the Unreal Engine.

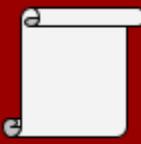
The game for this level is a stealth/platformer game where all characters are anthropomorphic animals living in a human castle. The characters are primarily mice (if good-natured) or rats (if evil).

The global objective of the main character (a mouse) is to kill the Rat King, and this level is a transition from the tutorial area (the gardens) to the Royal Rat Palace. Therefore, the objective of this level is to figure out a way to get to the palace. Thematically, this level is a shanty town where the mice live and the rats openly oppress the mice.

The game is aimed at young adults and teens. The platforms used will be PC, Playstation, Xbox and Switch.



- The scale of the characters. Our hero is an anthropomorphic mouse, the enemies are anthropomorphic rats, and the humans act as forces of nature rather than being narrative characters. -



## Literated Summary

As we start the level, the first thing we see is the entrance to the Royal Palace bridge, which is guarded by a pair of rat soldiers. At the back are two giant human-sized torches which very quickly grab our attention, and we move towards the light - and thus, towards the soldiers.

It's made apparent very quickly that the guard rats are not friendly towards us and are preventing our passage to the Palace. With mocking intent, they unintentionally let slip that someone else, a smuggler, tried to cross the bridge and that he can be found in his house, to our right. As we look to the right, we see a big house with a lot of guards, most of whom are carrying torches, surrounding it. The light from the guards' torches grab our attention and we approach.

Once again, our passage is blocked and we cannot enter the house. As we take a second to look around, we see a light shining on a white ramp on the balcony, indicating that we can jump from there to reach the smuggler's house. We continue looking around and see that there is a path if we go far enough, so we do exactly that.

As we backtrack the level, we see that we can get to the second floor if we jump on some boxes, so we do exactly that. At the top we see a rock connecting the first part of the second floor with the second part, and we use it to cross the gap by climbing it. After we're past the gap, all that is left is cross the familiar second floor and jump towards the smuggler's balcony.

Once inside, the smuggler tells us that he knows another way into the Palace - the sewers. He gives us a key to open the sewer gate and tells us we can reach it by going through a backdoor, which he opens. Once we're through the door we drop into the sewer gate and open it.

Once the sewer gate is open, we go inside. At this point the real jumping challenge begins, and we have to jump across the lower part of the bridge to reach the Palace wall. After that, we go through the Palace wall challenge all around the Palace until we reach the Palace's sewers, at which point the level ends.



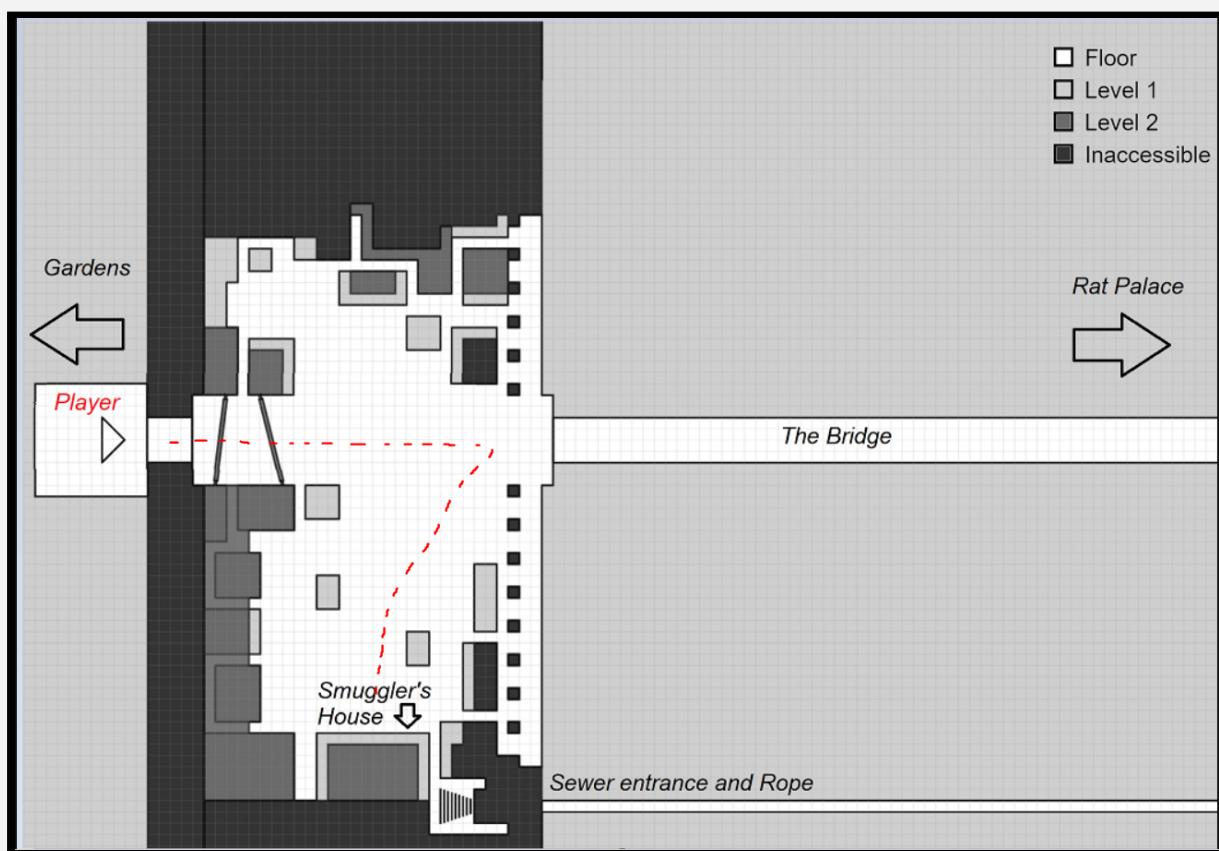
# REPUBLICAN MICE – THE BURROW

## Gameplay Summary

The gameplay objective of this level is to teach the basics of platforming to the player. No fighting will occur on this level as weapons are not available to the player.

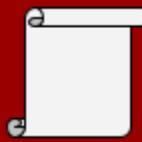
The player first sees the entrance to the town. The main thing that will draw the player's attention is the main gate leading to the bridge, which is guarded by rat soldiers. The level will be open to explore, but the only way to progress is to get to the smuggler's house. The guards by the gate entrance will show the player where the smuggler's house is in case the player needs it.

All of this can be done by simply walking, as all of these elements are on the ground floor.



- Expected player route at this point. -

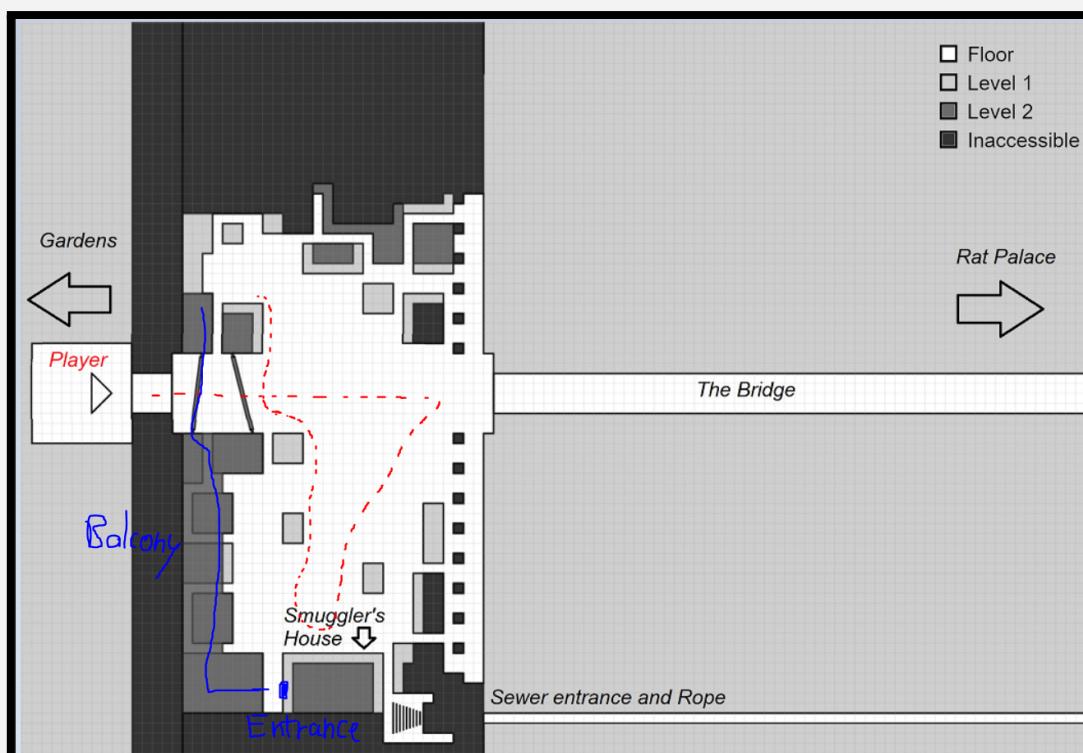
Next to the smuggler's house is a very obvious balcony entrance that can be accessed through the second floor, but no obvious way of getting to the second floor. The player must then follow the balcony all the way back in order to see how to get to the second floor. The entrance to the balcony will be marked with a white scratch, which will be used to subtly indicate which path he must take to progress.



# REPUBLICAN MICE – THE BURROW



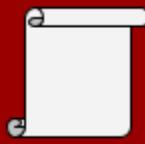
- The smuggler's house is blocked by guards -



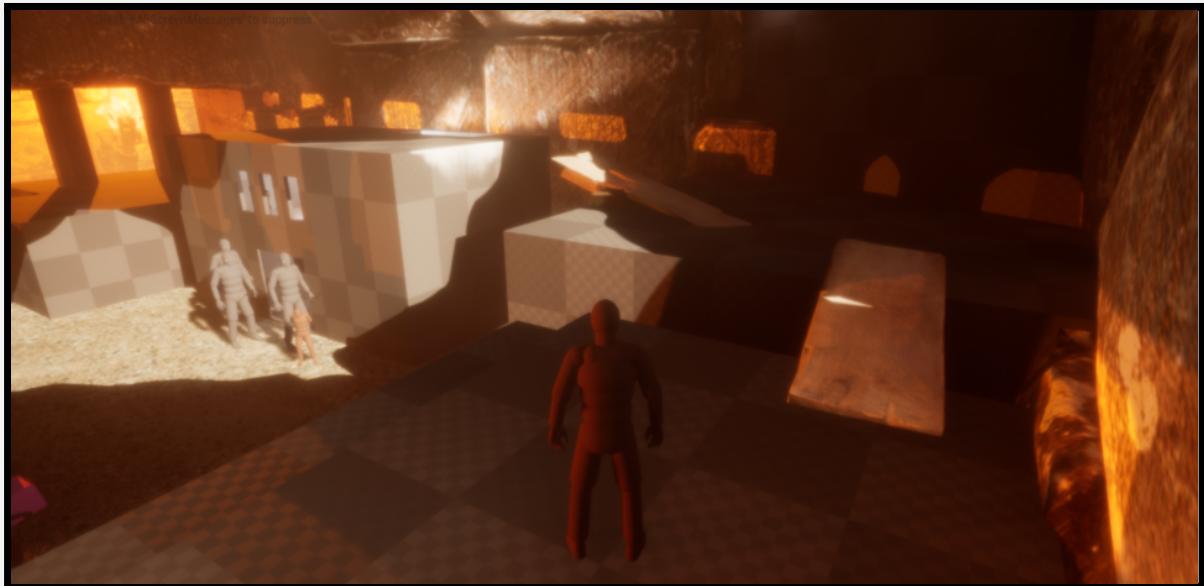
- Expected player route and balcony entrance. -

At this point, the player will see a few boxes stacked onto each other that would allow the player to access the second floor. By pressing the jump button, the player will be able to easily reach the first box. By jumping two more times onto the other boxes, the player will be able to reach the second floor.

Once the player has gained access to the second floor, he will need to cross the gap by climbing the rocks attached to the wall. The jump is very easy and it serves as an introduction to climbing.



## REPUBLICAN MICE – THE BURROW

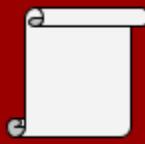


To reach the smuggler's balcony, the player will need to perform a running jump.

At this point the player will meet the smuggler, who will give the sewer key to the player. A door on the other side of the smuggler building will open, which will lead to the sewer entrance.

After the sewer, the real jumping challenge begins. To start with, he will have to do a few horizontal jumps to reach the lower part of the bridge. Once there, he will encounter falling platforms that he will have to navigate and jump on to reach the end of the bridge and thus the Palace wall.

On the Palace wall, the player will do a few horizontal jumps towards one of the corners of the Palace, where he will be able to climb through a jumping challenge to reach the top of the Palace wall. Once at the top, he will have to cross the top part of the Palace wall while making sure he doesn't fall down early; once at the end, he will have to jump down and reach the sewers of the Palace wall, at which point the level ends.

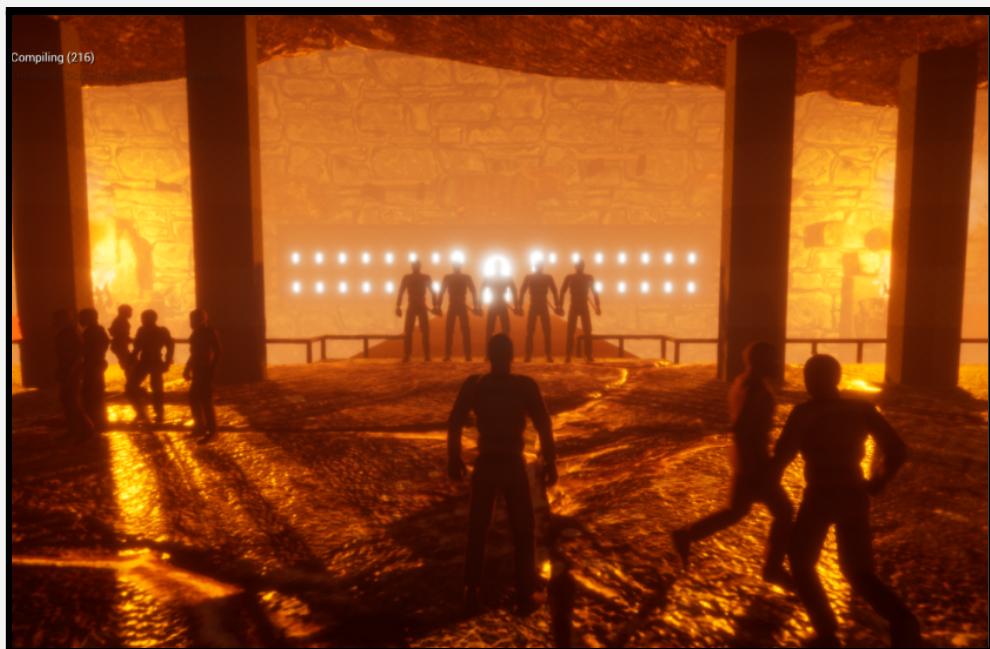


# REPUBLICAN MICE – THE BURROW

## Goals of the level

### Intrinsic goals

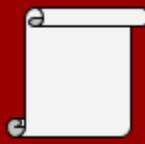
The intrinsic goal of the level is to advance the story. This level contains a key point of the story: how to get in the castle and kill the king.



### Extrinsic goals

The extrinsic goal of the level are:

- **Movement:** To teach the player how to sneak into somewhere climbing to the rooftops (level 1 and 2 of heights).
- **Jump:** Core mechanic of the level, the jump and the character limits will be tested in this level.
- **Climb:** The player will train the skill of climbing obstacles and ropes.



# REPUBLICAN MICE – THE BURROW

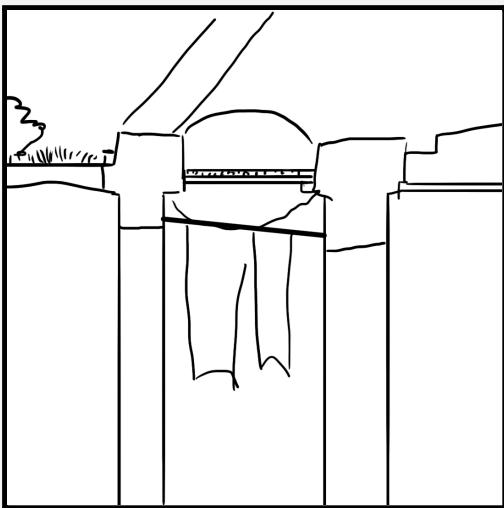
## References

### Initial references

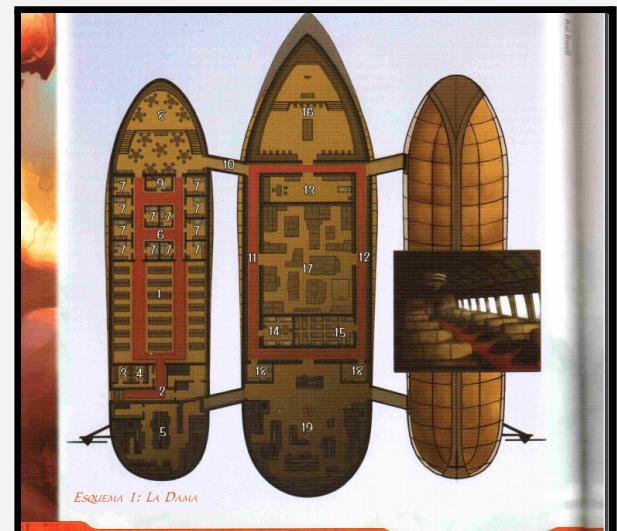
The idea of the level is inspired from these two one page dungeons:

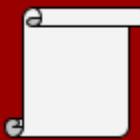
We take the idea of playing as a little mouse from the board game Mice and Mystics, where players are small but the environment is the size of regular humans. This generates a sensation of smallness in the players.

We also use the idea of a mouse civilization living within the walls of a castle.



Additionally, we take the idea of splitting a level with a bridge and the vast sensation of emptiness from the *Anima Beyond Fantasy* (game master screen campaign).





# REPUBLICAN MICE – THE BURROW

## Assassin's Creed (2007) - Acre, Memory Block 4

Our first reference is the Ubisoft's game Assassin's Creed.

The level reference is the fortress of the regent of Acre. The level is presented in the Memory Block 4, where Altaïr has to kill the templar William of Montferrat.

It is a "free" level with several accesses such as the main entrance or scaffolding climbing areas. The fortress is surrounded by templar soldiers and guarded inside too.

The battlements are guarded with archers that need to be eliminated to reach the objective. Finally, William is at the fortress square where the player has to fight a battle of several enemies before ending the level.

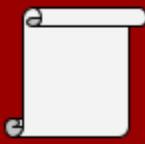


## Ratatouille (2007) - Paris Streets

Our second reference is Heavy Iron's Ratatouille.

Based on Pixar's film, Ratatouille is a 3D platformer game where the player controls Remi the rat. The level reference is Paris Streets, a level that takes places between the French city's walls. There Remi starts in a sort of hub in the sewerage system searching for a way out. The Level is a corridor with several holes, pipes and ramps as obstacles.





# REPUBLICAN MICE – THE BURROW

## Metrics

Advice: the reference metrics are in centimeters.

### Engine metrics

- Player height 96 unreal units.
- Player width 42 unreal units.
- Vertical jump 100 unreal units.
- Horizontal jump 500–600 unreal units.

### Distance

Engine to game world measurements:

100x100 Unreal units  $\Rightarrow$  1 map square  $\Rightarrow$  5cm<sup>2</sup>.

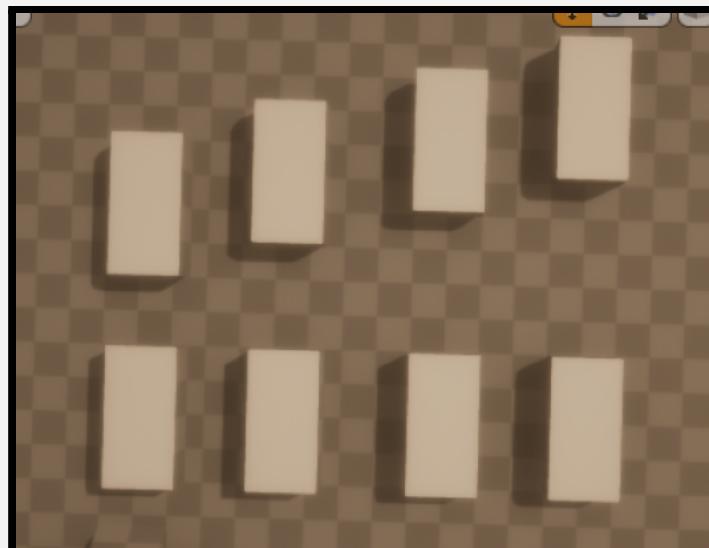
### Jump distance

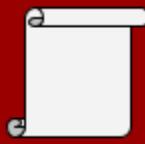
The character can jump when running, when sprinting and is capable of mantle. This brings us 4 types of jumps:

- Short jump (2u)  $\rightarrow$  Easy when running.
- Mid jump (3u)  $\rightarrow$  Affordable when running, easy sprinting.
- Long jump (4u)  $\rightarrow$  Possible when running (mantle), affordable when sprinting.
- X-Long jump (5u)  $\rightarrow$  Impossible when running, possible when sprinting.

### The Gym

We used another scene in the engine to set all the metrics and test them. From there we established the 4 types of jumps, their distances and difficulty points.

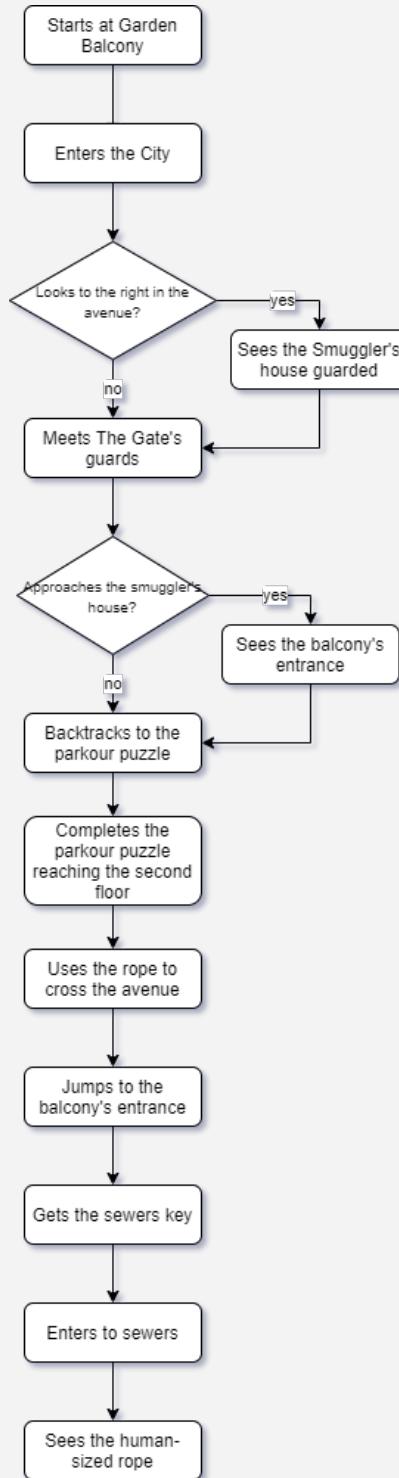


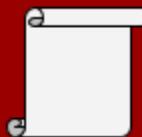


# REPUBLICAN MICE – THE BURROW

## Map

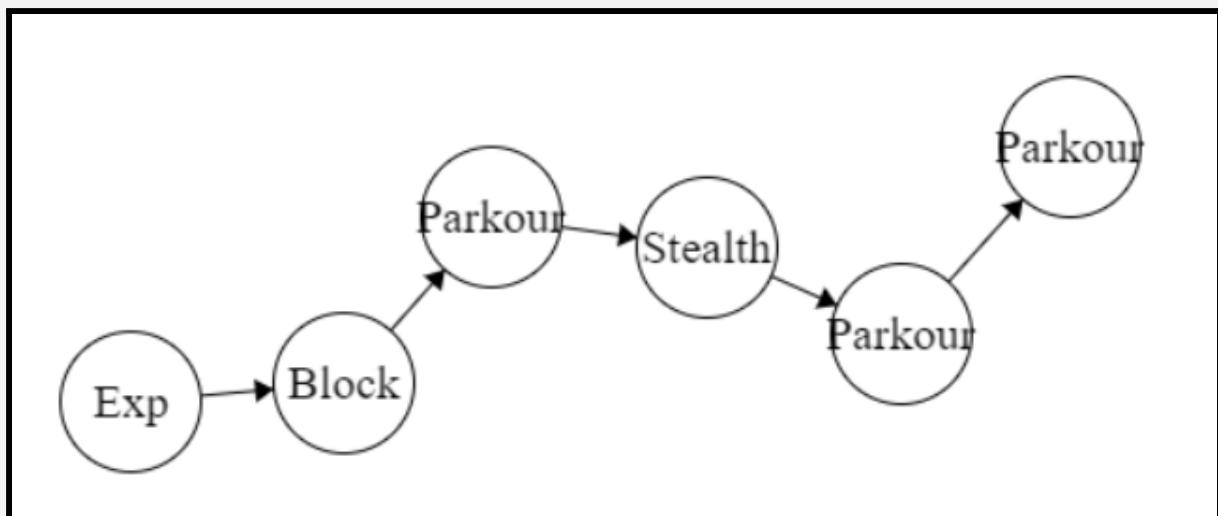
Original flowchart of the level



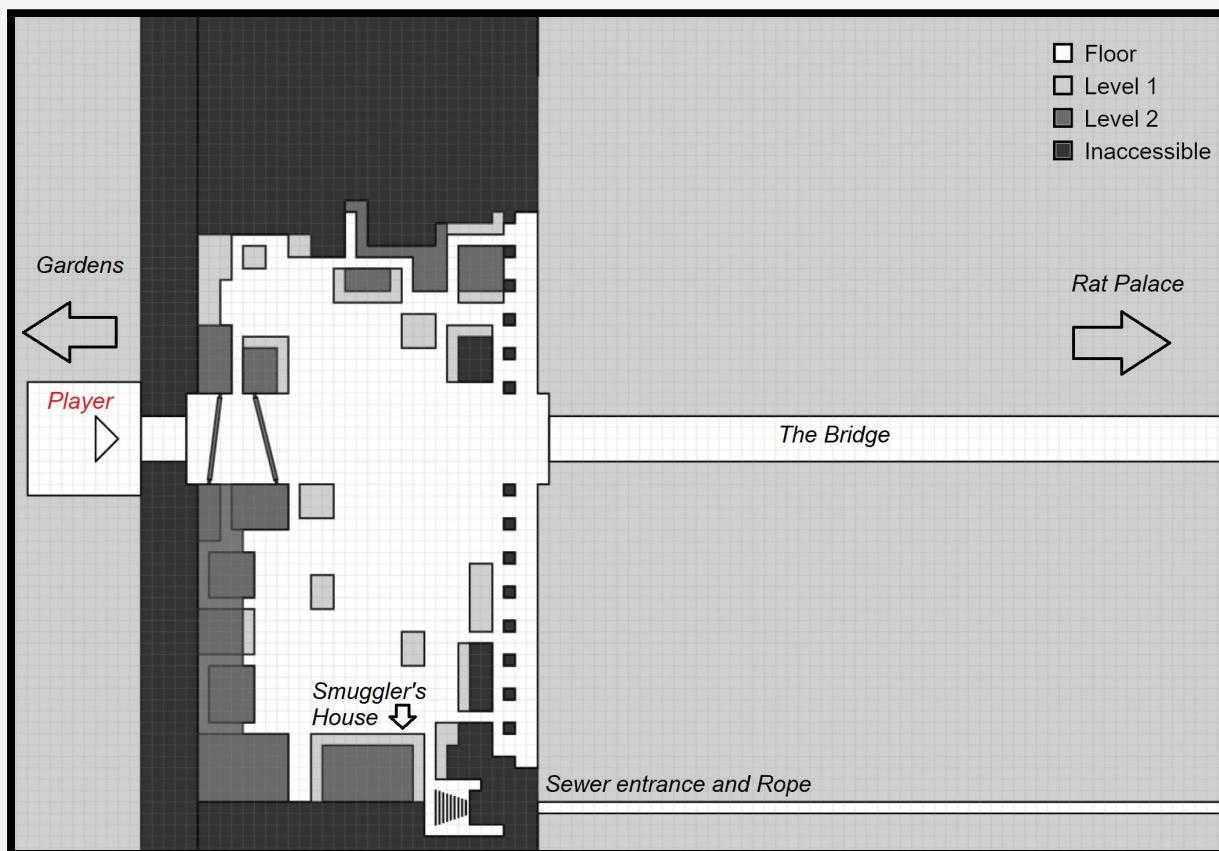


# REPUBLICAN MICE – THE BURROW

Expected beat map



Level concept





# REPUBLICAN MICE – THE BURROW

## Rational level design - Adding content

With the latest iteration of the level, we decided to add more content and challenge. To do this, we followed the Rational Design method to make sure the level remained balanced and fun.

### Constraints

Because we decided to add this section as an iteration of the level, we have the following constraint: the space.

We had to design and implement the obstacles to fit in the given space: no more, no less.

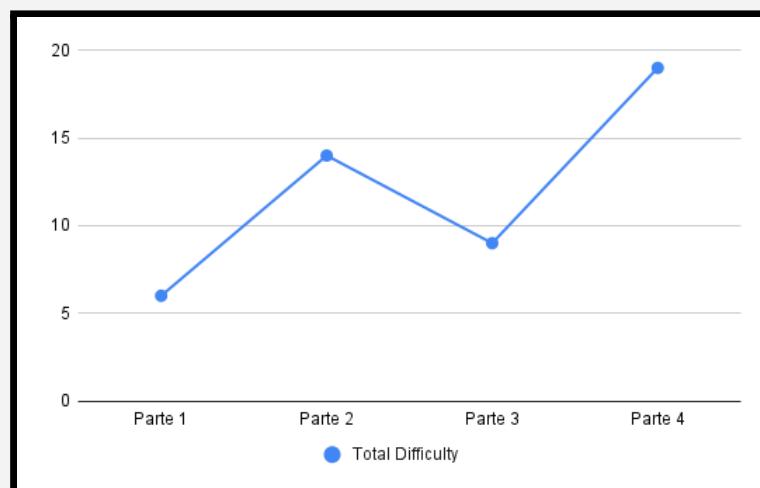
### The Bridge

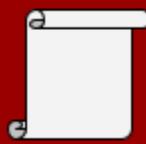
We divided this in two sections. The first one, the bridge, is divided into 4 parts.

The elements that appear in the bridge section are: Short, Long and Super Long jumps, falling platforms and diagonal jumps. These elements have a heuristic of difficulty.

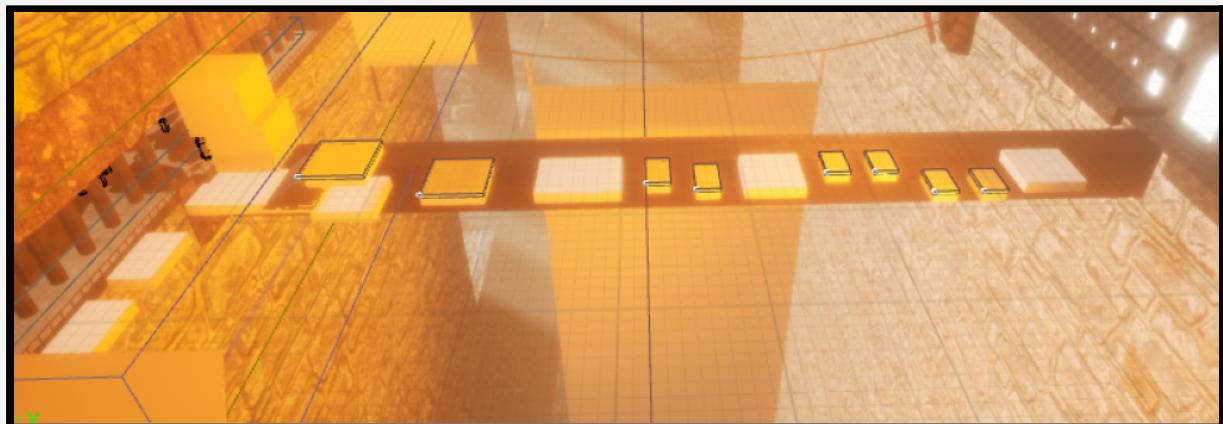
The objective of the first part is to introduce the player to a challenge of jumps. The second one teaches the falling platforms and the third and fourth to challenge the player.

Element Difficulty		The Bridge			
		Parte 1	Parte 2	Parte 3	Parte 4
1	Short Jump	2		3	5
2	Mid Jump				
4	Long Jump	1	2		
8	Super Long Jump				
3	Falling Platform		2	2	4
2	Diagonal Jump				1
Total Difficulty		6	14	9	19

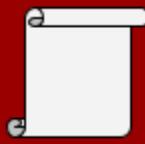




## REPUBLICAN MICE – THE BURROW



- Blockout of the bridge -



# REPUBLICAN MICE – THE BURROW

## The Palace

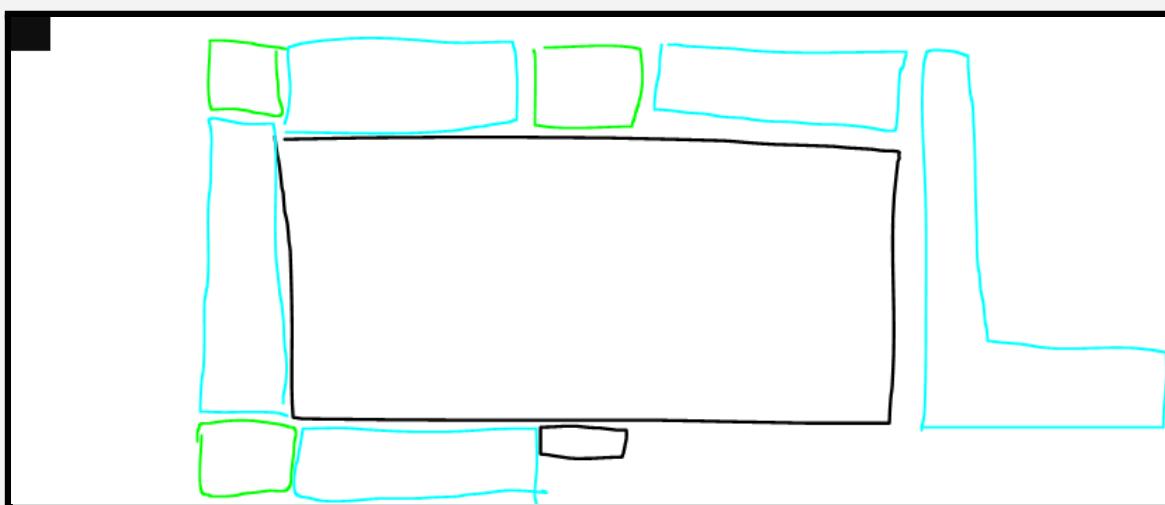
The second section, the palace, is divided into 5 parts.

The elements that appear in the bridge section are: Short, Mid, Long and Super Long jumps, falling platforms and vertical jumps.

The first three parts have a safe space for the player. The first part is a reminder on how to climb because it will be needed to climb the frame of the palace. The second one is a climbing part where the player will face dangerous vertical jumps.

The third and fourth parts are segments where the jumps are more difficult and presents a final jump inspired by the typical but epic "jump to the void" often seen in games like Uncharted.

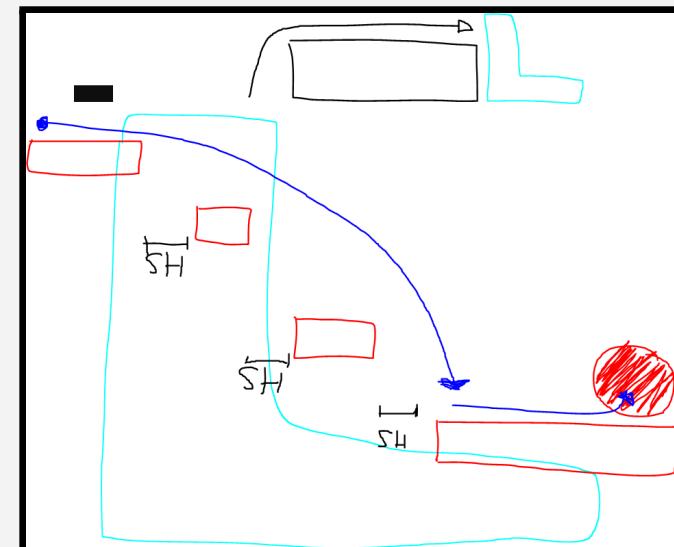
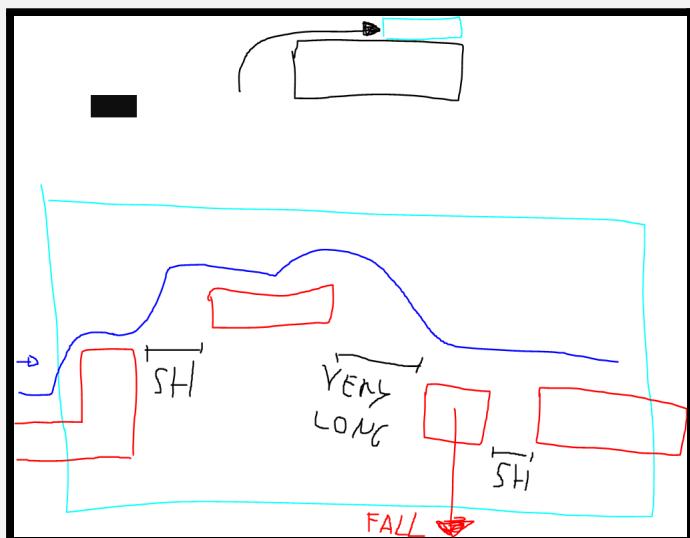
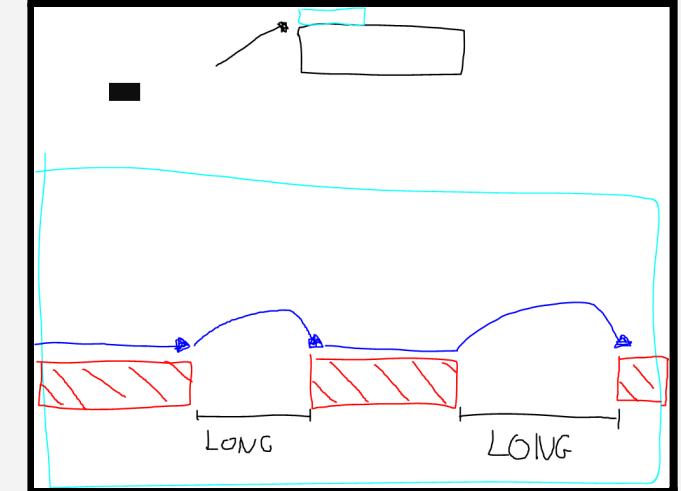
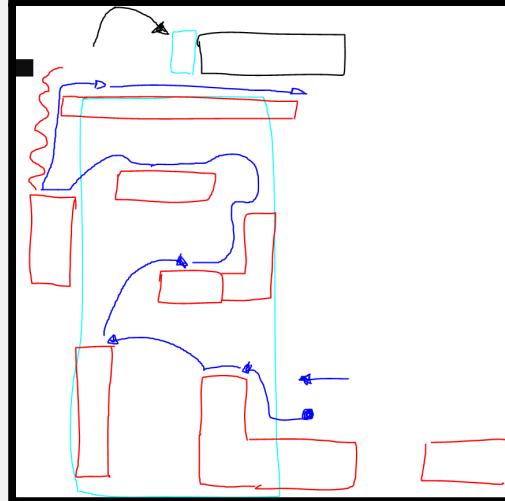
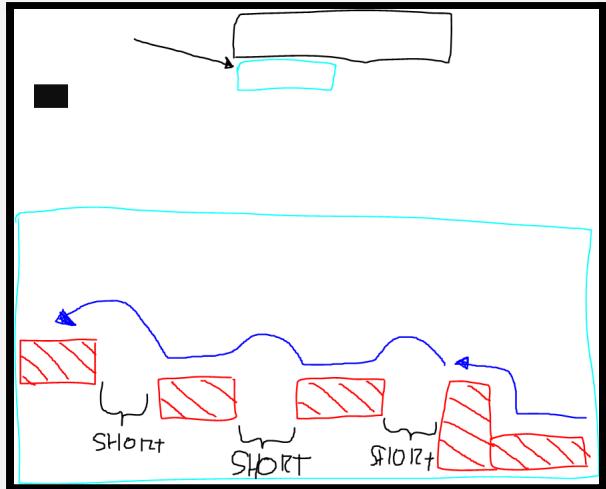
Finally the fifth section is a cooldown segment where the player will end the chapter entering to the sewers of the palace.

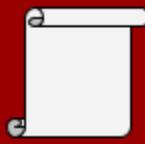




# REPUBLICAN MICE - THE BURROW

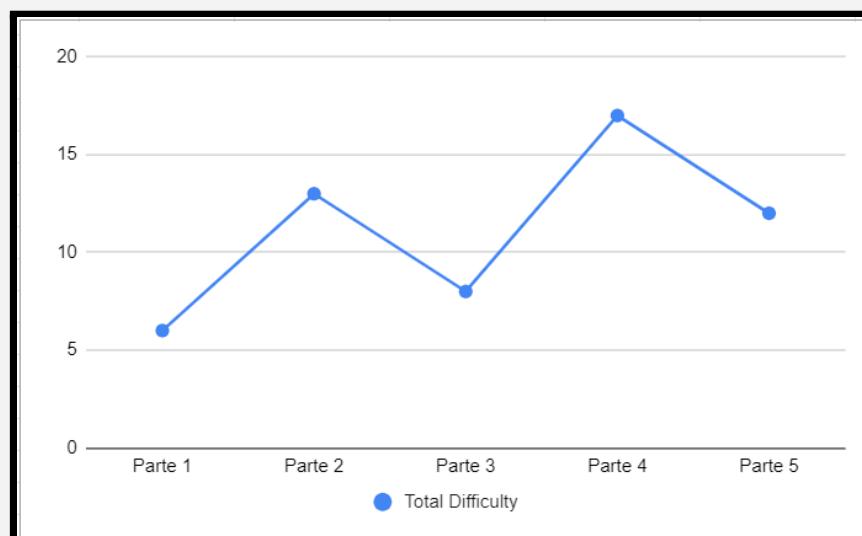
Palace section concepts





# REPUBLICAN MICE – THE BURROW

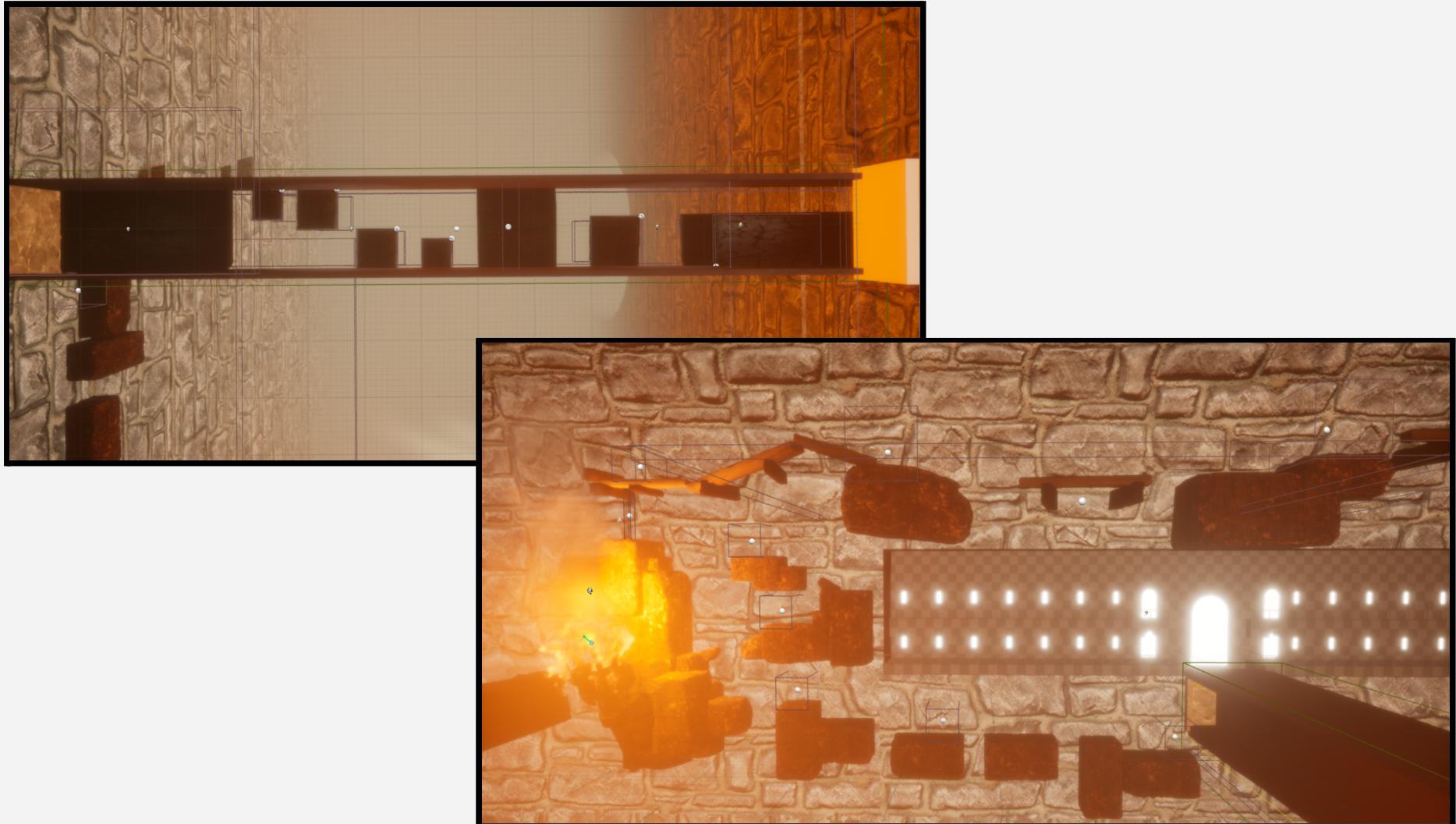
Element Difficulty		The Palace's wall				
		Parte 1	Parte 2	Parte 3	Parte 4	Parte 5
1	Short Jump	2	3		1	3
2	Mid Jump		1			
4	Long Jump			2		
6	Super Long Jump				1	
3	Falling Platform				1	
1	Vertical Climb	1	2		1	
3	Vertical Jump with Pit	1	2		2	3
Total Difficulty		6	13	8	17	12

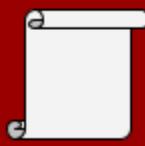




## REPUBLICAN MICE - THE BURROW

Rational level design result





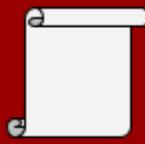
# REPUBLICAN MICE – THE BURROW

## Player guidance elements

### The Mousehole (The Burrow entrance)

- Hole made in the wall framing the main landmark (The castle gate).
- Leading lines directing to the city.





# REPUBLICAN MICE – THE BURROW

## The Burrow

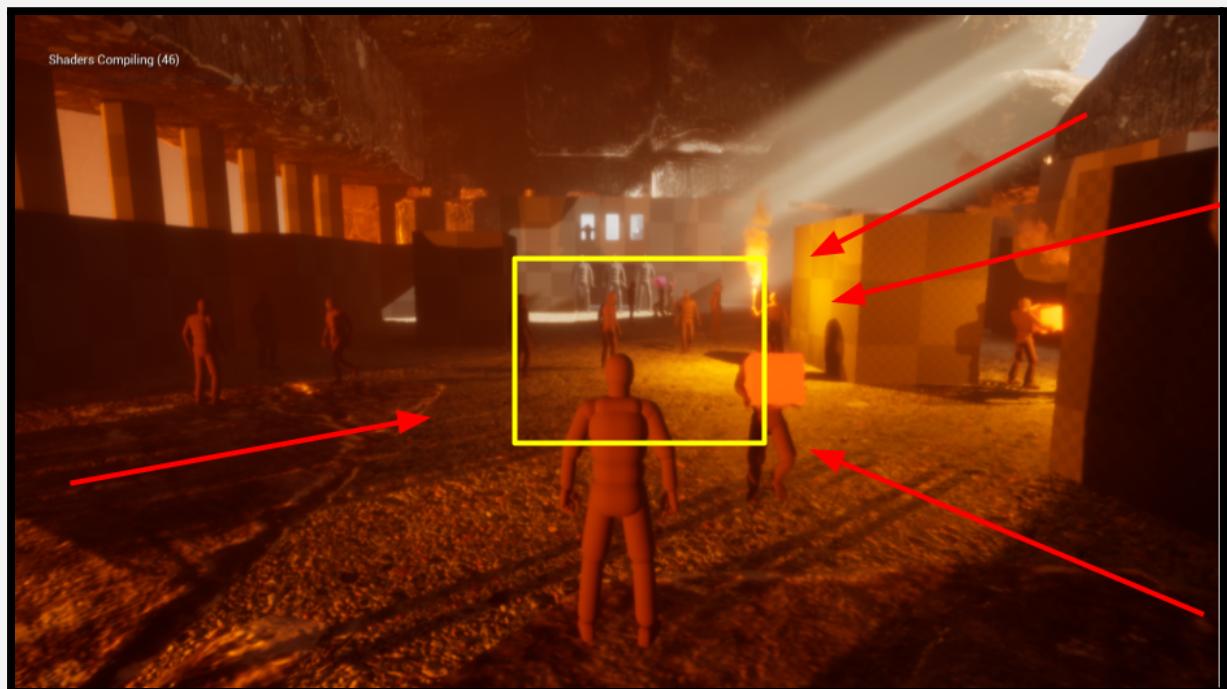
### The Bridge

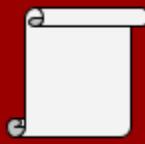
- The main landmark is blocked by a group of guards (Contrasting the light).



## The Market

- The house illuminated from inside and signaled with a god ray.
- Leading lines directing to the house.
- Visible silhouette of the smuggler on a house's window.

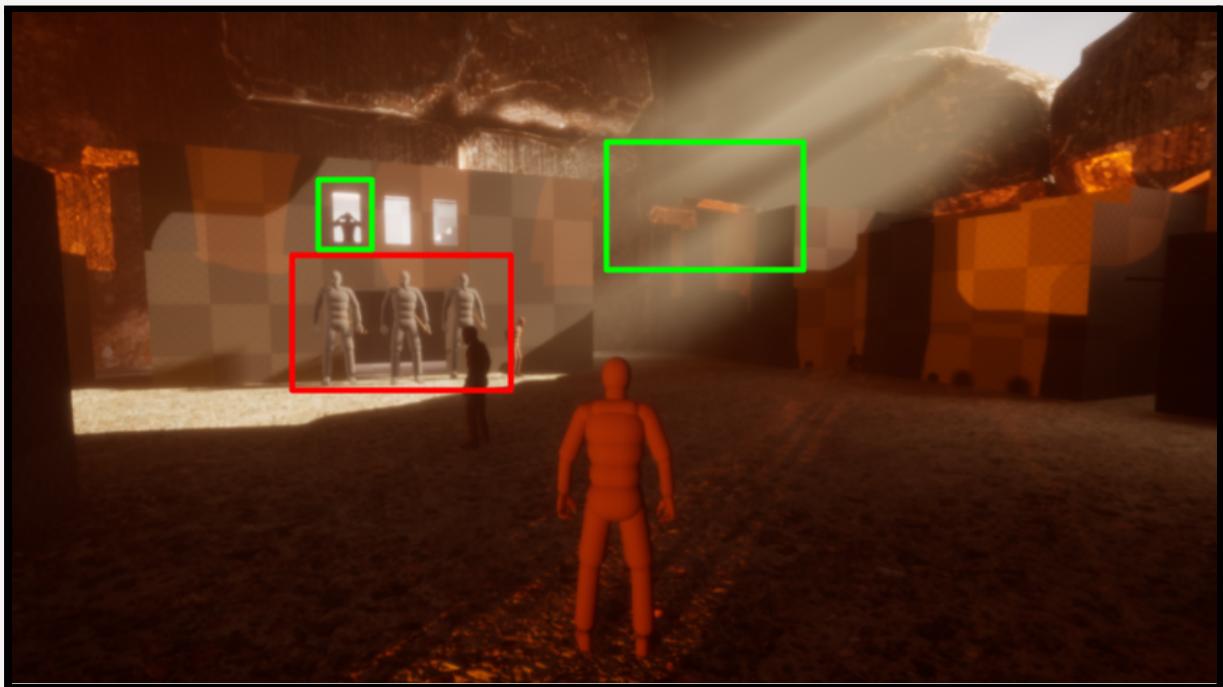




## REPUBLICAN MICE – THE BURROW

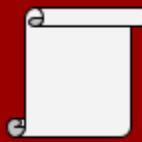
### The Smuggler's House

- A group of armed guards blocking the main entrance.
- The light coming out from a hole on the room side.
- An affordable jump to the second floor signaled by the god rays and a ramp.



### On the other side

- Leading lines directing to a climbable object.
- White ledges contrasting on climb zones.



# REPUBLICAN MICE – THE BURROW

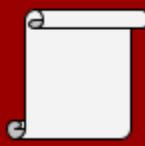


## The Roofs

### Part 1

- Leading lines directing to the Smuggler's house.
- Small candles as breadcrumbs.
- The entrance to the smuggler's house signaled by the god rays.





## REPUBLICAN MICE – THE BURROW

### Part 2

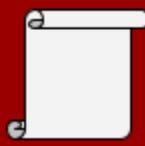
- Leading lines



### Part 3

- A ramp signaling the final jump after the obstacle.

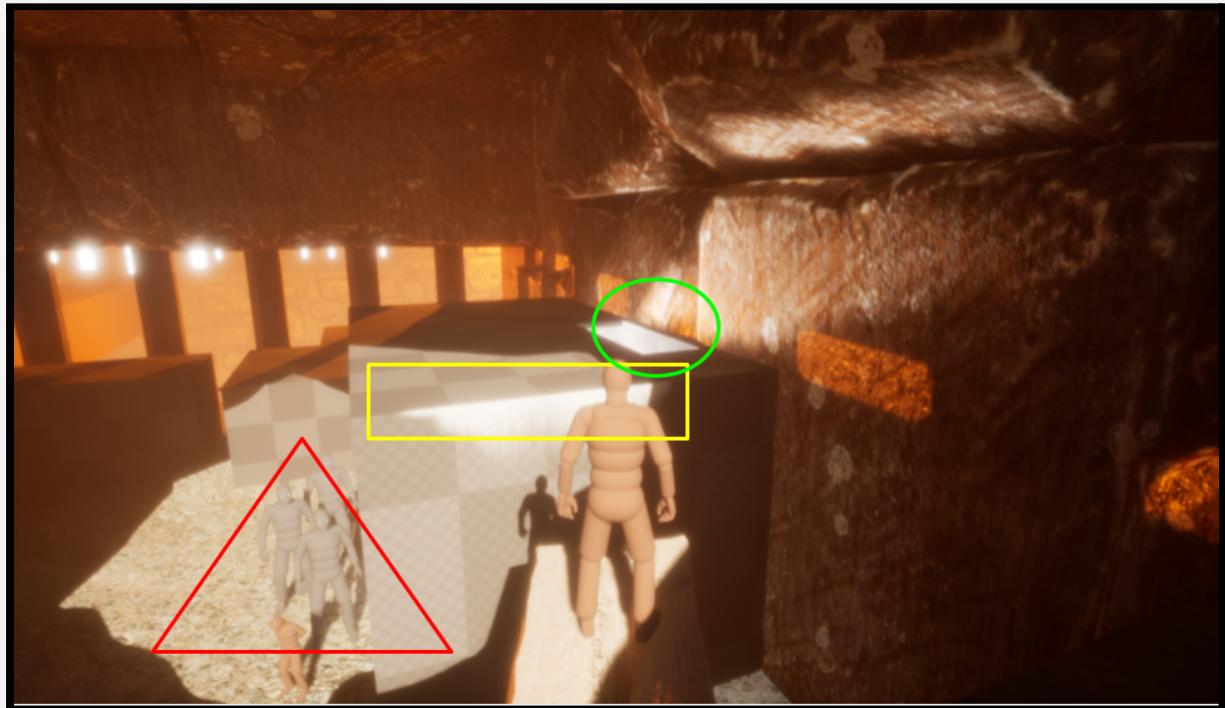


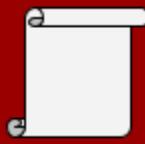


## REPUBLICAN MICE – THE BURROW

### Part 4

- The house's entrance with light coming from an entrance
- A contrasting ledge at an affordable distance.





# REPUBLICAN MICE – THE BURROW

The Sewers

From The House

- The entrance of the sewers emits light.

