Level Design Document: Doppelgangers

Half Life 2: Episode 2

Version 1.0

Designer:	Jorge Montolio Conde
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Document Revisions Table

Version	Description	Requestor	Date
1.0	Initial Document	Professor Ouellette	09/08/2015
2.0	Updated the document to reflect the changes made to the level after RTM. Updated the maps with the current layout. Updated HUD description and mechanics description. Updated area breakdown to reflect the final areas of the level.	-	02/09/2016

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Level Abstract

Quick Summary

       "Doppelgangers" is a single player campaign for the single-player, first person shooter game *Half-Life 2: Episode 2*. In "Doppelgangers" players take the role of Barney as he tries from a Combine maximum security prison, with the help of a mysterious weapon known as the Cloner. With the Cloner, players are able to create clones of themselves, which they can control for a limited amount of time. Using their clones, players need to access weapons that would normally be out of reach, enter locked rooms through the windows, and lure enemies to cages filled with zombies, all to escape safely from the dangerous Combine facility.

Hook(s)

- Creating a clone that can reach places that the player cannot.
- Being able to perform extremely risky actions without worry, since the death of the clones does not affect the player's health.
- Distracting the enemies by using clones, in order to attack them from behind, flank them, or walk past them.
- Being able to organize confrontations between the Combine and the Zombies.

Basic mechanics

       The cloner allows players to use a cloning mechanic, which has some unique properties:

- The players can only use the Gravity Gun, as well as some mounted machine guns that they can find in the level.
- The players can spawn a "cloning platform" by pressing "Q"
- The players can only throw the cloning platform with the gravity gun. Wherever the platform lands in the level, a clone appears.
- Once a clone appears, the players instantly start controlling the clone. Their original body becomes a dummy ("Original Body Dummy" or OBD), that players do not control anymore.
- The players can control his clone for 15 seconds, after which the clone disappears. Players then instantly go back to their original body.

Gameplay Highlights

The cloning mechanics allows for exciting interactions with the enemies:

- When an enemy is between the players and a weapon (explosive barrels, or a mounted machine gun), players can shoot the Cloner over the enemy. The clone then spawns behind the enemy, and is free to reach the previously unreachable weapon.
- Players can infiltrate locked rooms by shooting the cloning platform through windows.
- Players can use clones to lure enemies. Clones can help move enemies out of the players' path, or trap enemies in rooms.
- Players can take advantage of the clones when confronting big numbers of enemies. Players can use the clones to serve as distractions to the enemies or to access weapons that are out of reach.

Setting Summary

Theme	*Old looking facility made out of concrete, with advanced technology in the laboratory and the control room areas.*
Mood	*Isolated, quiet atmosphere, except for the machinery and the guards*
Setting	*Experimentation facility on top a mountain, close to a cliff*
Time of Day	*Night*
Season	*Summer*
Weather	*Clear skies, moonlight*

Mission Difficulty

Position	Difficulty	Reasons
Areas 1 and 2	3	Players learn about the basic Half-Life 2 mechanics, as well as the Cloner's basic applications. They get to use the Cloner to access locked rooms, as well as to get past patrolling enemies in order to reach for weapons that are behind them. Although there are enemies in these areas, they are easily avoidable if players use cover when planning their actions.
Area 3	6	This is a practice area, where players become familiar with the mechanics learned in the tutorial. In this area, players can throw the Cloner over groups of enemies, in order to reach mounted machine guns or explosive barrels that they can then use to kill the enemies. Players also encounter zombies for the first time, which they can free from their cages in order to stage battles between the zombies and the Combine.
Area 4	7	In the last room of the level, players "team up" with their clones to confront waves of Combine that are entering the area. In this room, players can only access the weapons by using their clone. They have to switch between their clone and their original body, in order to survive the enemy attack.

Scale: 1-10 (1 is Easiest and 10 is Hardest)

Mission Metrics

Play Time	13-15 minutes
Critical Path	6000 Hammer units = 375 feet
Physical Area	4096*4096 Hammer units = 256*256 feet

Characters

Character	Description
The player (Barney)	In the level, the players take the role of Barney. The Resistance sends Barney to the cloning facility, with the mission of obtaining the Cloner, an artifact that they can use to win the war. Barney manages to infiltrate the facility, but the Combine soon discovers him and puts him in a cell, with the purpose of using him in one of their cloning experiments. The level starts when Sam comes to his rescue.
Sam	Learning of Barney's fate, the Resistance decides to send another person (Sam) to help Barney escape with the Cloner. Barney meets Sam in the first room of the level, through a window in Barney's cell. Sam then gives Barney the cell's key through the window, helping him escape. After that, Sam frequently helps Barney throughout the level by using a radio, and gives him advice through the radio, telling him how to use the Cloner, and encouraging him to escape with the device. Players only see Sam through windows. Players get to meet Sam at the end of the level, when they open the door of the facility. Sam looks like a standard City 17's citizen, since the mission has forced him to go undercover.
Overwatch soldiers	The Overwatch Soldiers are the most frequent enemies in the level. Their task is to patrol, and to make sure no one infiltrates the facility. They are equipped with standard pulse rifles.
Zombies	The Combine have been able to capture some of the zombies that are attacking the facility, and they have isolated them in rooms throughout the level. Players can use the zombies to their advantage, by freeing them and letting them fight the Combine.

Visual Themes

Theme	Description
The prison (Areas 1 and 4)	The Combine keep the prisoners in cells. Some of these cells are close to the laboratory, since the cloning experiments require human subjects. Players start in one of the cells. The cells of the prison have rusty metal walls, and they contain a bed and a toilet, for the use of the prisoners. A window with bars is the only contact of the prisoners with the other parts of the facility. The rooms also have a stained metal door, which only opens when the guards bring food to the prisoners. There is only one light in the cells, with a yellow tone, which gives the room a depressing mood. The Combine keeps the rest of the prisoners in a "General Population Room" (Area 4). This room has two floors, with the top floor having a hole in the center that connects to the first floor. As in a regular prison, small columns support the weight of the balcony area of the top floor (see theme pictures). The top floor has mounted machine guns, which the Combine keep in case of a prison riot. This is the last area that players visit.
Laboratory (Area 2)	After exiting his prison cell, players get to the adjacent laboratory. The laboratory is where the Combine carry out the cloning experiments, so players can see several cloning devices working in the environment. The area also contains some machinery and tables with electronic equipment. Several Combine Prisoner Pods are also present in this area, since the Combine like to test their Cloners on humans. The lighting is more sci-fi like in the laboratory, with white and blue lights being predominant.
Control rooms (Area 3)	In the Control Rooms, Combine soldiers patrol and control the prison inmates through monitors. This area mixes the prison and the laboratory looks, with concrete walls and floors, and advanced electronic equipment that the Combine use to monitor the cloning facility. The light in this area has blue and white tones, like in the laboratory, but the wall and floor materials give the area a more military look.

Exterior	Due to the secret nature of the experiments, the Combine have built the cloning facility on a rocky area, on top of a mountain. Cliffs surround the building, and a narrow, rocky passage is the only way of getting to the premises. Players sees the exterior through windows, so he only gets to see the mountains in the distance. The exterior is dark since the level takes place at night. All of the windows that lead to the exterior have bars, so that players cannot throw the Cloner outside of the level.

Key Theme References

Figure 1: Prison's neglected look and lighting [2]

Figure 2: Laboratory machinery and lighting [3]

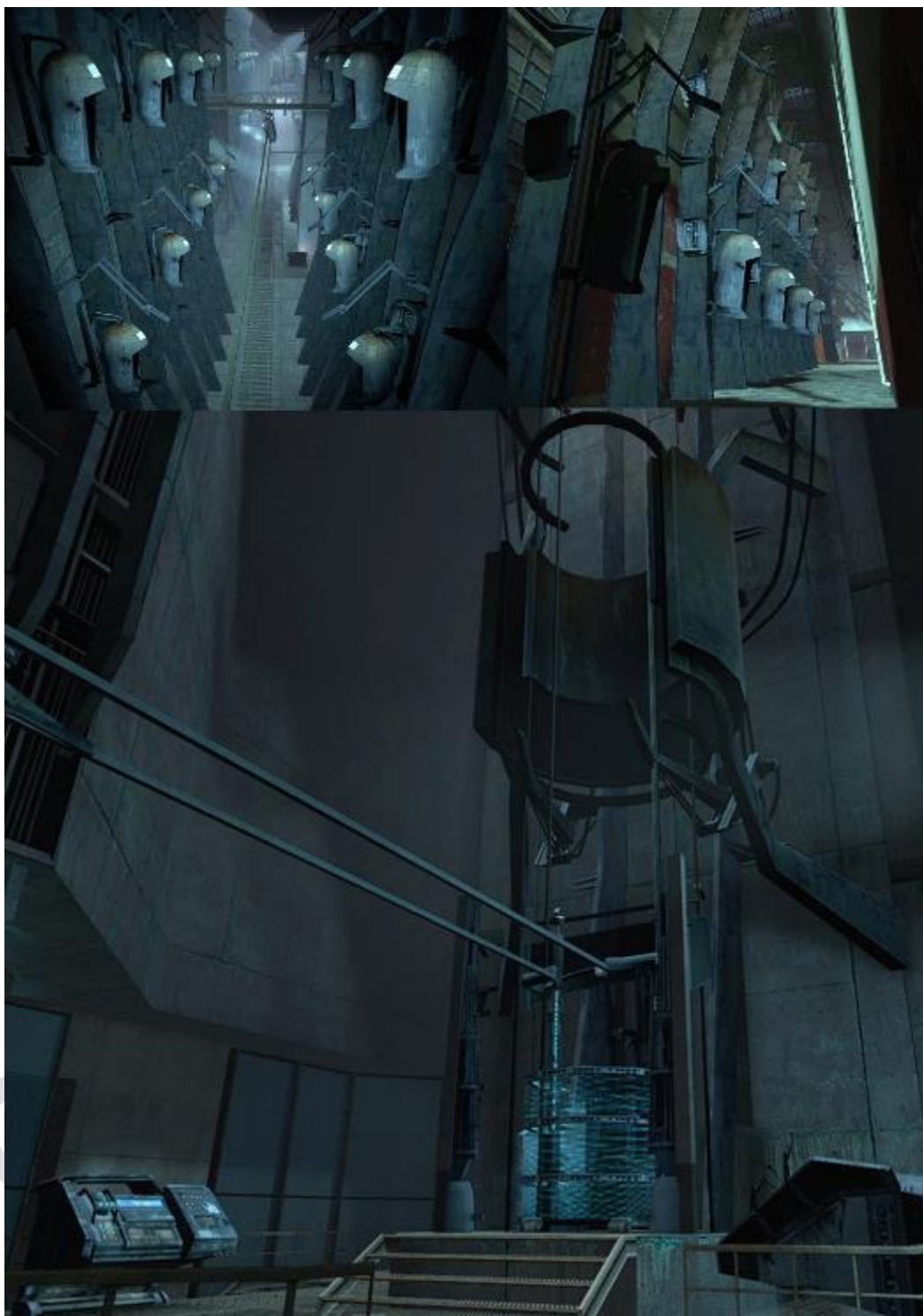**Figure 3: Laboratory machinery [4]**

Figure 4: Control rooms' equipment [5]
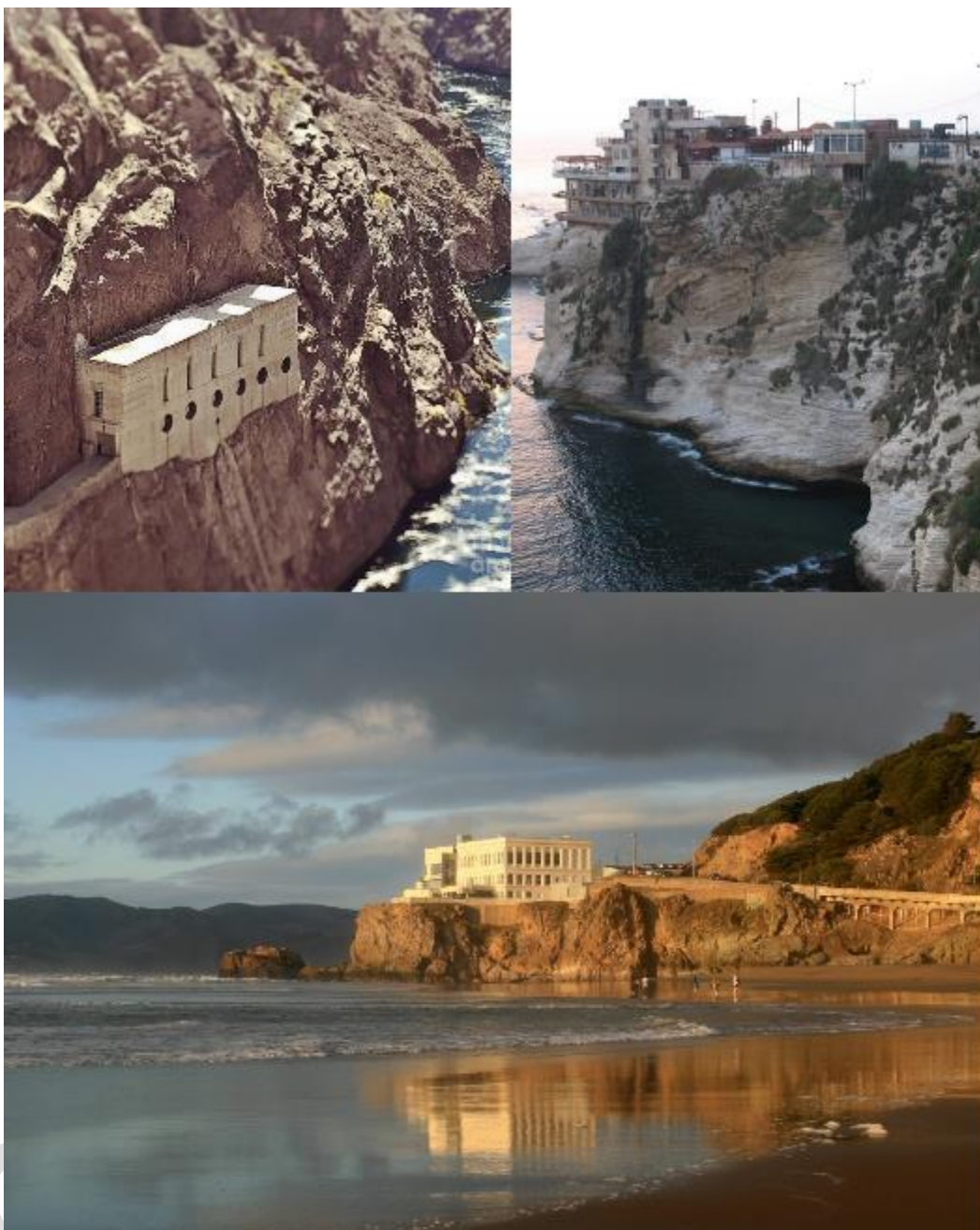
Figure 5: Control rooms' look [6]

Figure 6: Facility's location concept [7]

Figure 7: Skybox's concepts [8]

Level Summary

Campaign

Context

"Doppelgangers" is a level that takes place during the latter part of *Half-Life 2*, after the events of Nova Prospekt, and during the week when Alyx and Gordon Freeman disappear. Thinking that Gordon Freeman has died, the Resistance sets up a plan to steal one of the Combine's most powerful upcoming weapons: the Cloner. The Cloner is a weapon that the Combine has been researching for a few weeks, and it allows its owner to create a clone of himself for a limited amount of time.

In "Doppelgangers", players takes the role of Barney. The Combine has captured Barney, after he tried to infiltrate their base to steal the Cloner. After the news reach the Resistance, a second member of the Resistance (Sam) arrives at the Combine's base to help Barney escape. Sam arrives to find out that the facility is under attack by the Xen. After Sam gives Barney the key to the cell, Barney finds the cloning device (the Cloner), which he can use to create a clone of himself. Armed with the Cloner and a gravity gun, Barney needs to use his clones to fight the Combine and the Xen, and get out of the facility alive.

Backstory

After the betrayal of Judith Mossman, Gordon Freeman and Alyx disappear. Determined to start a rebellion against the Combine, the Resistance decides to send Barney on a mission to investigate one of the Combine's bases. According to rumors, the Combine is developing a new cloning weapon, which can allow them to create an infinite army of clones. Unfortunately for the Resistance, Barney fails to retrieve the Cloner, and the Combine captures him and puts him in a cell. Now Barney needs to find a way to accomplish his mission, by escaping from one of the Combine's highest security prisons.

Aftermath

Barney manages to escape with the cloner, but the Resistance is afraid to use it in the upcoming rebellion, due to the device's high instability. After Gordon Freeman reappears, the Resistance decides not to use the clones for the uprising. Instead, they start looking for ways to improve it, so that they can use the cloning technique in the future.

Objective(s)

- Main goal: Escape from the Combine's facility with the Cloner

    o Players fail if the zombies or the guards see him and kill him.

- Secondary goal: Obtain the Cloner

    o Get out of the cell with Sam's help.

    o Get the cloner in the first laboratory room.

    o This section does not have any hazards or aggressive enemies.

- Secondary goal: Use the Cloner to avoid/kill the guards and reach the "General Population Room"

    o Use stealth and the cloners to avoid the guards' paths.

    o Use the clones to open doors and trap enemies in rooms, in order to progress.

    o Players fail if the enemy kills them.

- Secondary Goal: Open the door of the General Population Room and leave the facility

    o Survive the zombie attack inside the General Population room.

    o Unplug the three switches that are keeping the exit door locked.

    o Exit the facility after unlocking the door.

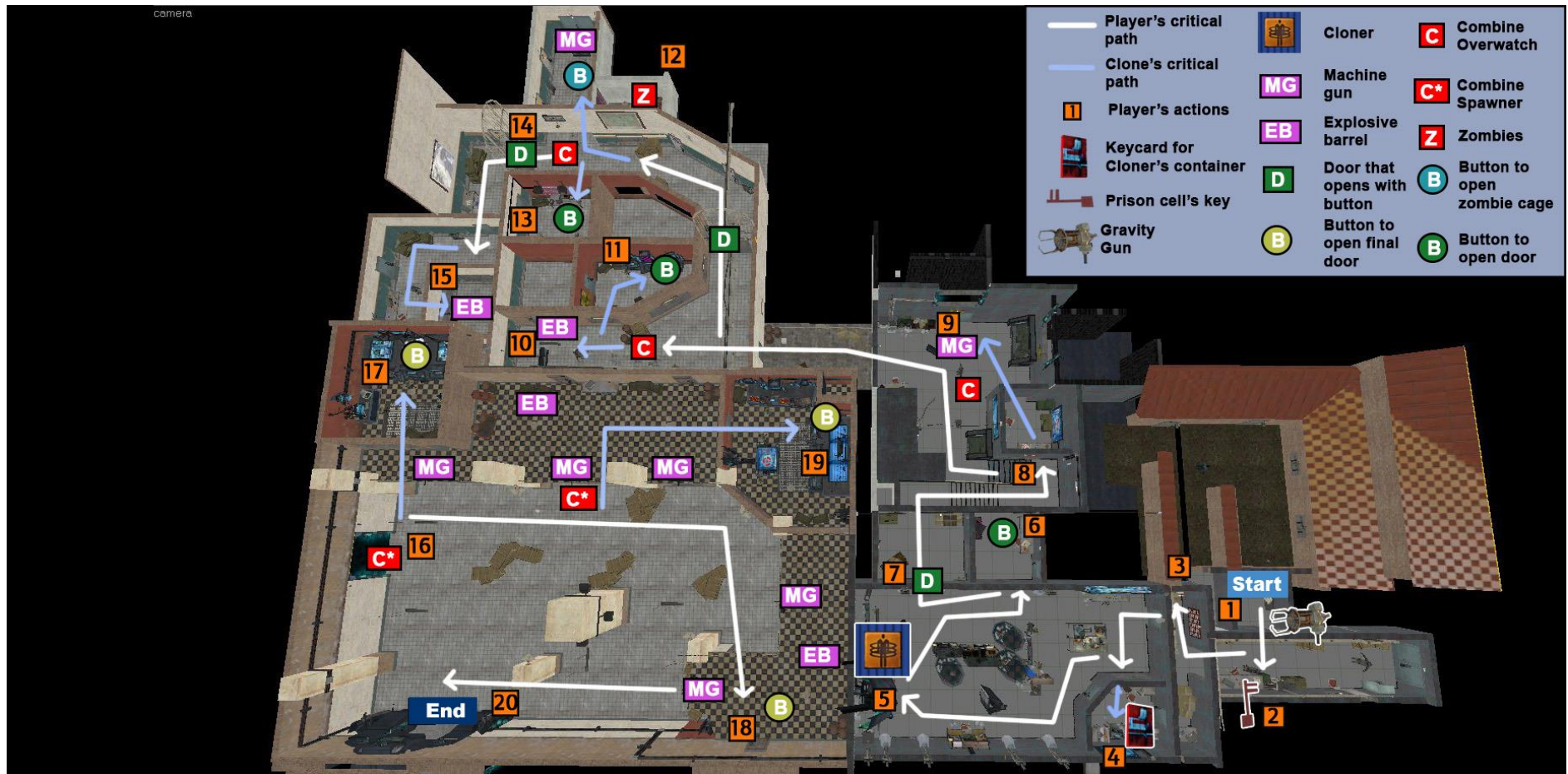   o Players fail if the zombies kill them.

Level Flow

Figure 8: Overview map of the level

Flow Summary

Prison

1. Sam knocks on the cell's window, from the outside. He gives players the Gravity Gun through the window.
2. Players use the Gravity Gun to attract a key that is on a table, in the hallway. They get the key in the cell through another one of the cell's windows.
3. Players get out of the cell, and enter the adjacent hallway. There they see Sam on the other side of the window. Sam gives them a radio to communicate with him, and throws a grenade that breaks the laboratory's door.

Laboratory

4. Players use the Gravity Gun to get the key card that opens the Cloner's container.
5. Players open the Cloner's container and get the Cloner.
6. Players throw the cloner into the small room with the button, and use their clone to press a button that opens door 7.
7. The door opens and players get to the next area.
8. Players throw their Cloner to the other side of the room.
9. Players use their clone to reach a machine gun and kill the Combine soldier.

Control Rooms

10. Players throw the Cloner over the Combine Overwatch, and get close to the explosive barrels. The players use the barrels to kill the Combine guard.
11. Players use the Cloner to enter the room through the window, and they press the button that opens the adjacent door.
12. Players use the Cloner to get past the Combine guard, and get close to the button that opens the zombie cage. They press the button, releasing the zombies, who kill the Combine.
13. Players enter the room using the Cloner, and press the button that opens the adjacent door.
14. Players go through the door into the next area.
15. Players use the Cloner to go around the room and get some explosive barrels, which they use to kill the Combine.

Prison

16. Players enter the final room, where they have to open the last door by pressing three buttons. As soon as players get to this area, the Combine activate the alarm, and Combine Overwatch start coming into the room.

17. Players use the Cloner to reach the top floor and press the first button.

18. Players press the second button on the bottom floor.

19. Players press the final button by throwing the Cloner on the second floor.

20. The door opens and players escape the Combine facility. Sam waits for them outside with a car.

Level Progression Chart

Time (min)	0		0:30		1:00		1:30		2:00		2:30		
Terrain/Objective	Escape from the prison cell				Get the Cloner		Rob's dialog		Get past the first guard				
Opponents									Overwatch soldier				
Challenges									Use the Cloner in a creative way, to avoid and kill the guard with a clone				
Wow Moments					The player uses the Cloner for the first time				First time the player uses the Cloner to defeat a guard				
New Skills/Weapons	Gravity Gun				Cloner								
Cinematics	Rob appears for the first time and gives you the cell's key and the Gravity Gun				Rob's dialog, where he tells you how to use the Cloner		Rob's dialog. He hints on how to use the Cloner to access closed rooms.						

Time (min)	3:00		3:30		4:00		4:30		5:00		5:30		
Terrain/Objective			Get past the first control room										
Opponents			Overwatch soldiers						Standard zombies (optional)				
Challenges			Open the first locked door without being noticed				Open the second locked door without being noticed Free the zombies (optional)						
Wow Moments													
New Skills/Weapons													
Cinematics													

Legend

1 square = 15 sec.	
Prison	
Laboratory	
Control Rooms	
Challenge Highlight	
Wow Moment	
New Weapon/Skill	
Cinematic	

Figure 9: Level progression chart – part 1

Time (min)	6:00		6:30		7:00		7:30		8:00		8:30				Legend
Terrain/Objective					Get past the second control room								Rob's dialog		1 square = 15 sec.
Opponents	Standard zombies			Overwatch soldiers					Standard zombies/Headcrabs						**Prison**
Challenges	Open the door to the zombies room		Let the Combine and zombies fight.		Get to the machine gun. Access the incineration room (optional).		Use the machine gun to kill the remaining zombies.								
															Laboratory
Wow Moments			Witness the fight between the combine and the zombies												
New Skills/Weapons							Mounted machine gun								Control Rooms
															Challenge Highlight
Cinematics									Rob warns you about the imminent zombie attack. He tells you how to open the prison door						Wow Moment
															New Weapon/Skill
															Cinematic

Time (min)	9:00		9:30		10:00		10:30		11:00		11:30			
Terrain/Objective				Survive the zombie attack in the General Population Room										
Opponents						Standard zombies/Headcrabs								
Challenges		Unplug the first power plug				Unplug the second power plug				Unplug the third power plug				
Wow Moments		The zombies enter the General Population Room												
New Skills/Weapons														
Cinematics														

Figure 10: Level progression chart – part 2

Time (min)	12:00		12:30		13:00		13:30		14:00		14:30				Legend
Terrain/Objective			Talk to Rob and finish the mission												1 square = 15 sec.
Opponents															**Prison**
Challenges															**Laboratory**
Wow Moments															Control Rooms
New Skills/Weapons															Challenge Highlight
Cinematics			Rob's enters through the now opened door. Rob's dialog.												Wow Moment
															New Weapon/Skill
															Cinematic

Figure 11: Level progression chart - part 3

Level Details

Constraints of the cloning mechanic

Constraints and additional rules

The Cloner has some constraints and rules that make the mechanic interesting, and prevent players from abusing it:

- Clones do not have health, so if they hit at any time, they disappear and players go back to their original body.

- Clones cannot pick up health or armor.

- Clones can interact with the environment as players would (picking up objects with the Gravity Gun or activating switches).

- Clones have the same skills and abilities as the players, with some exceptions
  - Clones cannot spawn more cloning platforms, so players can only have one clone at a time.
  - Enemies attack the clones, as if they were the players.
  - Clones can use the Gravity Gun.

- When controlling a clone, players can press "X" to go back to his original body before the 15 seconds run out. Their clone remains in the level becoming a dummy ("Secondary Body Dummy" or SBD), which disappears after the 15 seconds are over.
  - The SBD, like the OBD, stays in the same place and doesn't perform any actions
  - Enemies attack the SBD as they would attack a clone.
  - If players decide to go back to his original body before the 15 seconds run out, they still cannot spawn any Cloner until the 15 seconds are over. This prevents the creation of multiple clones.

- Players need to be careful, since the OBD is his original body. If the OBD dies while the players are controlling the clone, they dies.

Other considerations

- Due to the stealthy nature of the mission, health is not a pick up in the level. Only the Overwatch Soldiers in the level drop health when they die, so players need to be very careful, and make sure he does not take much damage.

- The windows to the exterior have bars/glass, so that players cannot shoot the cloning platform outside of the playable space.

Conveyance elements

Due to the complexity of the Cloning mechanic, conveyance is an essential in the level. Players get cues from Sam that helps them understand how the Cloner works, in addition to constant visual feedback, including:

- HUD
  - Players can know when they can spawn a new cloning platform thanks to a text on the HUD. The text reads "Spawn Cloner (TAB)", and disappears once players go inside one of their clones.
  - As soon as a player starts controlling a clone, a message shows on the screen, reminding players that they can press X to go back to the original body.
  - A timer appears in the HUD when players start controlling a clone, so that they know how much time they have left before going back to their original body.
  - A permanent message on top of the screen tells players what their next objective is.
  - Whenever the OBD receives damage, a small icon shows up close to the corresponding body's health. That way, players can know if their other body is under attack when they are controlling their Clone.
- As soon as players shoot the cloning platform, a screen overlay effect starts playing, indicating that players are about to take control of a clone.
- Once the cloning platform lands, a new screen overlay effect plays for a second, to show players that they are travelling into the clone's body.
- When players are controlling a clone, an overlay effect is visible at all times, so that they never get confused about whom they are controlling.
- If a platform fails to land on a valid surface, a spark effect plays wherever the platform has landed, indicating that the platform has "disintegrated". Players can then spawn a new platform and try again.

Level breakdown by Area
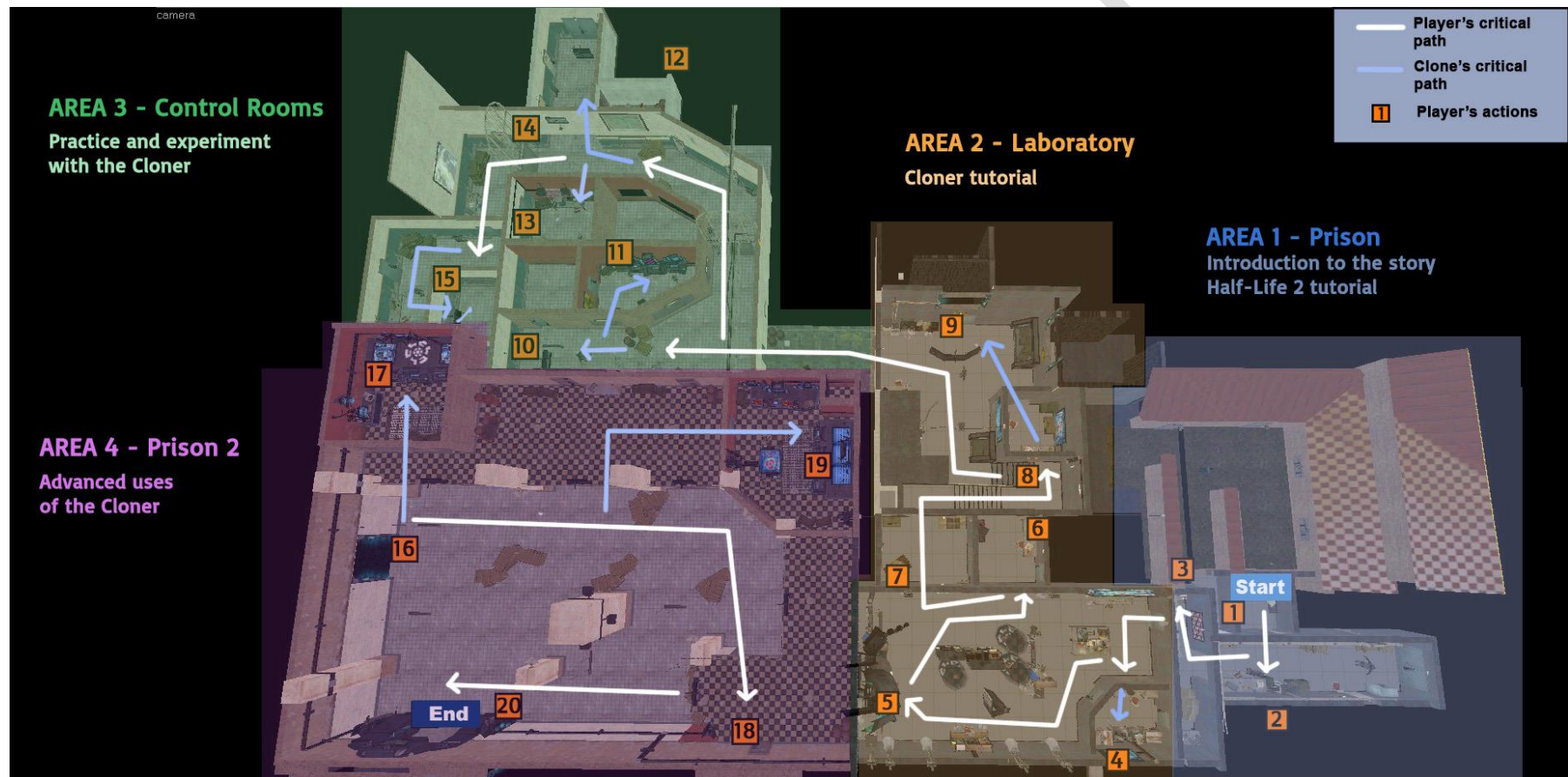
Figure 12: Detailed Overview Map

The level has four areas with increasing difficulty, with the goal of introducing the Cloning mechanics to the players.

- **Area 1 - Prison:** Players start in the prison, where they meet Sam and learn about Barney's situation. This area serves as an introduction to the story and the characters. It also introduces the Half-Life 2 mechanics to the players, who need to get out of their cell by solving simple puzzles using the Gravity Gun.

- **Area 2 - Laboratory:** The second area of the level is the laboratory, where players see the Cloner for the first time, and learn about its basic functionality. Area 2 is a tutorial for the cloning mechanics, which teaches players about the Cloner's potential uses for puzzles and combat. Players get the chance to use the Cloner to enter locked rooms through the windows, and to get past guards in order to reach weapons that are out of reach.

- **Area 3 – Control Rooms:** Once players have learned the basics, they become familiar with them in the Control Area. The challenges here build on the ones that players saw in the prison, by adding additional elements to familiar situations. Players get to fight the Combine with machine guns, explosive barrels, and even with zombies, that they can free by using the Cloner.

- **Area 4 – Back to the prison:** The last area of the level offers a twist that tests the players' mastery of the cloning mechanic. Area 4 has two floors, with players on the bottom floor, and machine guns located on the top floor. There is no connection between the top floor and the bottom, so players can only reach the top floor by throwing the Cloner there. In this final challenge, players need to find three buttons to open the final door, while Combine enter the room through the bottom floor and try to stop the players. In order to complete their mission, players need to alternate between their OBD, who is on the bottom floor, and their SBD, who is the only one that has access to the weapons.

Area 1: The Prison

Figure 13: Area 1 Detail Map with Keys

Initial Loadout

- Nothing

Gameplay/Story

1. The players starts in his prison cell, which has two windows, one leading to the prison's interior, and one leading to the outside. They have no weapons.

2. Sam calls players from the outside, through the window, and tells them that he is there to help them escape.

3. Sam throws the Gravity Gun into the cell through the window, and players pick it up.

4. While Sam distracts the guards, players use the Gravity Gun to attract the cell's key, which is laying on a table outside of their cell.

5. Players use the key on the cell's door and get out of the cell.

6. Players meet Sam again, whom they see through another window.

7. Sam gives players a transmitter that they can use to communicate with him.

8. Sam throws a grenade that destroys the laboratory's door, allowing players to progress.

Text and Dialog

Objective Text

An objective text is always visible on the top part of the screen, to remind players about their current goal:

Trigger	Text
When players get the Gravity Gun	OBJECTIVE Get out of the cell
After Sam leaves to distract the guards	OBJECTIVE Meet Sam in the next room

Figure 14: Objective text in area 1

Dialog/Script

Characters	Trigger	Dialog
Sam	In the cell, after players see the scripted sequence involving the Combine. Sam is on the other side of the cell's window that leads to the exterior. If players do not notice Sam the first time, the previous dialog replays every four seconds, until players look at Sam.	"Hey!" "Barney up here!"
Sam	When players see Sam.	"We don't have much time." "I'll get you out of here." "Here, I brought you something." –Sam throws drops the Gravity Gun in the cell.
Sam	After players pick up he Gravity Gun.	"I'll distract the guard. Use that to get the cell's key." "Ready? I'll see you in the next room!"
Sam	After players get out of the cell and meet Sam again.	"Hey, Barney." "Take this radio, we'll use it to communicate from now on."
Sam	When players pick up the radio	"Now let me give you some help with this door before I go." "Stand back!"
Sam	If players do not stand back when Sam tells them to.	"Stand back, you are too close!"
Sam	After Sam throws the grenade.	"There you go! Talk to you inside, Barney."

Figure 15: Script for dialog in Area 1

Other text

Additional text displays in the middle of the screen, to inform players when they do something gameplay-relevant.

Trigger	Text
When players get the key through the window	Key Obtained

Visual References

Theme

For theme references, see the Key Theme References section (Laboratory).

Characters introduced

- Barney

- Sam

Figure 16: Barney [9]

Figure 17: Sam's concept [10]

Enemies introduced

- Overwatch Soldier

Figure 18: Overwatch Soldier [11]

Environment
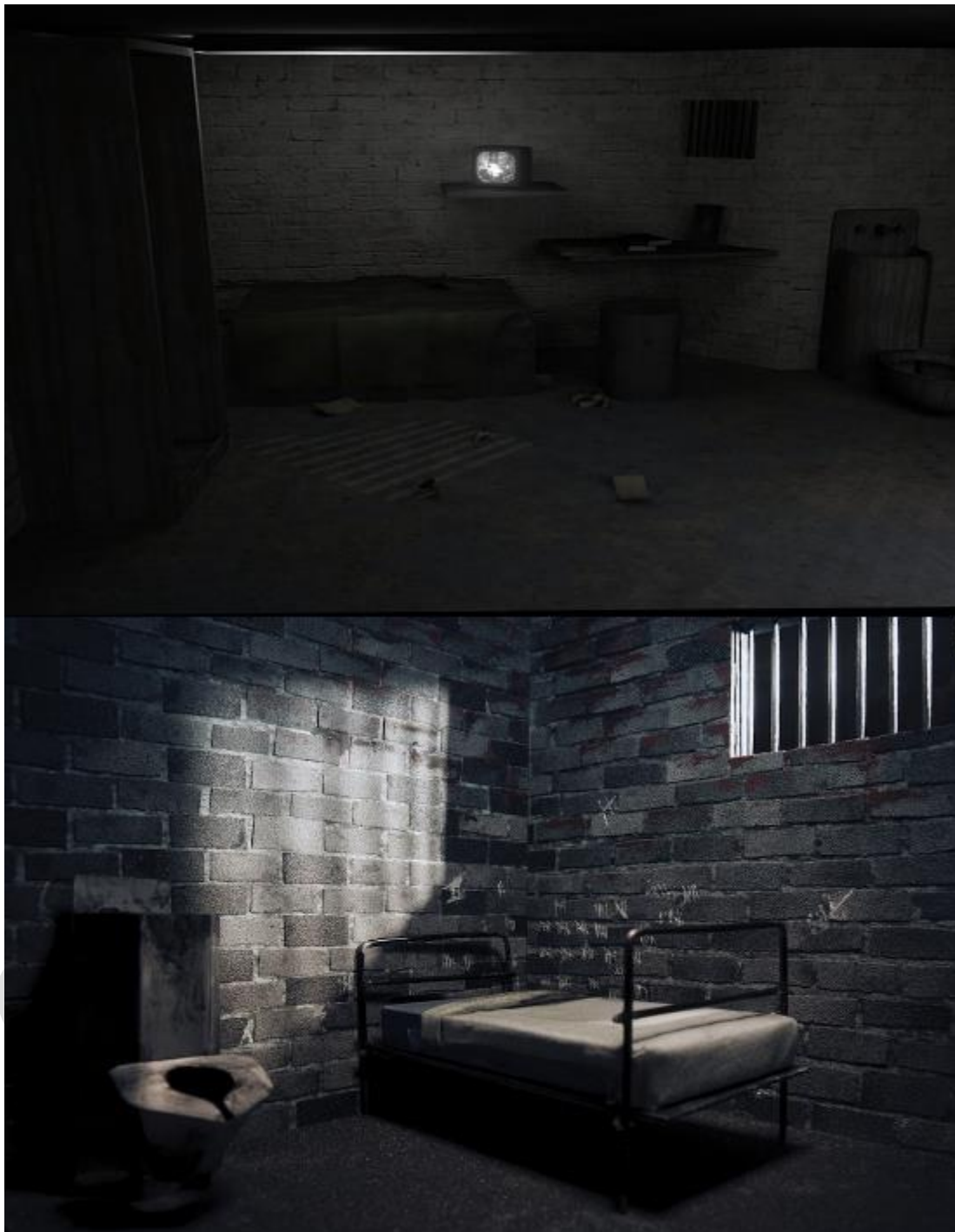
Figure 19: Prison's cell austere look [14]

Figure 21: Concept for prison cell door [16]
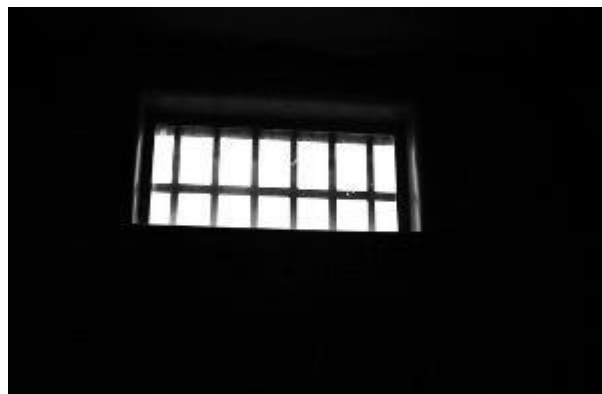
Figure 20: Concept for cell's window [15]

Area 2-1: Laboratory

Figure 22: Map of the first half of the laboratory

Initial Loadout
- Gravity Gun

Gameplay
1. As soon as players enter the laboratory, Sam contacts them and tells them that they need to look for a special key card. The key card gives players access to the Cloner, which is a weapon that the resistance wants to steal from the Combine.

   O1. Players can see how the Cloner works before they get it. A button in front of the headcrab cage, activates a system that shows the process of creating a headcrab's clone. The display shows players how the Cloner works, before they have to use it in the game.

2. Players see the key card through the window of a small office. They use the Gravity Gun to attract the card.

3. Players use the card on the Cloner container's console, which opens the container.

4. Players get the Cloner.

5. Sam gives players a brief explanation of how the cloner works, telling them that the Cloner allows them to create clones of themselves, that they can later control.

6. Players see a button inside a small, locked room, with an open window. Players throw the Cloner inside the room through the window, which creates a clone inside the room.

7. Players use their clone to press the button. Through the small room's window, they can see a door opening.

8. Players go through the door that just opened.

9. Players exit into the next area.

Text and Dialog

Objective Text

Trigger	Text
When players get the Gravity Gun	OBJECTIVE Find the Cloner's key card
After Sam leaves to distract the guards	OBJECTIVE Get the Cloner
Once Sam tells players where to go.	OBJECTIVE Meet Sam in the room behind the big prison room

Figure 23: Objective text in area 2

Dialog/Script

Character	Trigger	Dialog
Sam	When players enter the laboratory.	"Hey Barney" "Listen, if you want to get out of here, you'll need the help of the Cloner" "I need you to look around the lab and find a card to open the Cloner's container" "Call me once you get it!"
Sam	When players pick up the key card.	"That's the card for the Cloner's container!" "Now look for the Cloner, let me know when you find it." "First, press H to spawn the Cloner in front of you" "It should be fairly easy!"
Sam	After players press H and the Cloner spawns in front of them.	"Now pick it up and throw it with the Gravity Gun." "The Cloner will create a Clone of yourself as soon as it lands!"
Sam	After players pick up the Cloner with the Gravity Gun and throw it.	"Get ready!"
Sam	Right before players take control of their clone.	"Here we go!"
Sam	After players start controlling their clone for the first time.	"How did that feel? Now you are controlling your clone!"

		"Remember, you have 15 seconds before the Clone disappears." "You can also press Q to go back before the time runs out."
Sam	When players go back to their original body, after completing the tutorial.	"That's all you need to know" "Use the Cloner to avoid the guards and access inaccessible areas." "I'll meet you in the big control room." "You can see it behind the glass window." "See you soon Barney!"
Sam	If players complete the Cloner tutorial before Sam has time to finish giving an instruction.	"Wow Barney you are a pro!" "Use the Cloner to avoid the guards and access inaccessible areas." "I'll meet you in the big control room." "You can see it behind the glass window." "See you soon Barney!"

Figure 24: Script for dialog in Area 2

Other text

Trigger	Text
When players get the key card through the window.	Key Card Obtained
When players get the Cloner.	Cloner Obtained

Characters introduced

Enemies

- Headcrab*

*Headcrabs do not attack in this area. They are inside an isolation tube that separates them from the playable space.

Figure 25: Headcrab [13]

Mechanics introduced

- The Cloner

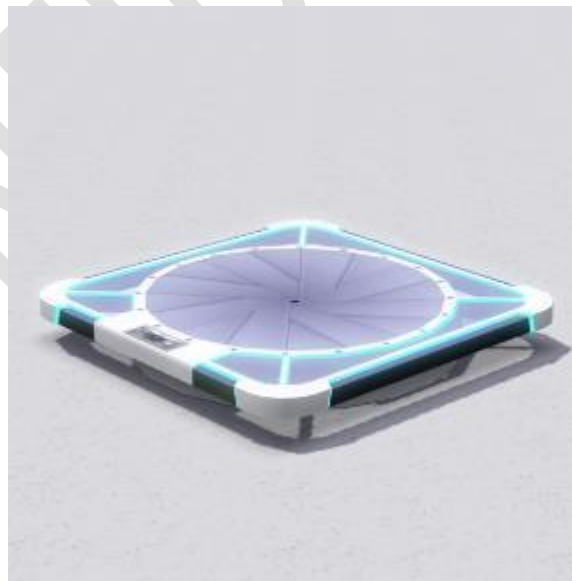Figure 26: Concept for cloning platform [17]

Environment references

Figure 27: Example of laboratory lighting [18]

Figure 28: Example of laboratory look and feel [19]

Figure 29: Example of cloning pod used in experiments [20]

Area 2-2: Laboratory
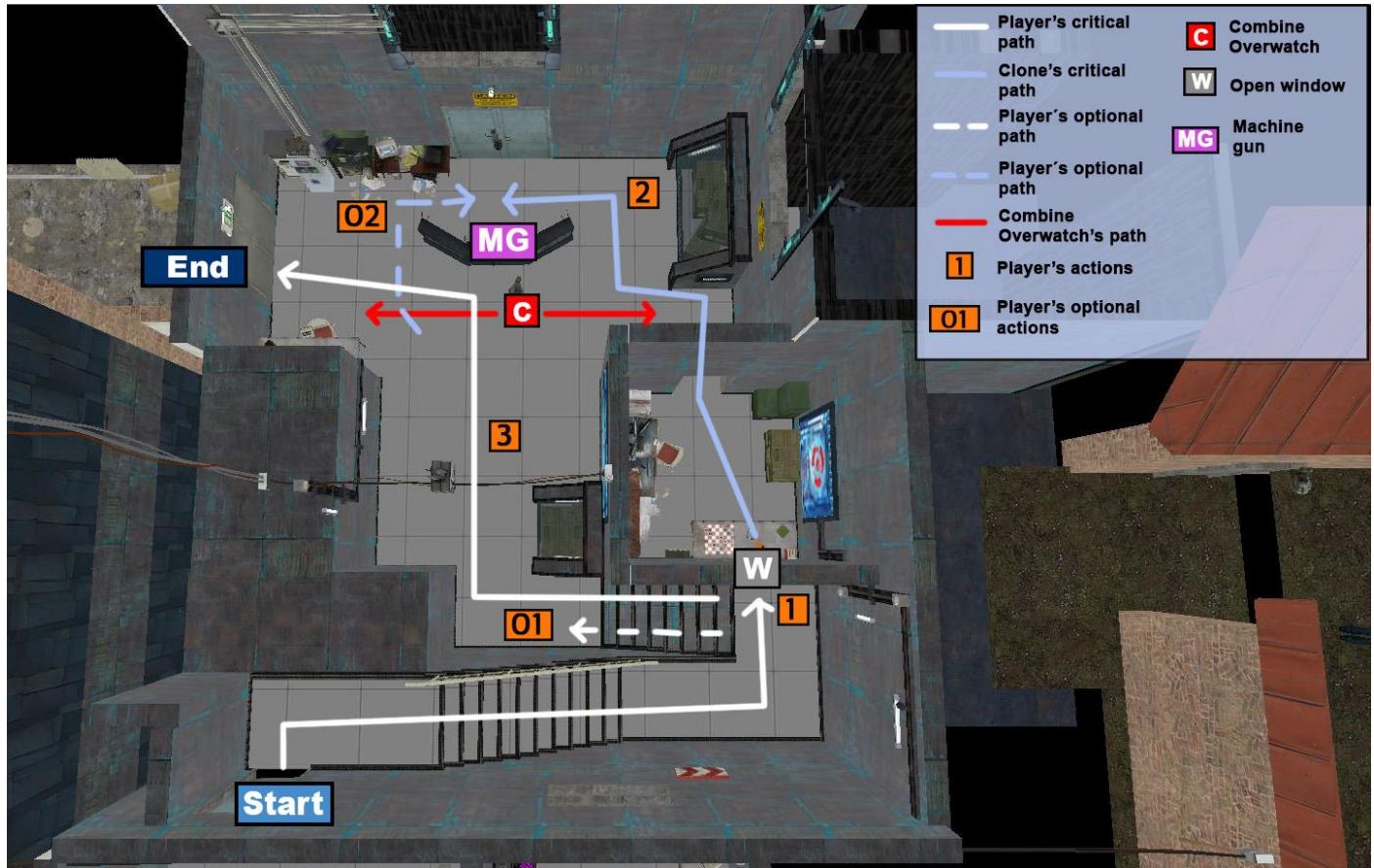
Figure 30: Map of the first half of the laboratory

Initial Loadout

- Gravity Gun

- Cloner

Gameplay

1. Players throw the Cloner through the open window.
2. Using their Clone, players can go around the Combine's path and reach the machine gun on the opposite side of the room. They use the machine gun to kill the Combine.
3. Players get out of the room once they have killed the Combine.
O1. Players hide behind the weapon crate, and throw the Cloner over the Combine's head. The Cloner lands on the opposite side of the room.
O2. Players use their Clone to kill the Combine with the machine gun.

Environment References

This area is part of the laboratory. For other references, see Area 2-1: Laboratory.

Figure 31: Example of mounted machine gun [24]
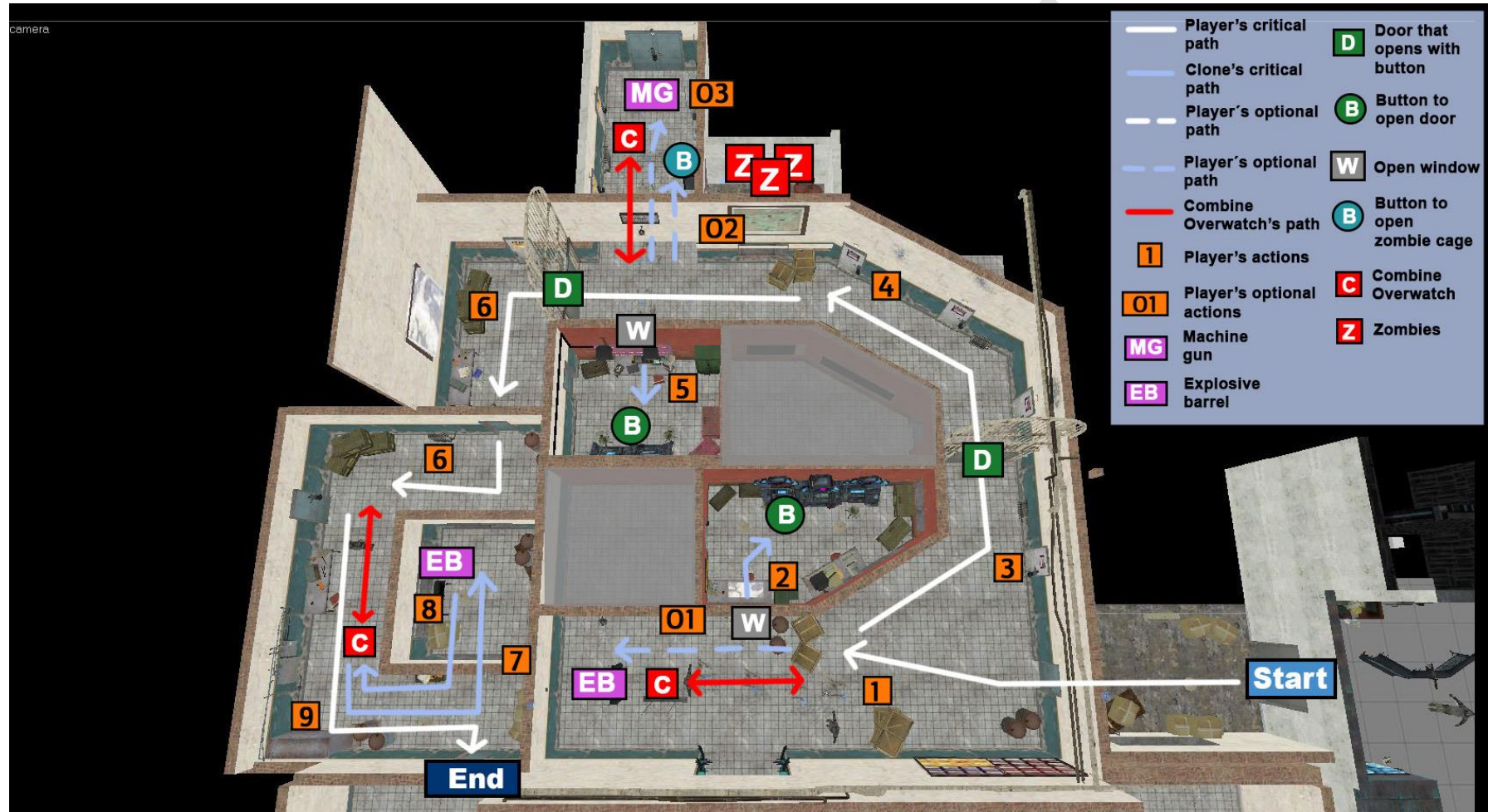
Area 3: Control Rooms

Figure 32: Area 2 map with key

Gameplay

1. Players enter the room and see a Combine patrolling. They can see a highlighted red button inside a small room to their right.

   O1. Players can throw the Cloner to the other side of the room, and use their clone to reach several explosive barrels. They can then throw the barrels at the Combine soldier to kill him. It does not matter if they kill themselves in the process, since they are controlling a clone.

2. Players throw the Cloner inside the room, through an open window.

3. Players press the button and a door opens to their right. They see the door opening through a screen inside the room, as well as through the room's window.

4. Players see another Combine patrolling, and they hide behind some boxes. They can see a highlighted red button inside a small room to their left.

   O2. Players throw the Cloner in the small alley to their right. Using their clone, they press the button that opens the zombie cage. Players go back to their original body and watch as the zombies kill the Combine soldier.

   O3. Players throw the Cloner in the small alley to their right, and use their clone to reach a machine gun. They use the machine gun to kill the Combine soldier.

5. Players throw the Cloner inside the button room, through the window. They use their Clone to press the button, which opens a door. Players can see the door opening through the room's window.

6. Players see a Combine soldier patrolling.

7. Players throw their Cloner to the other side of the room, and go around the corner into an adjacent room.

8. Players get the explosive barrels inside the adjacent room, and use them to kill the Combine.

9. Once the Combine is dead, players enter the final room.

Characters introduced

Characters

- Barney

- Sam

Enemies

- Zombie.

Figure 33: Standard Zombie [12]

Environment References

Figure 34: Control area lighting [25]

Figure 35: Example of security monitors in control room [21]

Figure 36: Example for the central rooms in Control Area 1 [22]

Figure 37: Examples of switches to open doors in control area [23]

Area 4: Prison 2

Figure 38: Area 3 map with keys

Gameplay/Story

1. As players enter the final room, they can see Sam in front of them through the big exit door, outside of the facility. There are three force fields separating Sam from the player. Sam tells players that they need to find the buttons to deactivate the force fields, in order to scape.

2. Players use the Cloner to create a clone on the top floor. They enter a small control room where they find the first button.

3. As soon as players press the button, an alarm goes off. A display in the room shows Combine soldiers entering the area from one of the doors on the bottom floor.

   O1. Players can release zombies that are in a cell on the bottom floor, by pressing a button close to the cell's door. Once freed, zombies distract the Combine soldiers while players look for the rest of the buttons.

4. Players find the second button on the bottom floor.

5. Players press the buttons and another alarm goes off. Players see more Combine storming the area through a screen.

6. Players create a clone on the top floor, to look for the last button.

   O2. While they are on the top floor, players can access machine guns and explosive barrels, which they can use to fight the enemies storming the bottom floor. Players need to be careful since the Combine can attack their OBD while they are looking for the buttons on the top floor.

7. Players press the final button, disabling the last force field.

   O3. Players can also access the button room directly by throwing the Cloner inside through the window.

8. Players run towards the door, where Sam is waiting for them with a car, and the level ends.

Text and Dialog

Objective Text

Trigger	Text
When players enter the final room	OBJECTIVE Find the three buttons that unlock the security gate

Figure 39: Objective text in area 2

Dialog/Script

Character	Trigger	Dialog
Sam	When players enter the room	"Over here Barney! You made it!" "This door is connected to three security switches in the room." "Find them and you should be able to unlock it." "Good luck Barney. See you soon!"
Sam	After players press the three buttons and the final door unlocks.	"Run Barney! We need to go!" "Get in the car!"

Environment References

Figure 40: Textures example for the prison area [26]
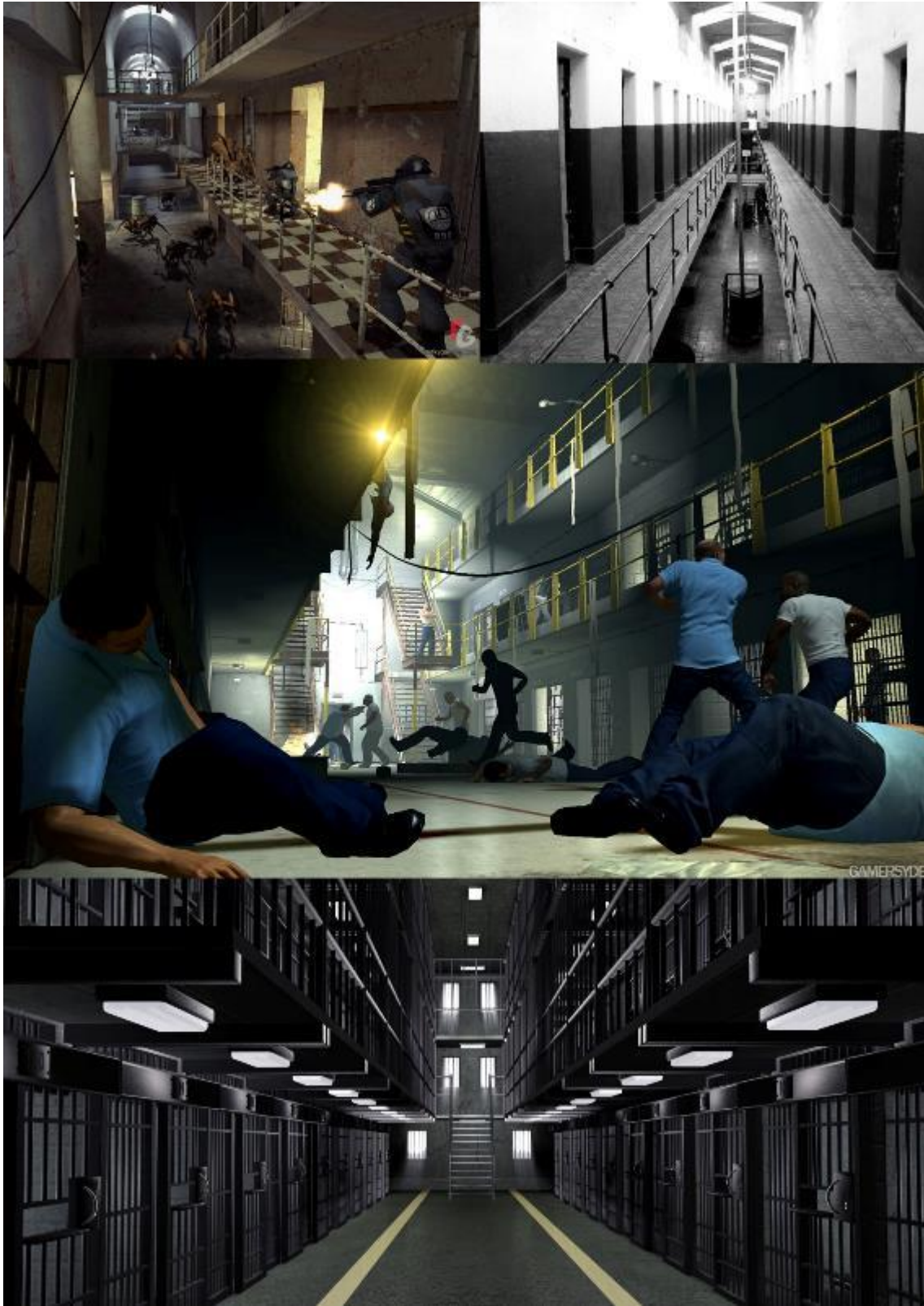

Figure 41: Lighting example for the prison area [27]

Figure 42: Multiple floor concept for General Population Room (Prison) [28]

Figure 43: Example of force field [29]

Critical Asset List

Asset Name	Type	Use	Exists?	Pic
Clone pod	Static	Pod used for cloning experiments, visible frequently in the laboratory	Yes	
Door	Static	Door model	Yes	
Force Field	Dynamic	Force field for the final room	Yes	
Monitor	Dynamic	Monitors for the control area, that show other parts of the level	Yes	
Switch (lever)	Dynamic	Switch that the player can use to open doors	Yes	

Explosive barrel	Physics	Explosive barrel that the player can grab with the gravity gun	Yes	
Power Plug	Physics	Power plug for the last room, that powers the final door	Yes	
Crate 1	Physics	Crate for player's cover	Yes	
Crate 2	Physics	Crate for player's cover	Yes	
Mounted machine gun	Physics	Machine gun the player can use to kill zombies	Yes	
Cloner	Physics	The Cloner weapon	No	
Cloning platform	Physics	The platform that the player throws to create a clone	No	
Gravity Gun	Physics	Starting weapon	Yes	
Sam	Actor	Helper character that guides the player during the level	Yes	

			Yes	
Barney	Actor	Main character	Yes	
Overwatch soldier	Actor	Combine enemy	Yes	
Standard zombie	Actor	Zombie enemy	Yes	
Headcrab	Actor	Zombie enemy	Yes	
Concrete wall texture	Texture	Texture for the wall in the prison	Yes	
Concrete floor texture	Texture	Texture for the floor in the prison	Yes	

Concrete ceiling texture	Texture	Texture for the ceiling in the prison	Yes	
Laboratory wall texture	Texture	Texture for the wall in the prison	Yes	
Laboratory floor texture	Texture	Texture for the floor in the prison	Yes	
Laboratory ceiling texture	Texture	Texture for the ceiling in the prison	Yes	
Control room wall texture	Texture	Texture for the wall in the prison	Yes	
Control room floor texture	Texture	Texture for the floor in the prison	Yes	
Control room ceiling texture	Texture	Texture for the ceiling in the prison	Yes	
Blood decal	Decal	Decal to simulate blood on areas of the prison	Yes	

Skybox texture	Texture	Texture used for the Skybox of the level		

Appendix

Why is this level fun?

  Players have the chance to use a very powerful mechanic, which in essence makes them invincible for a few seconds, something that players never get to experience the chance to do during *Half Life 2*. Players also get the chance to outsmart the enemies in creative ways, by creating clones and using them as traps, rather than just shooting them as it is common in *Half Life 2*. Finally, creating clones gives players an incredible amount of freedom, and lets them reach almost any surface where a human can fit. "Doppelgangers" is an exciting opportunity for players to explore all those areas that are usually out of their reach in regular levels.

What makes this sequence interesting/memorable?

  The use of the mechanic for the first time leaves a lasting impression on players, when they start controlling their clone and see their original body in the distance.

  The last room provides a memorable ending, where players need to "team up" with their own clones, by using them to reach the guns in the room. Players need to alternate between its original and its clone form, and fight zombies while frantically looking for the power plugs that open the door to the outside.

How would you communicate the mechanics to the player?

  Due to the complexity of the mechanic, a secondary character was necessary in the level. Sam introduces both the environment and the Cloner, to make sure that players understand the basics about his new weapon and his situation.

  Although Sam gives basic instructions to the players, it is up to them to figure out the solutions to the puzzles. Because the potential uses of the mechanic can be difficult to grasp at first, all of the puzzles in the level (excluding the last room, where Sam tells you what to do) have at least two solutions. That way, players do not need to figure out the exact right solution, and instead can experiment with different uses of the Cloner.

  Visual conveyance is also essential, since players need to know what is happening every time they use the Cloner. In the level, players receive several visual cues, as described at the beginning of the Level Details section.

How can the player break it?

The easiest way to break the level is to throw the cloning platform onto a surface that players are not supposed to use. To avoid this, the floors of the level have triggers on them. If the platform fails to land on one of the triggers, it disintegrates, and players get the chance to spawn a new platform and try again. The cloning platform can also land on a surface with a certain rotation, in which case the players' camera has a rotation when he starts controlling the clone. A "phys_keeppuright" entity makes sure that the cloning platform is always facing upwards. In the unlikely case of an undesired rotation, players can just press "X" to go back to the original body, which sets the rotation back to its normal value.

If they are not careful, players could end up in a situation where they have trapped themselves into a room. In order to avoid any entrapment situation, all rooms that players can access have a window in them, and a switch to open them on the outside. In case of being inside a locked room, players can simply create a clone outside by using the window, and then use the switch to open the door again.

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