



Presents

The Colony

GAM300/302

Game Design Document

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Introduction

The Colony is a 3D puzzle platformer that involves the player manipulating the environment in order to traverse through navigation puzzles. Play as an engineer who awakens from stasis to find that the space colony he was sent to has been damaged. Traverse through 3D levels, manipulating the environment as you go, in an attempt to repair the sabotaged areas. Solve navigation puzzles using your Trans Modification Device as you platform from location to location as you attempt to discover what has occurred.

Game Flow

The game begins with the player character waking up from stasis. It should be immediately obvious that something has gone wrong. There should be the sound of an alarm heard with lights flashing on the electronic equipment. Instructions on a computer screen should let the player know what he needs to do in order to turn off the alarm. This immediately tense (yet safe) introduction should engage the player in the story. This will also serve the purpose of providing a small tutorial on the basic mechanics of the game like moving and jumping, and provide a vague idea of what the game setting is.

Once the player achieves the immediate objectives of the level start, the tone should change to being much more laid back. Now the player will learn how to use his device in order to manipulate the environment. Each different type of manipulation will be taught one at a time and then used in combination with each other as the levels progress. The puzzles will start out easy and the player should have a sense of discovery as he figures out how to navigate through the environment. As the levels progress and more story is revealed in terms of what has occurred in the colony, the player should feel the tension rise as it becomes obvious that someone is sabotaging it. Overall, the game is a combination of thinking, exploration, and then taking actions.

The slow pacing at the beginning of the game will allow the player to get adjusted to using the controls. The player should feel intrigued as to what has occurred on the space colony and should be excited to use the device to solve puzzles. However, the atmosphere should provide a somewhat eerie feeling. After the discovery of sabotage, the player should feel a sense of danger as he knows something or someone is working against him.

Our goal is to make puzzles that are complex enough to make the player want to continue playing and feel a sense of accomplishment when he or she solves them, yet simple enough as to not frustrate them. We also want to provide a story that is straightforward enough for us to convey without a lot of unnecessary work, yet captivating enough to make the player connect emotionally with the main character which gives the player an incentive to want to solve the puzzles, fix the space colony, and continue playing.

Earlier areas should be relatively short experiences, but as the levels become more complex, they areas will take longer to traverse. Ideally a session of the game would take an hour.

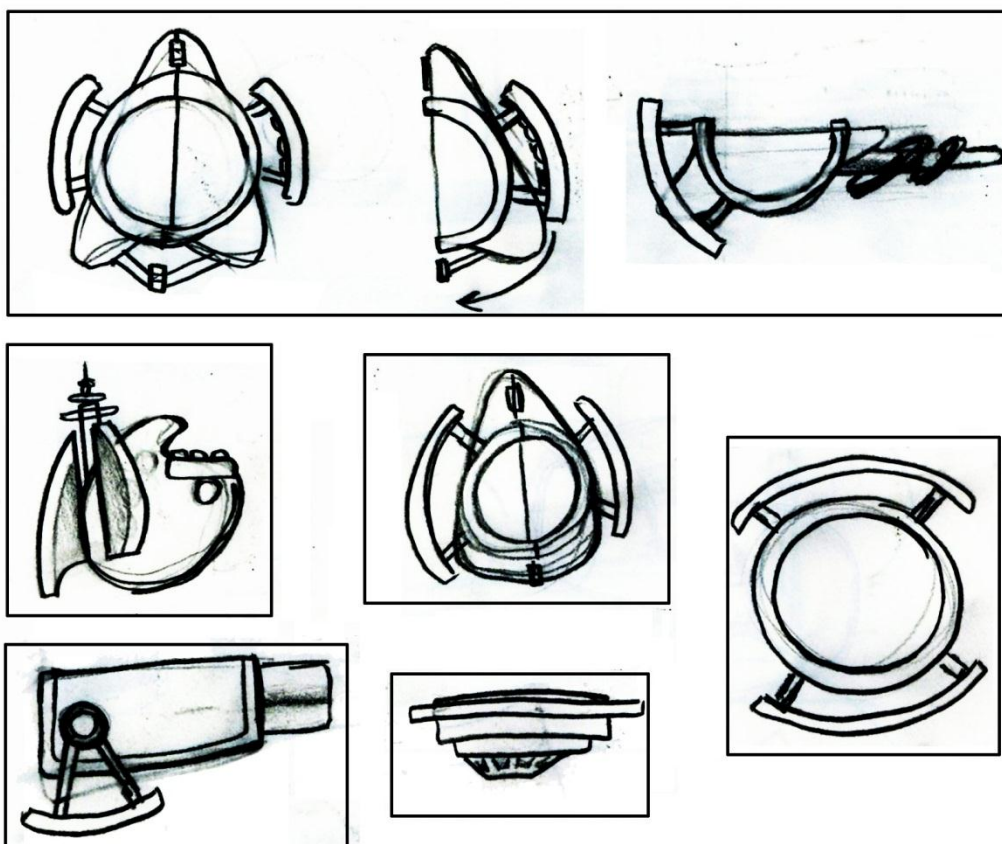
Game Mechanics

Movement Mechanics

The player will be able to move left, right, backwards, or forwards. He will also be able to jump.

Trans Modification Device

The player will have a Trans Modification Device that will allow him to target and shoot power sources in order to power up the device. Once he has activated that power, he can then target and shoot various corresponding objects in the world in order to manipulate them.

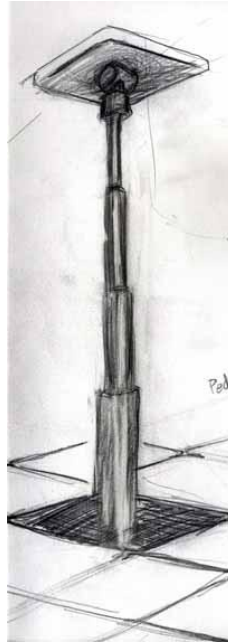


Powers

The player will be able to progress through the game by powering up the Trans Modification Device at the various power stations in the world by shooting them. Each power allows the player to interact with different objects in the environment in unique ways when that power is active. When a power is activated, all objects of the corresponding color will become inter-actable and will visually change to reflect their power's color. All previously powered up objects will cease to be inter-actable and will return to their normal visual look. Line of sight is required to use the Trans Modification Device on power sources and objects.

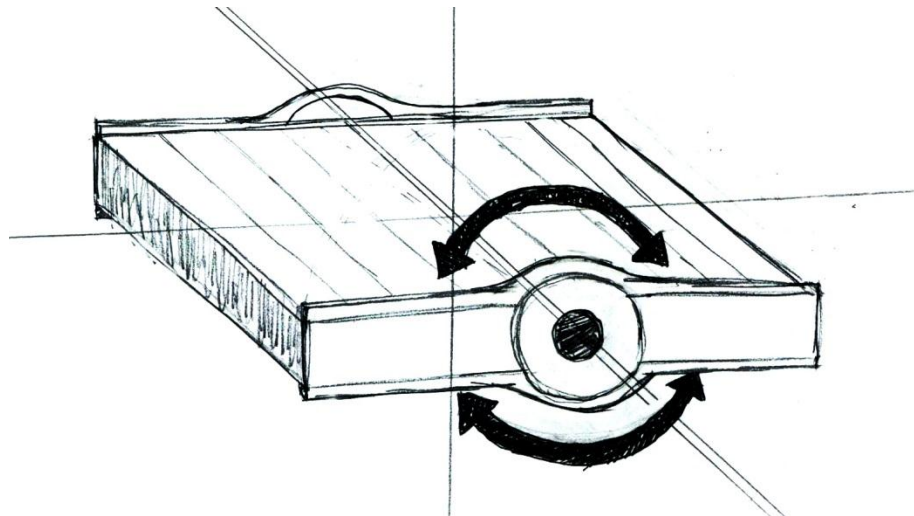
Blue Power

When the blue power is active, the player will be able to extrude blue platforms from the wall by shooting them or their corresponding panels with the Trans Modification Device. The player will be able to stand on top of these platforms. The intention is to also have these platforms be a reflected surface that will reflect lasers.



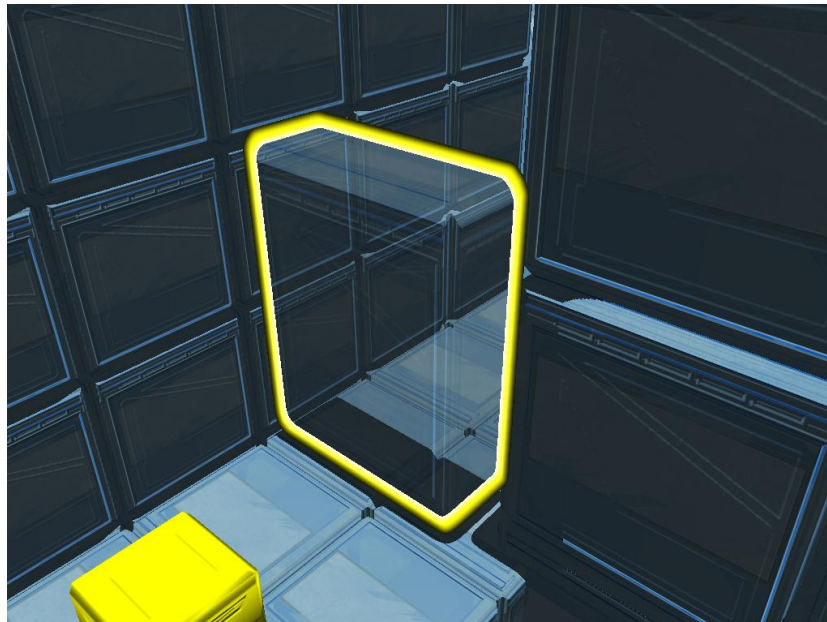
Red Power

When the red power is active, the player will be able to rotate red platforms along a single axis by shooting them or their corresponding panels with the Trans Modification Device. The player should be able to stand on top of these platforms as well as on the sides if the side is face up.



Yellow Power

When the yellow power is active, the player will be able to make yellow objects tangible by shooting them or their corresponding panels with the Trans Modification Device. This means that the objects will go from being visible and collidable to transparent and non-collidable.



Orange Objects

Orange objects can be altered with either the red power or the yellow power. Depending on what power is active determines how the object can be manipulated.

Purple Objects

Purple objects can be altered with either the red power or the blue power. Depending on what power is active determines how the object can be manipulated.

Green Objects

Green objects can be altered with either the blue power or the yellow power. Depending on what power is active determines how the object can be manipulated.

Jump Pads

Jump pads will allow the player to reach greater heights when the player jumps on them. They should propel the player further than they would be able to go with their normal jump or movement. The height and angle of the jump should be variable from jump pad to jump pad. Once a jump pad is collided with, the player should automatically be thrust upon collision. If the jump pad goes straight up, the player should be thrust back up every time he

lands on the jump pad. The player doesn't need to jump while on the jump pad to make it work.



Lasers

There will be lasers in some puzzles. These lasers will come out of a source in the wall and will require the player to reflect the laser off of red platforms to a location that needs power. Lasers can damage the player if they collide with it.

Damage

The player can be damaged by lasers. While the player will be able to take a small amount of damage before "dying," there is no health bar. The screen will merely get redder as damage is taken. If the player dies, he is reset to the last saved checkpoint.

Winning

The player wins the game once he has gone through all levels of the environment, fixing all of the damage that has been done.

Losing

The player doesn't really lose the game. He can die by either taking too much damage or by falling into a pit. In these cases he will return to his last saved checkpoint. There are no lives so the player can die as many times as he wants and restart at a checkpoint.

Game Characters

As of now there is only one character in the game and that is the player character. The game is in first person, so we will never see the player character, but he is a human. He has been sent in stasis to a space colony to make repairs because he is an engineer. Unfortunately when he arrives, he finds that he is the only one in his group who has either made it alive or who has come out of stasis. All other people on the planet are missing. He must figure out what is going on with the space colony and make the necessary repairs. He has the Trans Modification Device that allows him to interact with various objects in the environment and navigate through the levels.

Game Resources

Trans Modification Device

This device will allow the player to interact with power sources and objects in the environment. The player must target with the device and then shoot in order to interact with things. First a power source must be targeted and shot and then the corresponding inter-actable objects will be activated and can be modified by using the device to target and shoot them.

Power Sources

Power sources can be shot with the Trans Modification Device. When the power source is shot, the device now harnesses that power which allows the player to interact with the corresponding inter-actable objects. There will be 3 power sources, a blue, a red, and a yellow. When one power is acquired, the other powers are de-activated.

Inter-actable Objects

These objects can be manipulated when shot by the Trans Modification Device when they are powered up. There are red, blue, yellow, orange, green, and purple objects. See the Game Mechanics section for more specific information on how each object type can be altered.

Jump Pads

When the player collides with the jump pad, he should be propelled in the direction of the designated force for that jump pad. The player doesn't actively need to jump on the jump pad to make it work, it should propel him each time he collides with it.

Lasers

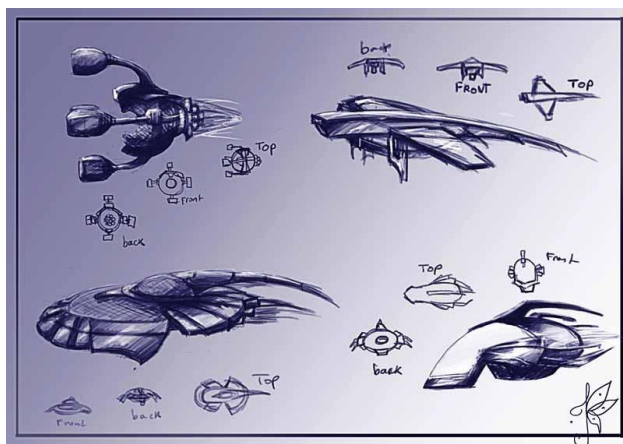
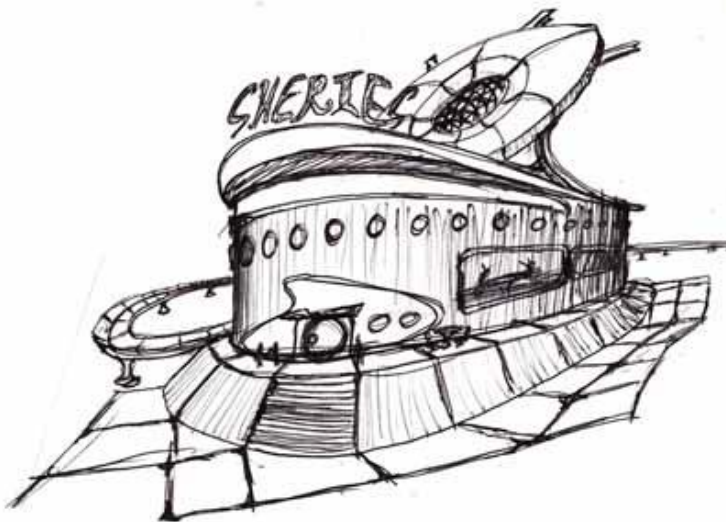
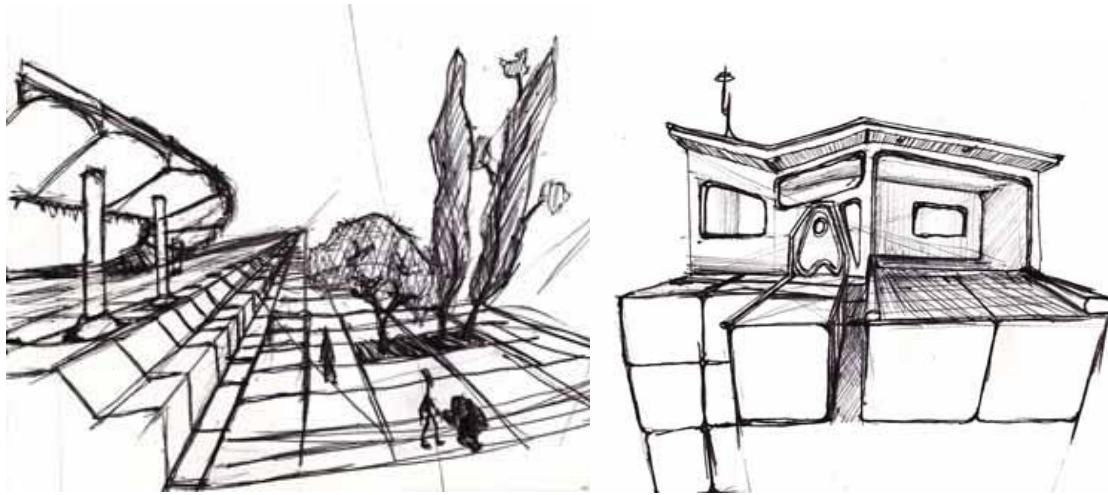
Lasers will come out of a source in the wall and will damage the player if he collides with them. Lasers can be reflected off of red objects. The objective of reflecting them is to get them to hit an object that needs to be powered up.

Game Environment

The game will take place on a space colony on a foreign planet. We intend to have both interior and exterior environments. The environment will consist of different areas of a retro sci-fi city. We want to have each level be a different area of the colony and thus a somewhat different theme. One area will be laboratory, one area will be a dining facility, one area will be out on the street, one area will be a botanical garden, etc. The environment should reflect that the people who lived there were technologically advanced so there should be many devices, electronics, computers, etc. displayed throughout the levels.

All objects in the environment will be static with exception to the inter-actable objects that can be manipulated when powered up with the Trans Modification Device. The only objects in the

environment that do damage are lasers. However the player can fall to their death in various pits in the world.



Game Controls

Moving

The player will be able to move left, right, forward, and backward with either WASD or the arrow keys.

Jumping

The player will be able to jump with the space bar.

Camera

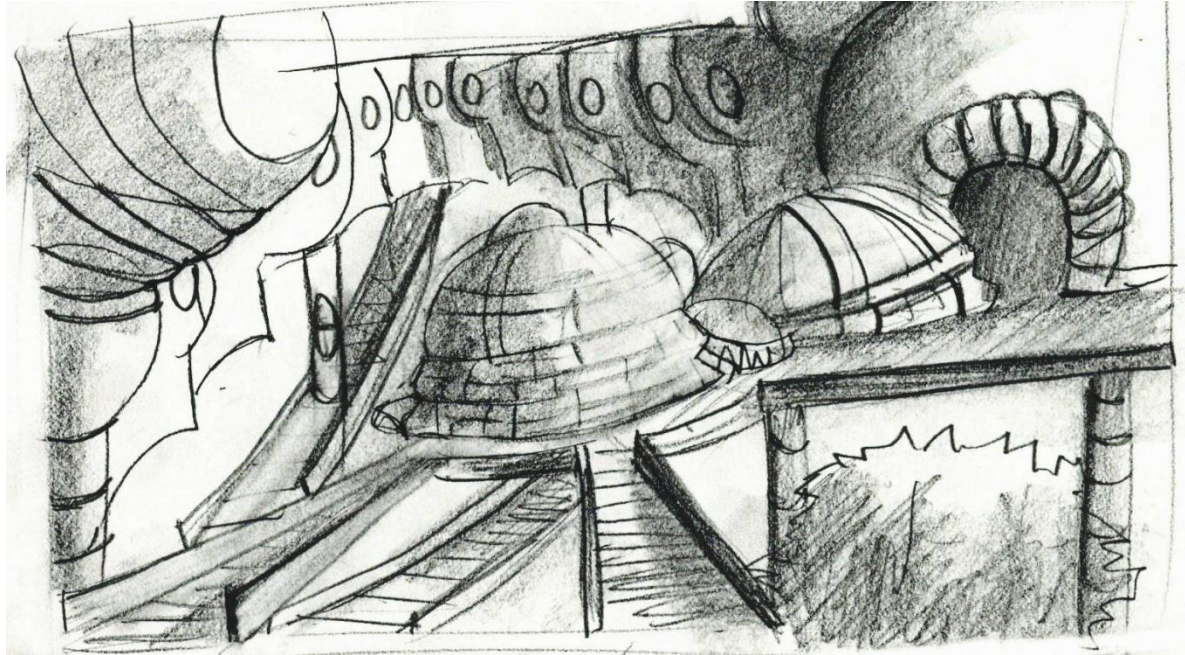
The player's camera moves in the direction that the player moves and will pan in the direction that the mouse moves. Conversely the player will rotate in the direction that the camera is pointing, so if the player uses the mouse to look in another direction, the character will re-orientate in that direction.

Trans Modification Gun

The player will target with the mouse. The reticule will target where the mouse cursor is. The player can then shoot power sources by clicking the Left Mouse Button. Players can modify objects from their initial settings by shooting them with the Left Mouse Button. Players can revert any modifications by shooting the object and clicking with the Right Mouse Button.

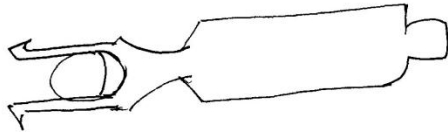
Visual Design

The game will take place in a 3D space colony. The overall visual aesthetic of the environment is neo-futuristic. Our goal is to immerse the player in this world. The style is a mixture of mechanical objects with man-made organic structures. It should look like a futuristic city that was once very populated and thus could accommodate a lot of citizens. It should be stylized and beautiful. It should look sterile and pristine. We'll have a mix of indoor and outdoor areas, and the lighting should be bright. We are going for basic blue tones for all of the basic background environment pieces. We want a sense of tranquility in the pristine environments. Since the main aesthetic of the gameplay is discovery and exploration, the player should be somewhat mesmerized by the environment. The goal is to give the player the incentive to keep exploring not only because they are engaged in the gameplay but because they want to see more of the environment.

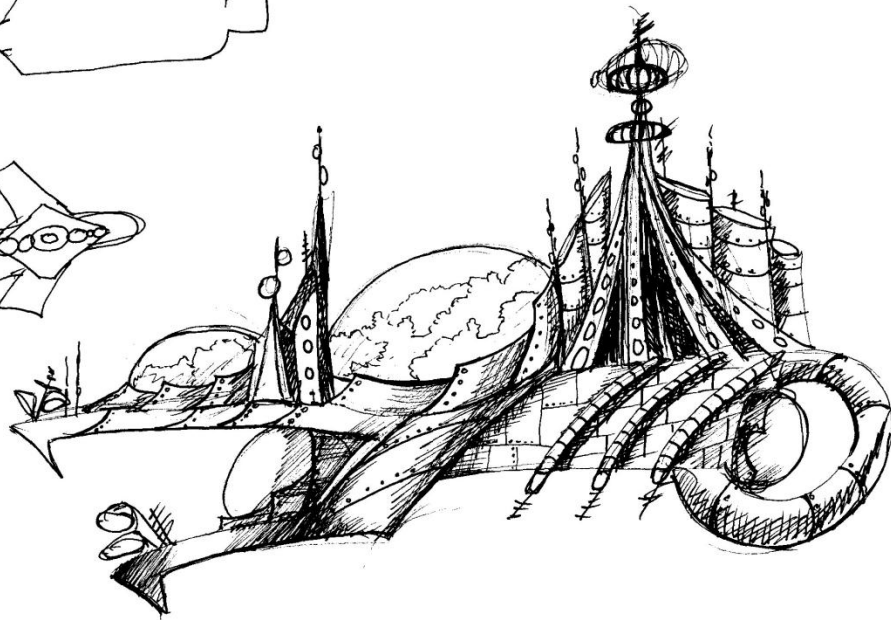
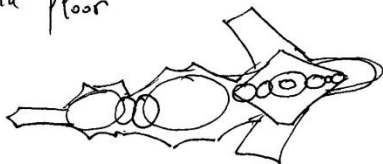


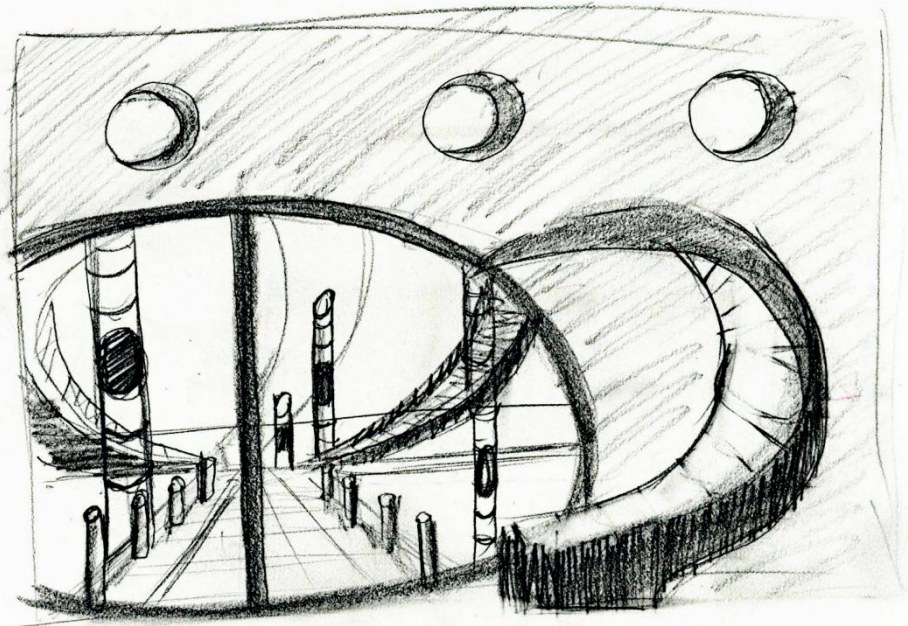
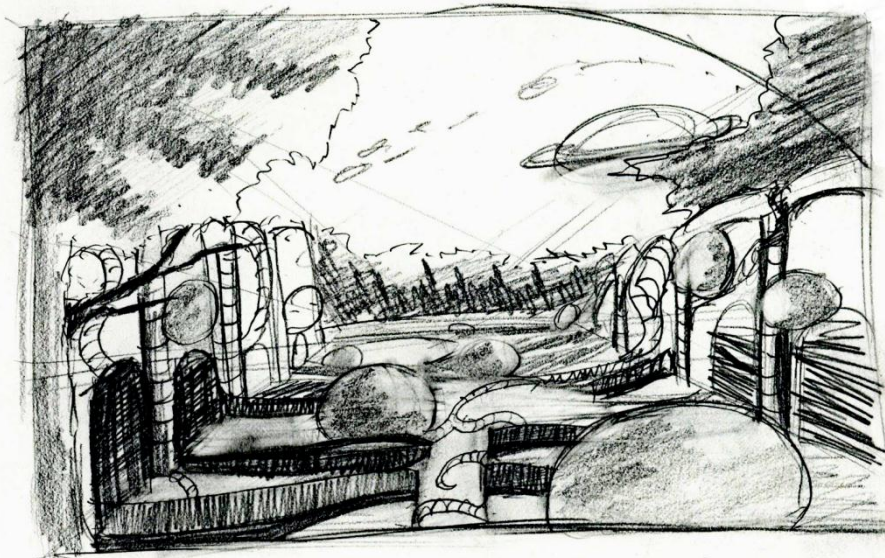
Top view

1st floor



2nd floor





Audio Design

Ambient Sound

The game takes place in a distinct environment. There should be ambient sound effects of electronics or mechanical equipment, but generally just background humming that you would not really notice. In the outdoor section there should be sounds of wind and nature, perhaps

even birds chirping in the more nature heavy areas. The ambient sounds should compliment the environment of the game.

Sound Effects

Other sound effects will involve player feedback and interactions. Shooting at power sources to gain power should make an energy shoot sound and then a subsequent powering up sound. When you manipulate objects, there should be appropriate sounds for the objects as well as the energy shoot sound. The blue objects should make a hydraulic sound of a panel extruding out of the wall or floor. The red objects should make a mechanical sound of the equipment rotating, but also the swooping sound of the platform rotating in the air. The yellow objects should sound as if they are powering down or powering up as they turn tangible or intangible. Jump pads should have a bouncing sound when the player interacts with it.

Music

There should be ambient music that is laid back and electronic sounding. The music should set a mood and always be playing, but should also blend subtly into the background as to not distract from the game. As the tension increases in the story and gameplay, the music should also become more eerie, less soothing, and more intense.

Voice Over

If possible we would like to have voice over in the game from a computer panel that gives you instructions, hints, or objectives in the game. This is more of a stretch goal and will depend on memory and time constraints.

Physics Design

Player Physics

The player character will need somewhat normal realistic physics, ie: forces applied to move left, right, backwards, and forwards, gravity to keep him grounded, friction, etc. The player should only be able to perform single jumps short distances unless on a jump pad. He will need collision with the objects in the environment as to not be able to walk through them other than when the yellow object is set to be tangible in which case he can walk through it. He should also not collide with lasers.

Inter-actable Objects Physics

Blue Object Physics

The objects that extrude should scale on a single face. They should have the capability of extruding from either the wall or the floor as well as reverse back into their original position. These objects should collide with the player and the other objects in the game. If an object is being extruding and collides with another object, it should no longer be able to extrude any further. If the player is standing on the object while

extruding it, the player should move with the object, essentially maintaining his position on the object while his translation updates with the object's. If the player is standing on the object and tries to collapse it back into the wall completely, the player should be dropped once it's completely collapsed. If the player extrudes the object from the floor while standing on it, he should move with it, but if he collides with something, the object should not be able to be extruded any further. Essentially the player should move with the object, but only up to the point that he would collide with something.

Red Object Physics

The rotatable objects should be capable of rotating on a single axis. The axis and angle should be properties that can be set on an object per object basis. They should smoothly rotate, and if the player is standing on them when they are rotated, he should begin to slide off if the angle exceeds 45 degrees. The objects should collide with other objects and the player.

Yellow Object Physics

The tangible objects should change from being collidable in their intangible state to being non-collidable in their tangible state.

Jump Pad Physics

The jump pads should apply a force on the player in order to allow him to jump higher. This should be automatic while the player is colliding with the object. The force and direction of the force should be properties on the jump pads that can be alter from object to object.

Lasers

Lasers should reflect off of red objects and project depending on the angle of the rotation. They should collide with all other objects other than the player.

Interface Flow

Flowchart

