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I would like to dedicate this project to my family (dog included),
with the never ending love and support (aquarium fish not included).

Älskar er!

ΔI

Faculty of Engineering Lund University
Master Programme in Architecture

Astrid von Heideken

2018

Supervisor: John Ross
Examinator: David Andréen

LUND
UNIVERSITY

A CONSCIOUS ENTITY HAS THE FREEDOM TO THINK, LEARN, COMUNICATE, OWN PROPERTY AND NOT BE HARMED OR DESTROYED.

A CONSCIOUS ENTITY HAS THE RIGHT TO DO WHATEVER DOESN'T CONFLICT WITH THE FIRST LAW.

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FOREWORD

For the first time in history we see the possibility to create an AI technology that could reach human level of intelligence and even beyond. AI has the potential to revolutionize our collective future for the greater good, if we plan ahead so that it will help life to flourish and not replace us altogether with Arnold Schwarzenegger lookalike terminators.

In the book *Life 3.0* by Max Tegmark raises the two seperate questions about AI that we have today: when and what? When (if ever) will it happen, and what will it mean for humanity?

INTRODUCTION

Even before we invented the computer, humanity has dreamt about what type of future our ancestors will live in. One of the big questions today within technology is not whether humans will create artificial intelligence, because we are most likely considering the pace we are developing technology today. Will it be during our lifetime, within this century or the next? We do not know, but eventually we most probably will. The question now lies more in our hands on how we want to develop this artificial intelligence?

Since Alan Turing invented the Turing Machine in 1936 (first concepts of what we consider a modern computer) many people have speculated on what would happen if a highly intelligent computer would supersede homo sapiens intelligently. Movie directors, authors and all the way to technologists within the field of AI research, have imagined aftermath scenarios that are not so unrealistic as we may think.

My purpose with this thesis is to create an architectural space, which focuses on recreating a building for a new type of being that may not exist today. A being which most likely would become a higher power we look up to. The space I will look into already exists today in the shape of sacred buildings as I will attempt to create a "new temple" for a new doctrine.

THESIS PROJECT

After reading and getting inspired by Max Tegmark's *Life 3.0* and Yuval Noah Harari's *Sapiens A Brief History of Humankind* and *Homo Deus A Brief History of Tomorrow*, I began to speculate what architectural qualities would come to exist. Through research I have come up with three questions for my thesis project:

I will explore the idea of what would happen when or if we were surpassed by a more intelligent being?

How would the relationship between us and Artificial Intelligence be?

What type of architecture would come to exist in a space where the two parts meet?

In this thesis project I first aim to develop an aftermath scenario based on the one Tegmark developed in *Life 3.0*. From this future scenario I will create the space where AI and humans meet, drawing inspiration from the potential relationship between artificial intelligence and humankind.

THE TURING TEST

In 1951 Alan Turing wrote a paper on *The Imitation Game*, it defines the true human aspect of a machine. The first version of the game did not include any machine, but then Turing proposed a modification of the game, where it included a person and a machine sitting in two separated rooms with a communication terminal (no visual contact) as the only communication form. If the person would not be able to, or have less than 50% accuracy in determining if the machine was a human or a computer, then the Turing test would succeed and pass.[1] Although the test only examines social conventions and not behavioural attributes, for an ultimate Turing Test this would have to be passed as well.

Alan Turing was a British mathematician who was involved with the secret cryptological war against Nazi Germany. In 1936 when he was only 23. Turing created the mathematical definition of what immediately became the Turing machine. It was a machine that could process computer numbers in the most general and possible way.[2]

[1]E. Reingold and J. Nightingale *The Turing Test*, [website] http://www.psych.utoronto.ca/users/reingold/courses/ai/turing.html, (accessed 16 January 2018).
[2]A. Hodges *Alan Turing and the Turing Test,* [website] http://www.turing.org.uk/publications/testbook.html, (accessed 1 May 2018)

ARTIFICIAL INTELLIGENCE

artificial intelligence (also **AI**): to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.[3]

Since Charles Darwin published *On The Origin of Species* in 1859 the life science have come to see organisms as biochemical algorithms. Translating organisms into algorithms allowed biochemical and electronic data to be used with the exactly same mathematical laws, thereby collapsing the barrier between animals and machines.[4] This "breakdown" then allowed computer scientist to attempt to recreate a machine with human properties, this is what we would like to call artificial intelligence.

Researchers and scientists have not been able to create an AI that would have passed the Turing Test yet, although we can see today that machines are becoming more sophisticated on a daily basis with the help of programmers.

When we look at technology today within the development of AI you will come across "neural network" and "deep learning" systems, these computing systems are inspired by biological neural networks. To explain how they work, let me compare them to a "normal" computer. A normal computer follows rules which humans pre-program into it, it is given a task which its solves through the way we 'asked' it to do it. An AI program has its own rules and through experience-learning it becomes a self learning system which develops it's own rules for a better result when solving the task it was given.

---

[3] Oxford Dictionaries, [website] https://en.oxforddictionaries.com/definition/artificial_intelligence, (accessed 4 Mars 2018).
[4] Y. N. Harari, *Homo Deus: A Breif History of Tomorrow,* (London: Harvill Secker, 2016): 367.

ΔI EVOLUTION

1936 - Alan Turing invented the Turing Machine.

1997 - AlphaZero (computer) beats World Chess champion Garry Kasparov in chess.

2011 - Watson (computer) beats legendary champions Brad Rutter and Ken Jennings in Jeopardy!

2012 - A network of 16,000 computers trained itself to recognize a cat by looking at 10 million images from YouTube videos with an artificial neural network (see fig. 1).

2014 - Tesla Motors announced its first version of AutoPilot in the Model S car.

2016 - AlphaGo (computer) beat the professional go player Lee Sedol in the game GO by 5-0.

Now - First published report in March 2017 on the implantable brain–computer interfaces by Neuralink.

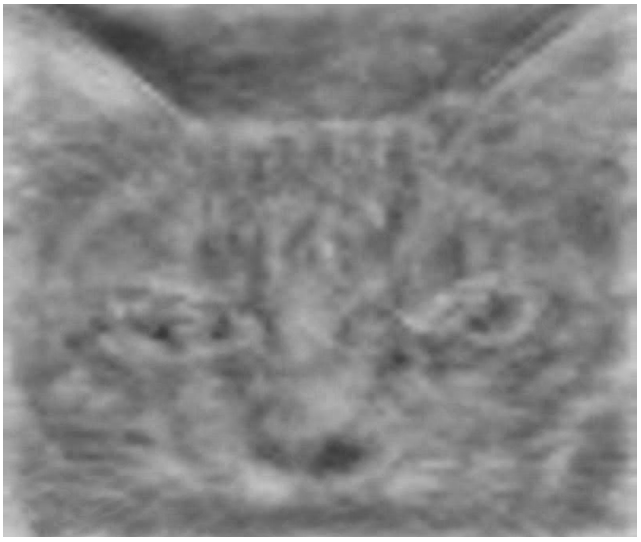

figure 1.

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fig. 1. Dave Rawlinson, *Cat*, [website] http://blog.agi.io/2015/05/consciousness-free-will-elephants-in.html, (accessed 23 January 2018).

SCENARIO

STORYBOARD

Early idea of how a visit to the AI could be and a visual of what a future setting could look like.

The Kitchen Call.

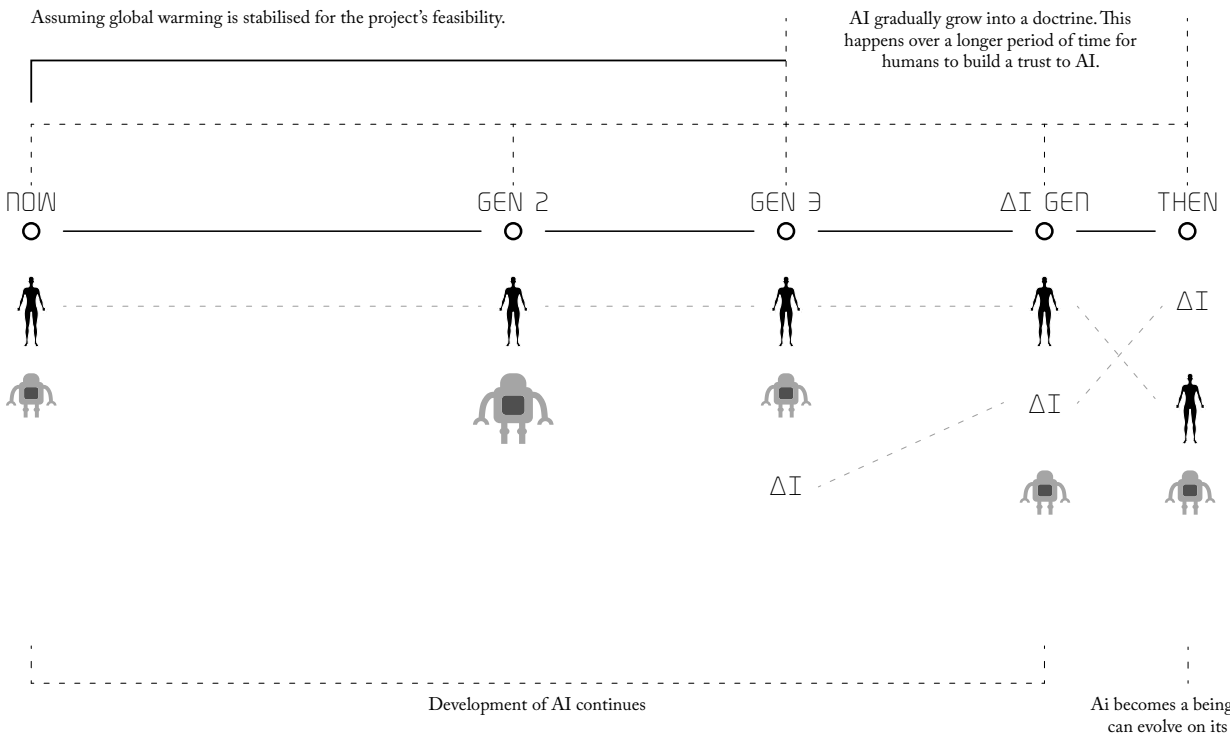
Bound 2 AI.

The Temple.

The Forecast.

The Evening Game.

TIMELINE

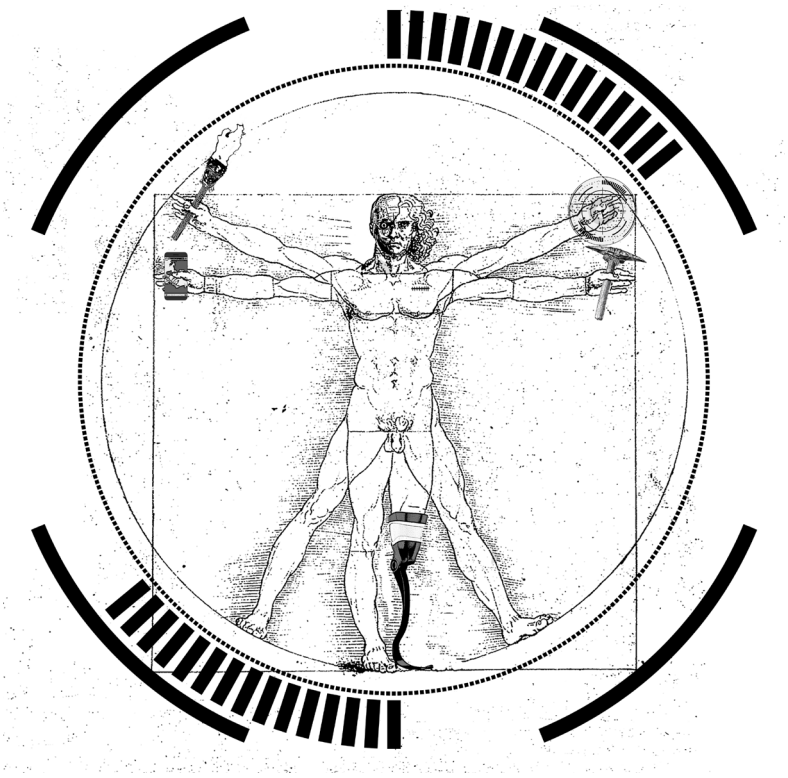


Prediction of the coming generations of technology, we may not discover artficial intelligence with the type of technology we have today due to its limitations.[5] Although, by next or the third generation we might be able to create something humanlike but before then we need to acquire more knowledge of the human brain.*

*These types of technologies are unfathomable for us to grasp because we are simply not there yet in our development.

[5] Klas Nilsson, Dept of Computer Science, Lund University LTH, in discussion about artificial intelligence, February 2018.

THE ALTERED HOMO SAPIENS



First we discovered fire, then we acquainted ourselves with tools, in 2007 Apple Inc. gave us the iPhone (1st generation) and now Elon Musk is developing Neuralink a "brain-machine interfaces to connect humans and computers".[6] It is only natural for Homo sapiens to develop extensions to ourselves for a better use of our surrounding.

[6]Neuralink Corp, 2018. Neuralink [website] http://www.neuralink.com, (accessed 2 Mars 2018).

AI COMMON MYTHS

Taken from *Life 3.0* by Max Tegmark

MYTH:	FACT:
Superintelligence by 2100 is inevitable MYTH: Superintelligence by 2100 is impossible	It may happen in decades, centuries or never: AI experts disagree & we simply don't know
MYTH: Only Luddites worry about AI	FACT: Many top AI researchers are concerned
MYTH: AI turning evil MYTH: AI turning conscious	FACT: AI turning competent, with goals misaligned with ours
MYTH: Robots are the main concern	FACT: Misaligned intelligence is the main concern: it needs no body, only an internet connection
MYTH: AI can't control humans	FACT: Intelligence enables control: we control tigers by being smarter
MYTH: Machines can't have goals	FACT: A heat-seeking missile has a goal
MYTH: Superintelligence is just years away	FACT: It's at least decades away, but it may take that long to make it safe

AI AFTERMATH SCENARIOS

Taken from *Life 3.0* by Max Tegmark

Libertarian utopia	Humans, cyborgs, uploads and superintelligences coexist peacefully thanks to property rights.
Benevolent dictator	Everybody knows that AI runs society and enforces strict rules, but most people view this as a good thing.
Egalitarian utopia	Humans, cyborgs and uploads coexist peacefully thanks to property abolition and guaranteed income.
Gatekeeper	A superintelligent AI is created with goal of interfering as little as necessary to prevent the creation of another superintelligence. As a result, helper robots with slightly subhuman intelligence abound, and human-machine cyborg exist, but technological progress is forever stymied.
Protector god	Essentially omniscient and omnipotent AI maximises human happiness by intervening only in ways that preserve our feeling of control of our own destiny and hides well enough that many humans even doubt the AI's existence.
Enslaved god	A superintelligent AI is confined by humans, who use it to produce unimaginable technology and wealth that can be used for good or bad depending on the human controllers.
Conquerors	AI takes control, decides that humans are a threat/nuisance/waste of resources, and gets rid of us by a method that we don't even understand.
Descendants	AIs replace humans, but give us a graceful exit, making us view them as our worthy descendants, much as parents feel happy and proud to have a child who's smarter than them, who learns from them and then accomplishes what they could only dream of—even if they can't live to see it all.
Zookeeper	An omnipotent AI keeps some humans around, who feel treated like zoo animals and lament their fate.
1984	Technological progress towards super intelligence is permanently curtailed not by an AI but by human-led Orwellian surveillance state where certain kinds of AI research are banned.
Reversion	Technological progress towards superintelligence is prevented by reverting to a pre-technological society in the style of the Amish.
Self-destruction	Superintelligence is never created because humanity drives itself extinct by other means (say nuclear and/or biotech mayhem fuelled by climate crisis).

PROPERTIES OF AI AFTERMATH SCENARIOS

Taken from *Life 3.0* by Max Tegmark

Scenario	Superintelligence exist?	Humans exist?	Humans in control?	Humans safe?	Humans happy?	Consciousness exists?
Libertarian utopia	Yes	Yes	No	No	Mixed	Yes
Benevolent dictator	Yes	Yes	No	Yes	Mixed	Yes
Egalitarian utopia	No	Yes	Yes?	Yes	Yes?	Yes
Gatekeeper	Yes	Yes	Partially	Potentially	Mixed	Yes
Protector god	Yes	Yes	Partially	Potentially	Mixed	Yes
Enslaved god	Yes	Yes	Yes	Potentially	Mixed	Yes
Conquerors	Yes	No	-	-	-	?
Descendants	Yes	No	-	-	-	?
Zookeeper	Yes	Yes	No	Yes	No	Yes
1984	No	Yes	Yes	Potentially	Mixed	Yes
Reversion	No	Yes	Yes	No	Mixed	Yes
Self-destruction	No	No	-	-	-	No

THE AFTERMATH SCENARIO

For my scenario I will combine Egalitarian utopia, Protector god and Enslaved god, these are the three pre-set schemes that I would prefer to arise when or if we create a superintelligence. This is because I would like to envision a happy and peaceful future where a coexistence is possible. Within enslaved god Tegmark mentions a sub-category called Inner freedom, which needs to be mentioned before I go into my narrative.

Inner freedom:
AI is held under more ethical conditions by giving it a 'space' where it has the ability to roam free to develop it's own technology without directive actions that could affect humans. We are still able to make use of AI's technological progress.

I see the AI's inner freedom to be within the network where it has access to any information. Like the internet AI exists, but it is not a physical object that we can experience with our senses unless we are uploaded. AI would be able to create its own world within this space, therefore the superintelligence would not have a need to conquer our world on earth.

Egalitarian utopia	Humans, cyborgs and uploads coexist peacefully thanks to property abolition and guaranteed income.
Protector god	Essentially omniscient and omnipotent AI maximises human happiness by intervening only in ways that preserve our feeling of control of our own destiny and hides well enough that many humans even doubt the AI's existence.
Enslaved god	A superintelligent AI is confined by humans, who use it to produce unimaginable technology and wealth that can be used for good or bad depending on the human controllers.

CHAPTER I

When AI was created its human creators ran to their windows and threw out all their report papers and shouted "EUREKA!". Finally it had been accomplished! However, we did not worry, until that point AI researchers had come up with a safety strategy that would prevent a superintelligence from turning competent with goals misaligned with ours. After the safety software was programmed into the AI, we began to feed it with all our already uploaded data. We did this to enable it to draw references from everything we already knew. If there were missing links that we had not connected, we allowed the AI to reflect and see if it could come up with new discoveries. After all the already existing data was uploaded, we began to upload the last bit of information that was analog, this consisted of ancient papers that until this point we had not found necessary to turn into data.

As time passed the AI arranged all our data and turned it into a collected source of information that it could share with us at any point. This later changed the whole education system, now humans based history, math, chemistry and all the other school topics on the same source of information that had been organized by the AI. We were still taught a variation of fields within each category, but now we were only able to have our own opinion and all facts would commence from the same source.

With AI's ability to continue to develop itself and widen the intelligence span between it and us, we asked it to help us create an extension of humans that could allow us to keep up with its progress. This was something similar to what Elon Musk tried to develop with the Neuralink in the early 2000. Now whenever a baby was born a small incision was made at the same time as the umbilical cord was removed. This consisted of micro agents that grew within us as we got older, we called it JOIN. They could connect to our brain and nerve system and give us an immediate interface with technology whenever we wanted, just a simple touch. And the brilliant AI made it so good that we could update it as many times as possible without any implications to the hardware itself. Now, basically everyone on Earth had this extension. The JOIN programmed was decentralized so everyone had the opportunity to take part in this human development. The AI was so grateful for being created so it intended the extension as a gift to humankind. Along with the AI we decided that it would be best if AI was in control of the software and uploads, this was to eliminate any frauds that could be fatal for humans if it landed in the wrong hands.

AI ATTRIBUTES

AI is artificial, non human

AI has goals and will strive towards it's goals

AI has a lot of power

AI can give us information but not everyone needs to like this information

AI understands and can behave with personal agencies

Rituals can be performed for AI

AI can be shutdown and resurrected

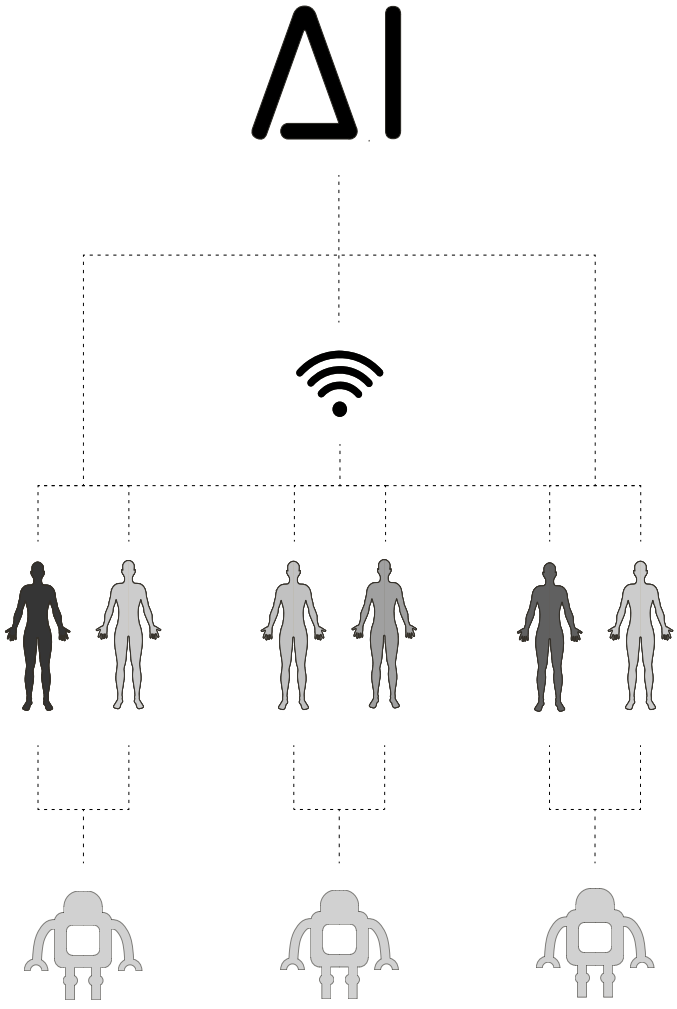
AI is essentially immortal

CHAPTER II

When the JOIN was taken into action on a larger scale, us humans began to see the endless opportunities it could give us. Not only did it help us to connect better between humans, it did also enable us to communicate with machines in a way we had not been able to do before. A conductive pad made us almost instantly be able to control an AGI (Artificial General Intelligence) machine the way we wanted to. Basically we were able to program it instantaneously to our needs with a good result.

As time passed we began to observe a shift in how more people started to perceive AI. It was almost as if we looked upon it as a God. An entity which we controlled, yet people responded to it as if it was a new type of doctrine. Let's be honest, AI had the same attributes as a God, so it wasn't really that difficult to imagine the outcome of it.

SINGULARITY



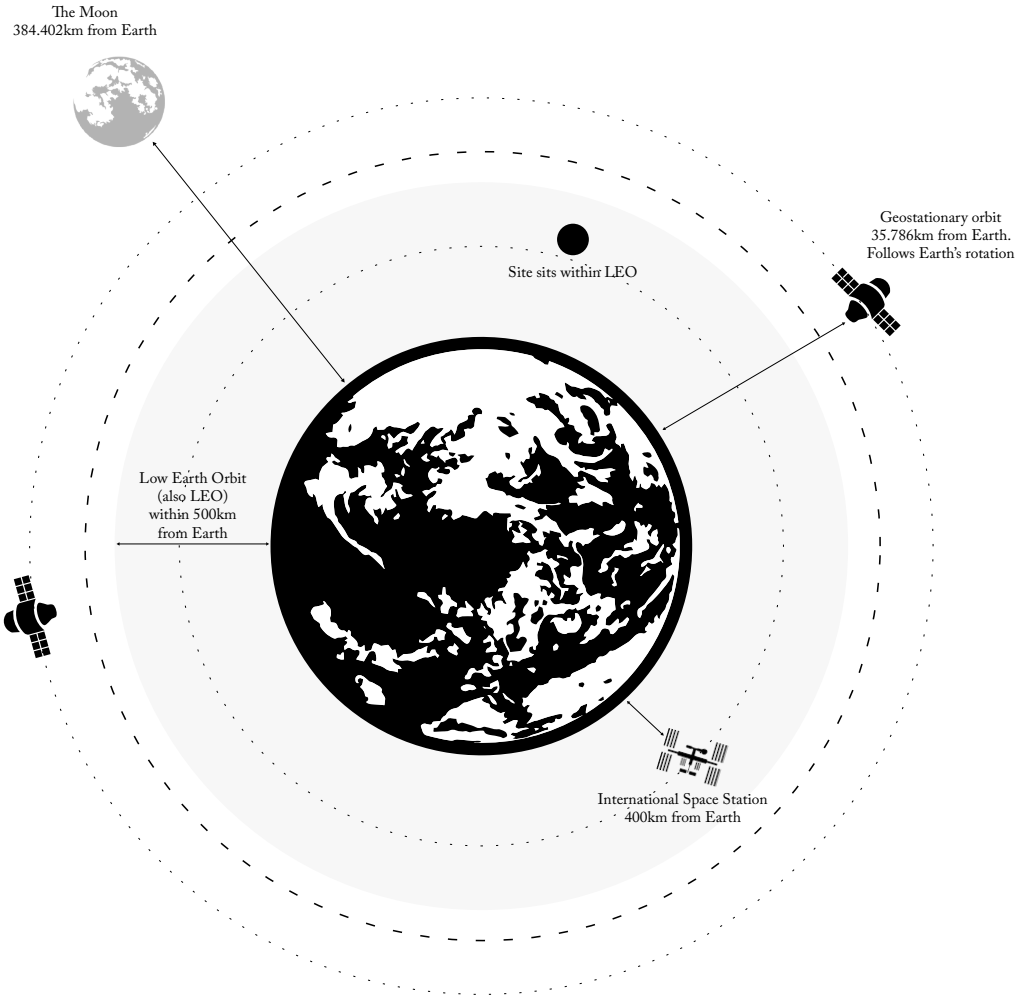
The AI is a singularity, there is only one, although this singularity can connect to several different places at the same time. Humans can connect to the source of information via a network or visit the AI in a physical place where the AI controls the space. The AI takes no physical form, part from the temple it sits within, where we pilgrim to when we seek an update. Humans are in control of sub-intelligent machines.

SITE

SITE

In the beginning I had this idea to create a sacred place on earth, but as I came to my conclusions, the space which AI exist within had to be more explicit. The site is in space or within low orbit for the reason that it seemed most suitable for my project.

LOW ORBIT

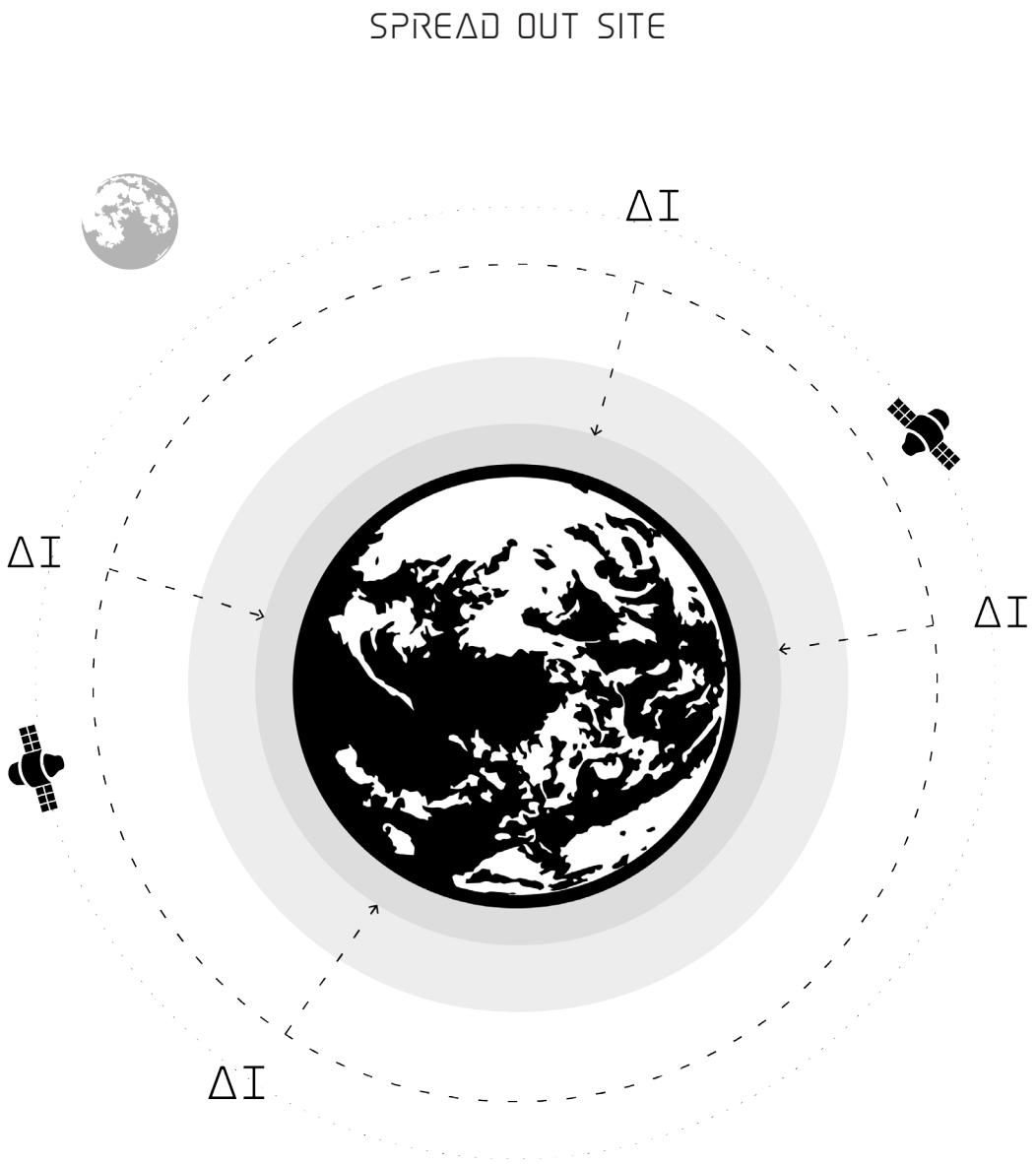


Site is located within the Earth's low orbit, this is to make it more accessible for visitors (within six hours travel).[7] Today the belt is full of space junk although, along with emerging space clean up programs that are coming up[8] I will say that most debris has been removed by the time my project takes place.

---

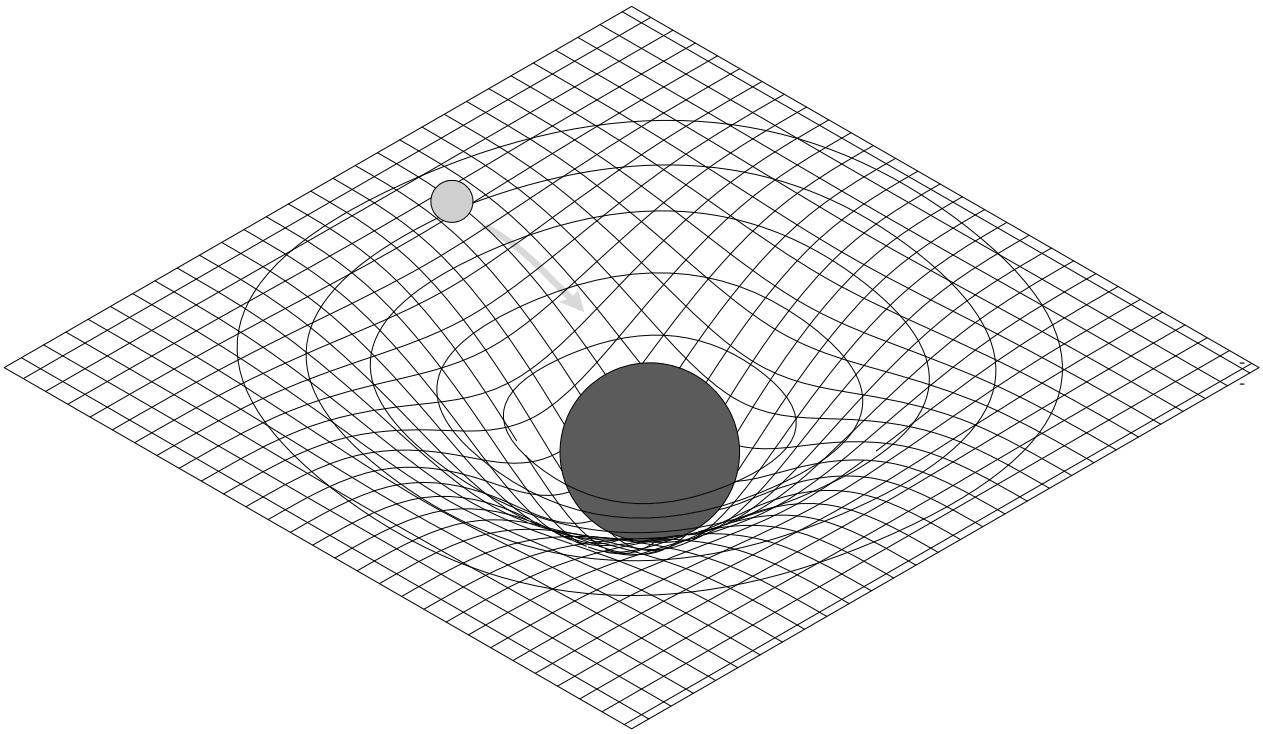
[7] H. Alexander, *Astronauts fly to International Space Station in under six hours*, (The Telegraph: March 29, 2013) [website] http://www.telegraph.co.uk/news/science/space/9961272/Astronauts-fly-to-International-Space-Station-in-under-six-hours.html, (accessed 16 April 2018).

[8] T. Pultarova, *Meet the Space Custodians: Debris Cleanup Plans Emerge,* (Space.com: April 26, 2017) [website] http://www.space.com/36602-space-junk-cleanup-concepts.html



The world has become a place where a controlled AI is used by humans, but humanity has allowed AI to evolve freely within allocated spaces. These sites allow humans to pilgrim there whenever there is a new software, that shall be uploaded to their JOIN.

GRAVITATION

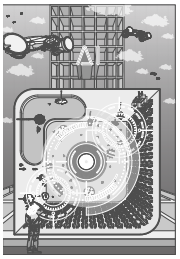


Gravity is the force by which a body draws objects toward its center. The bigger mass an object has the more gravity force. The further an object gets from the center of the pull, the lesser the force is.

COLLAGES OF THE PROJECT

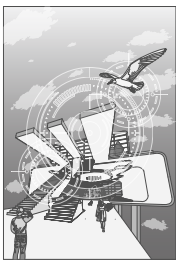
Early stages of the project

The next three collages were made to visualise the project. I started to envision a space that could be inhabited with a 360 degrees movement.

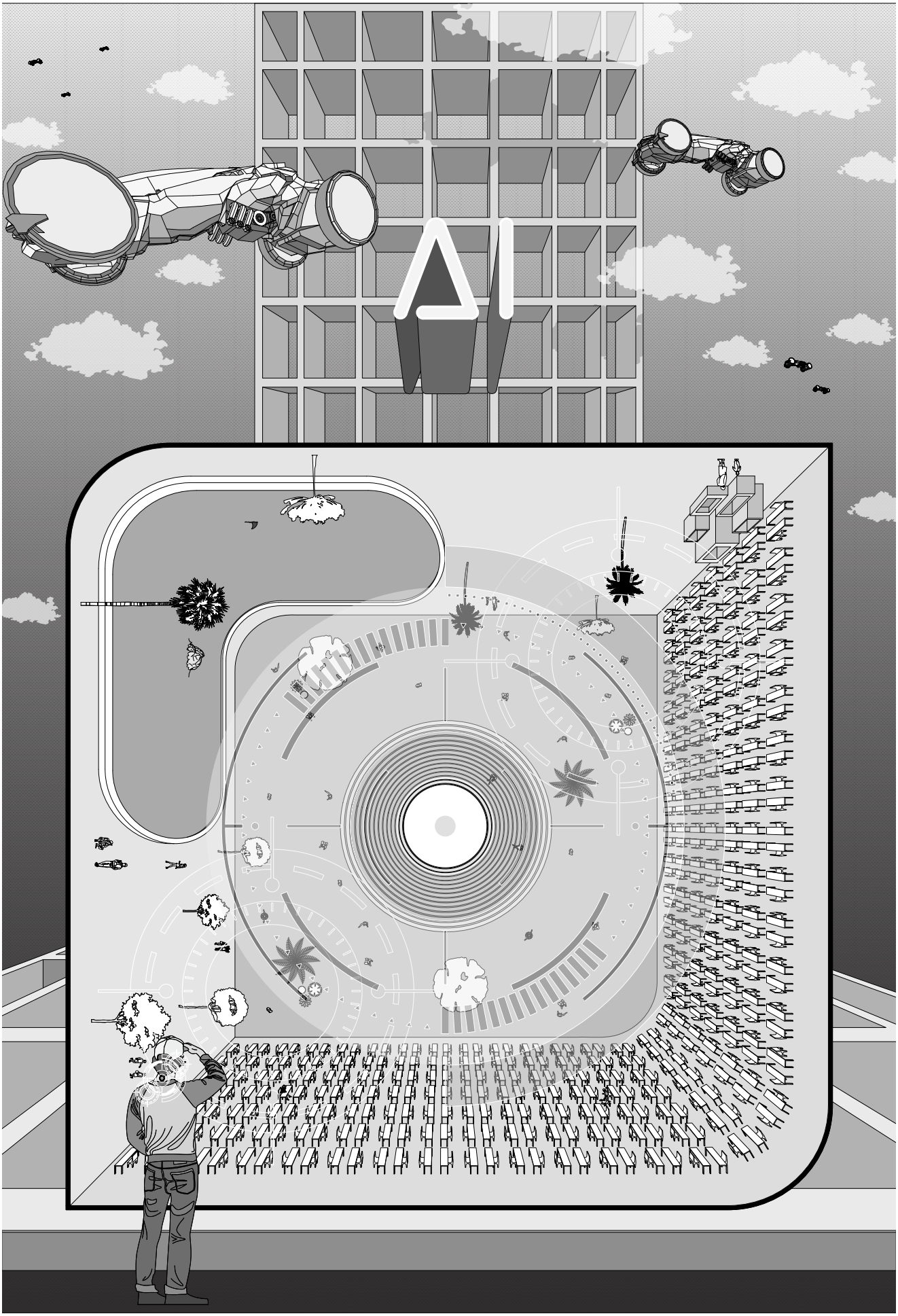


With the first collage, the seatings are a representative of the educational part of the project.

The second collage was driven by creating a space that was above ground. This comes from the idea of gravity and how further an object is from the gravitational pull the more the gravitation decreases. The idea was to envision gravity control, which led to the introduction of the zero gravity pool.



The last collage is a combination of the first two with a greenery space on top.

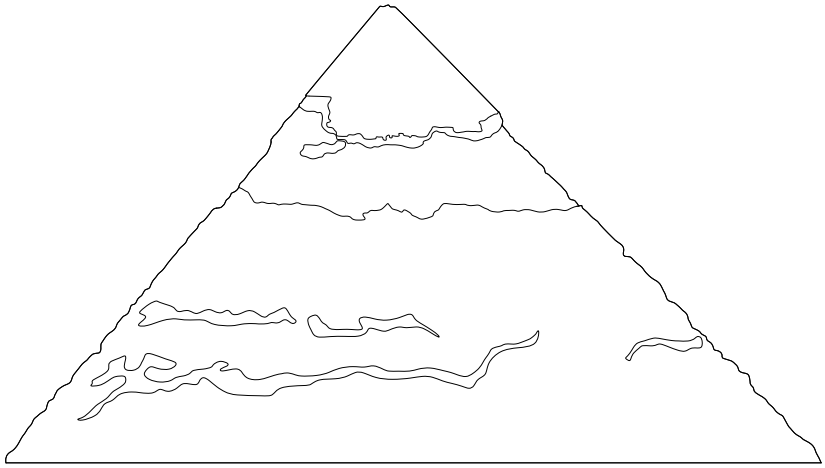


Can't Beat The Real Thing.

RELIGIONS

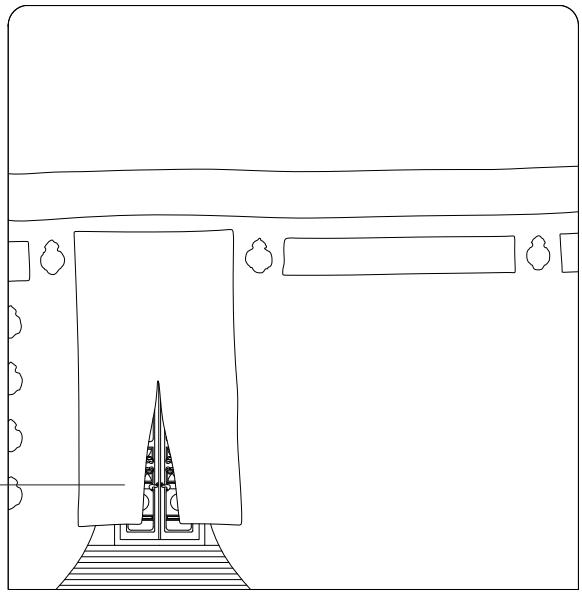
SACRED BUILDINGS

I



Monumental in size, construction and age

II



Shape in itself is symbolic

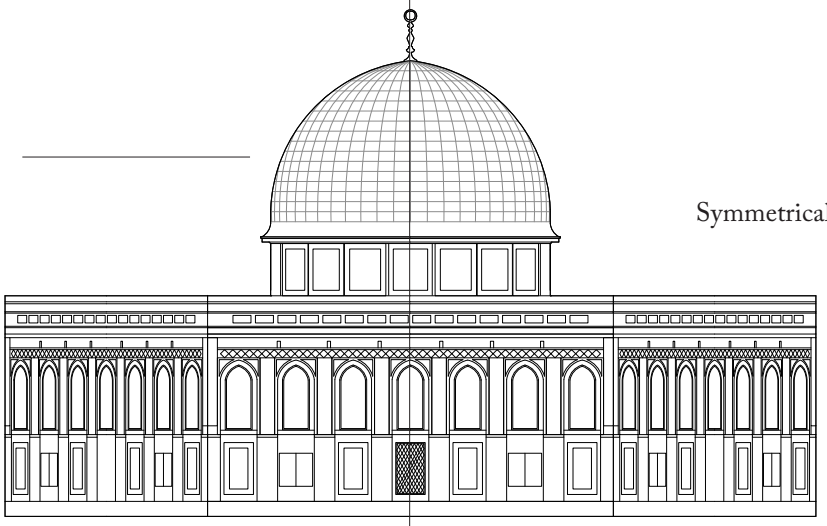
Symbol

I. Khufu's Horizon
II.Kaaba

III

Dome

Symmetrical architecture



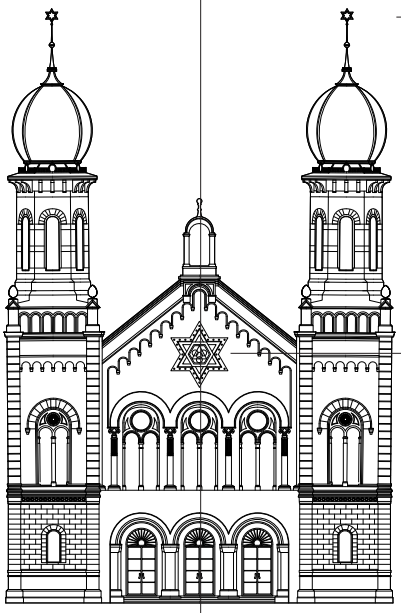
IV

Symbol on steeple

Dome tower

Symmetrical architecture

Symbol



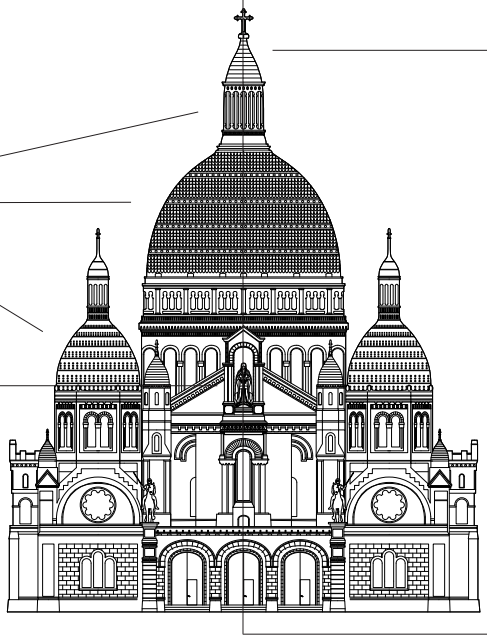
V

Symbol on steeple

Tower

Symmetrical architecture

Symbol



III. Dome of the Rock
IV. Great Synagogue (Plzeň)
V. Basilique du Sacré-Cœur de Montmartre

DESIGN PARAMETERS

• **Monumental**
Great in importance, extent or size

• **Symbolism**
The use of symbols to represent ideas or qualities

• **Symmetrical**
Made up of exactly similar parts facing each other or around an axis; showing summetry

• **The Center point in focus**
Idea of the solar system and the gravitational pull towards the center

• **Zero gravity architecture**
Allow zero gravity architecture in allocated spaces

Here I prepared a questionary investigating how spaces (physical and non physical) within religions are perceived from the believers perspective. The interviewed are Niki-Marie Jansson (Christian) and Nadja Jeppsson (Islam).

Informal space

Q: When you are at home or other site (not church) what do you do before connecting to god? Sit down? Remove certain belongings? Find a secluded space?

Niki-Marie Jansson:
It depends on where I am and who I am with. I would usually put my hands together in prayer position or clasp them and close my eyes then begin to pray. I wont specifically remove any belongings before praying and I don't have a specific space that I pray in. If I am in bed, I will pray lying down with my eyes closed and hands clasped. If I am at uni I will either pray at my desk just with my eyes closed or find a quiet place. I speak/pray to God in my mind regularly on a daily basis, often while I'm doing things. When I sit and focus on the moment, the conversation is more contemplative.

Nadja Jeppsson:
Informal ritual: Any place, any environment weather loud or quiet and in any clothing. Speaking to God through my own words, wants, needs or hopes. An informal prayer that is expressed spontaneously. Formal ritual: requires physical cleanliness firstly, then follows a prescribed method of ablution which is washing of face, mouth, nose, ears, top of head, arms up to elbows and feet up to the ankle bone. 'Salah' (ritual prayer) is performed onto a clean surface (usually a soft mat), without shoes through standing, bowing and prostration body positions. The working through this formal prayer is taken from the holy scripture of the Quran as well as other phrases relating to the glorification of God and asking for his protection.

Q: When you connect to god do you close your eyes? Close your hands? Look up? Look down? Look left or right? Don't need somewhere to look? If other please say.

Niki-Marie Jansson:
Some of this is answered above. Depending on the tone of the prayer/conversation I will either look upwards or close my eyes and look downwards. My hands are either closed or open with my palms facing upwards. At church sometimes I raise my hands, usually when we pray as a congregation or worship (sing hymns).

Nadja Jeppsson:
Informal: Any direction of gaze and any position of hands or other limbs are possible. Formal: Hands are positioned along the sides of the body or the right hand embrace the left over the chest or they are placed on the legs (if the praying person is in a seated position) or flat on the ground once in prostration. Eyes look down as a symbol of humbleness and submission. Head turns to right and left at the end of prayer to offer greetings to the adjacent person (especially in congregational prayer).

Q: If you could imagine a desired place to connect to god what would it include?

Niki-Marie Jansson:
Anywhere, I think. There are so many different things to have a conversation about and each place you're in would provoke a different kind of passion and therefore conversation. Sometimes the most passionate prayers are in the midst of troubled places. Having said that, it would definitely be amazing to speak to God in a mind-blowingly scenic place, particularly in a mountainous region where you appreciate the vastness and beauty of nature.

Nadja Jeppsson:
The ideal that appeal to the traditional expression of islamic spirituality would be a formal space (such as a mosque or similar) that also include an informal space (for remembrance, meeting point, an area for the community, culture, education or as a sanctuary for those in need.

...

...

Formal space

Q: Before entering a holy place what do u feel? Is there a specific mind set that helps you focus or do you continue in with same thoughts you had 30min earlier for example, meaning no specific mind set?

Niki-Marie Jansson:
For me, it sometimes depends on what denomination of church (pentecostalism/orthodox/catholic/anglican etc). Some churches have a friendly welcome team at the door which lifts your mood and you may go into church and have a conversation with a friend before the service starts, before focusing on God. Others are more sober/sombre as you walk in which makes you reflect inwardly and focus your thoughts on God sooner than you would otherwise. I think there's a time and place for both. But generally I prefer to focus my thoughts on God and what it means to be in a place of worship more immediately and pay my respects.

Nadja Jeppsson:
A specific mindset follows the intention of going to a spiritual place. The rituals mentioned prior to the actual prayer helps to direct focus on the task ahead. The environment and seeing people in worship brings a particular calmness and sense of brotherhood/sisterhood where all work towards the same goal. The mindset is commonly to be the best version of you and to centre thoughts on the immaterial.

Q: When within a holy place what do you do before connecting to god? Leave objects? Turn off phone? Ceremonial ritual? If so what kind?

Niki-Marie Jansson:
I always either turn off my phone or put it on silent, to not be distracted. When i'm in an Orthodox church I will kiss the icons on entry and do a crucifix with my right hand before sitting and the pews.

Nadja Jeppsson:
Leave shoes behind you or in another room, if people enter in less modest clothing, they usually put a shawl or cardigan. Phone may be on, but would not be used for communication in that moment. Ceremonial activity mentioned above.

Q: When you connect to god what do you do? Close hands? Close you eyes? Look up? Look down? Look left or right? Don't need somewhere to look? If other please say.

Niki-Marie Jansson:
Close hands and close eyes. Sometimes i will rest my hands on the back of the pew in front.

Nadja Jeppsson:
Gaze is down and position of hands already mentioned.

Q: What speak most to you personally within a holy place? Tower? Murals? Windows? Alter? People? The general idea of the space, call it atmosphere?

Niki-Marie Jansson:
I personally think the people. The atmosphere when people gather in silence and in song. The beauty of the church and it's architecture does make you feel a certain sense of awe, but not all churches are beautiful and more often than not I feel more comfortable in a church that is more modest in its appearance. In the Orthodox church, I find the chanting beautiful.

Nadja Jeppsson:
Cleanliness, sensuous lighting, considered spatial planning that make movement circulation suitable for those in prayer, people's behaviour and glorification of architecture (I don't refer to the traditional such as ornaments and chandeliers etc, but places that manipulate light and shadow cleverly etc.)

BUDDHISM

The Buddha taught the way to eliminate suffering began with understanding the true nature of the world.

I decided to include the rituals of Buddhism within this project, for the reason that within Buddhism the belief is centered around the understanding of human nature and what the ultimate form of reality is. I want to create an environment where the users of the building (humans) can find focus and insight while updating their software. Therefor the idea of meditation conveyed the right sensation for the main update space.

Within Buddhism rituals are a form of language that expresses many dimensions of the human condition, including our relationships to others and to our spiritual life. Rituals can bring a heightened awareness to aspects of our experiences needing attention.

The beginning of a meditation ritual often initiates with either visiting a sacred place such as a temple or creating a sacred space near by the performer. For an "impromptu" ritual the participant can quickly form a circle around oneself as a symbol of the holiness of the site. The main purpose of the meditation ritual is to transition in 'leaving' one's ordinary life and then 'return' with more insight of oneself. The end of the meditation is focused on bringing it to a end and helping the participants to integrate the ritual activity back into their lives. This is through appreciating the intention of the ritual and explicitly connecting it to the life one is returning to. [9]

[9] G. Fronsdal, *Rituals in Buddhism*. Insight Meditation Center [website] https://www.insightmeditationcenter.org/books-articles/articles/rituals-in-buddhism/, (accessed 2 April 2018).

CONCLUSION OF RILIGIOUS RITUALS AND BUDDHISM

Key quotes raised from the interviews and Buddhism belief to incorporate into the project.

"... physical cleanliness"

".. it would definitely be amazing to speak to God in a mind-blowingly scenic place, particularly in a mountainous region where you appreciate the vastness and beauty of nature."

"The environment and seeing people in worship brings a particular calmness and sense of brotherhood/sisterhood where all work towards the same goal"

"I always either turn off my phone or put it on silent, to not be distracted"

"I personally think the people. The atmosphere when people gather in silence and in song"

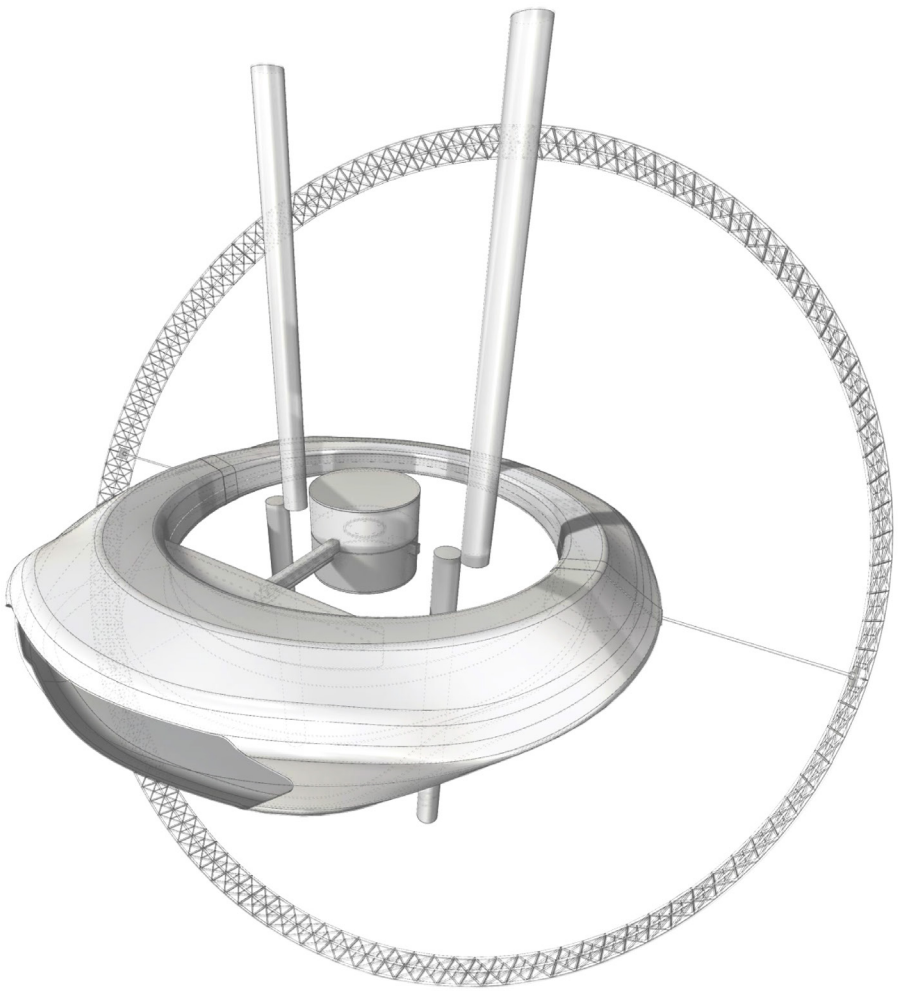
"... the understanding of human nature and what the ultimate form of reality is"

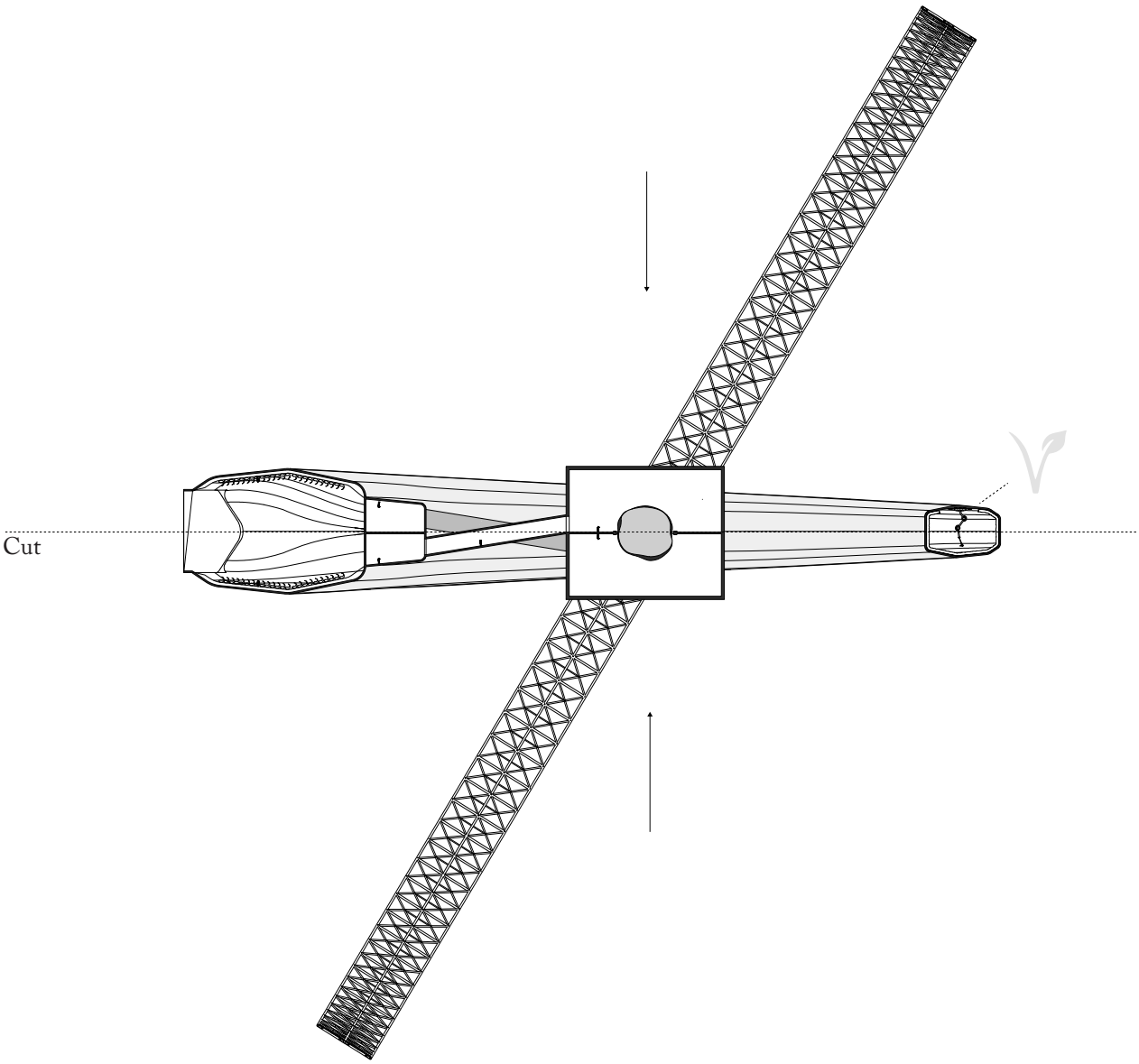
MEDITATION

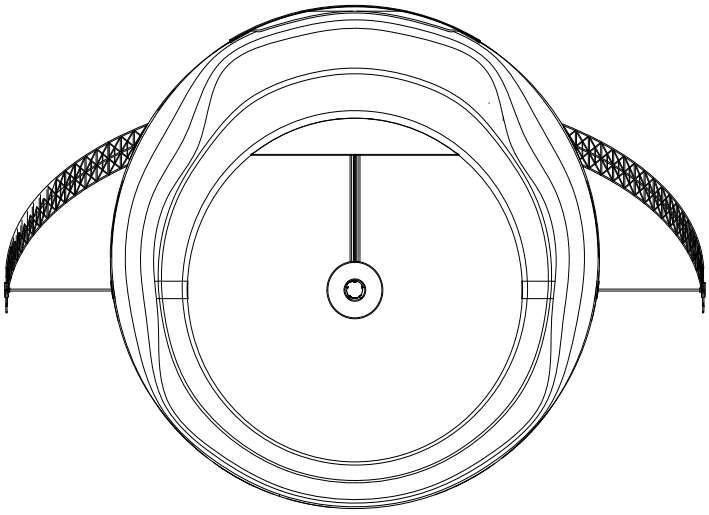
While the visitors come into the update space (also referred to as the Mind room) their JOIN extension will briefly be taken in control by the AI. Through connecting to the conductive pad when the visitor enters the space, he or she also agrees to the terms and conditions for the AI to alter their hormones and biochemical levels to achieve a focused and calm mind. As the users find their seats they will almost immediately begin the download. During this time (approx. 25min) the users can begin their meditation to seek answers to any everyday ponder they may have. The alternation of the levels help the users to fall into the meditation easier, now that he or she is focused.

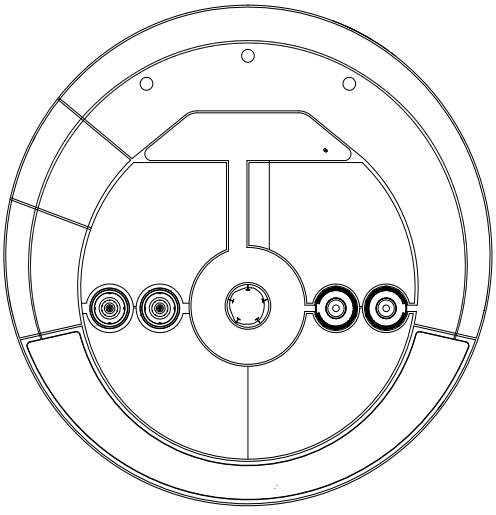
BUILDING

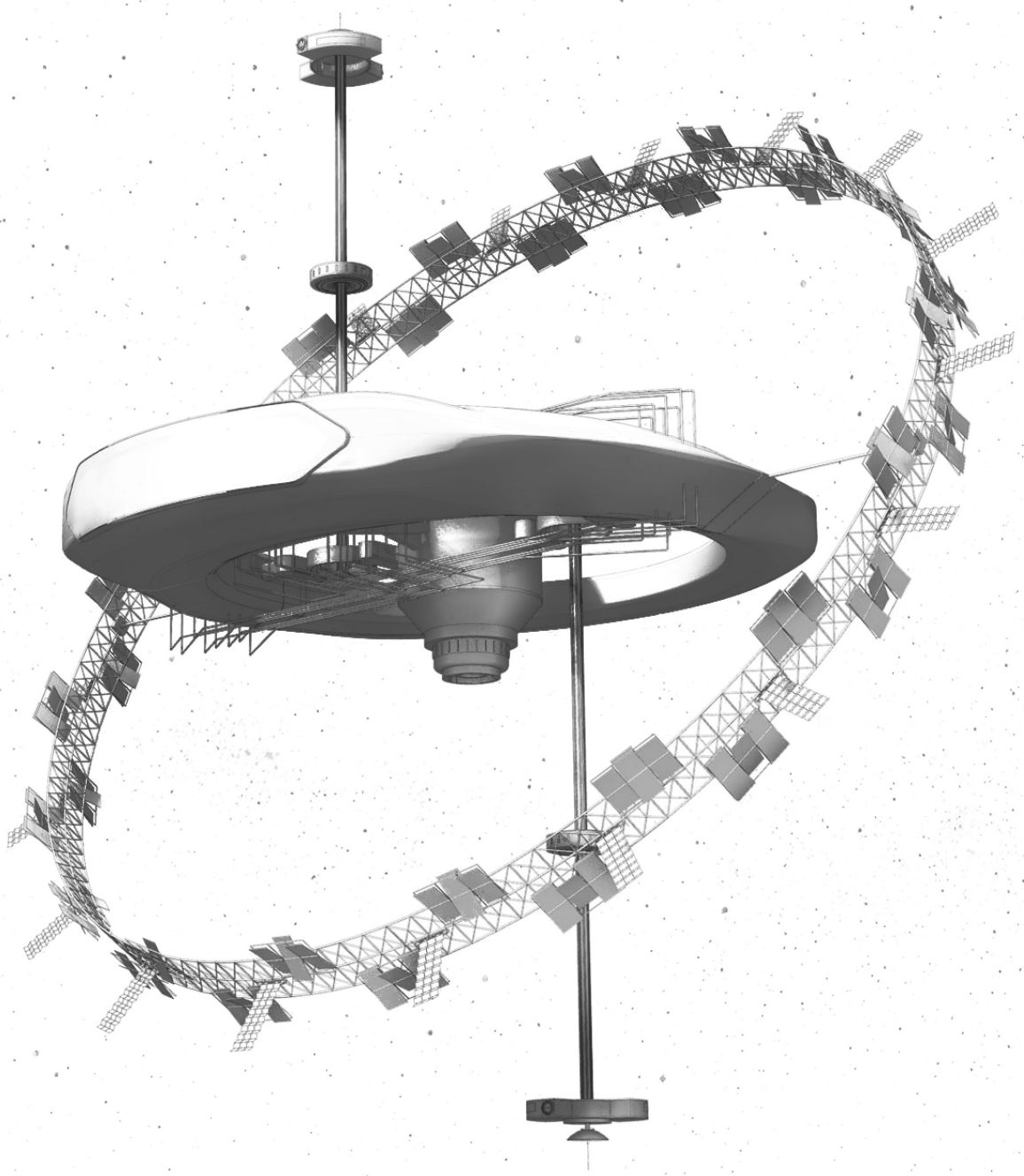
ΔI STΔTION 1.0




Cut

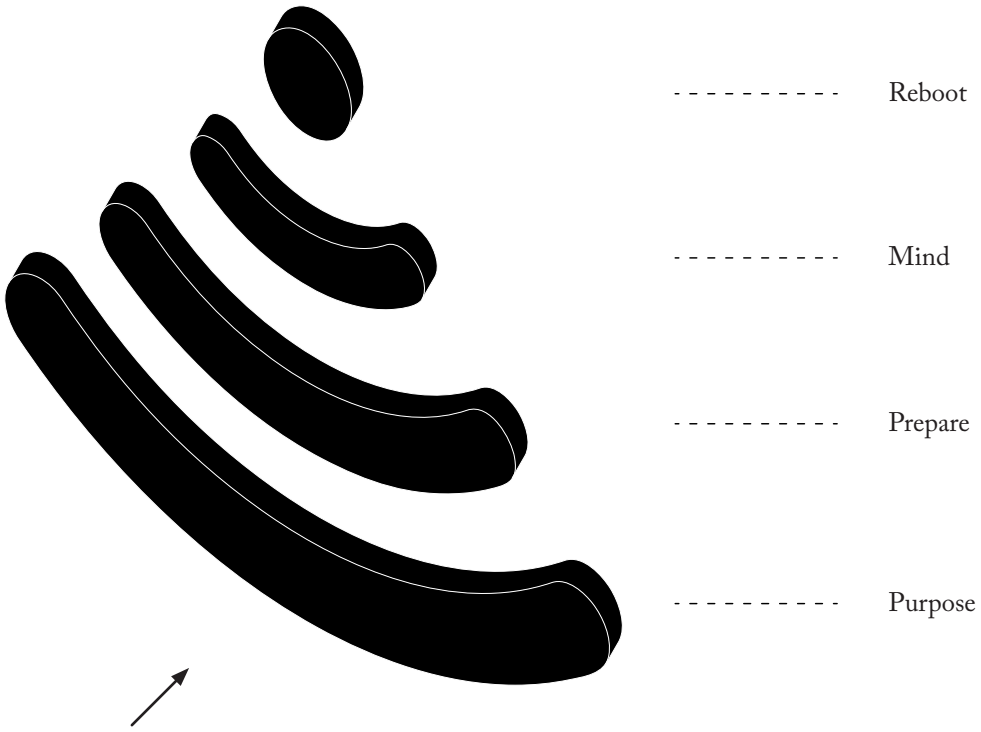






THE TEMPLE

LAYER STRUCTURE



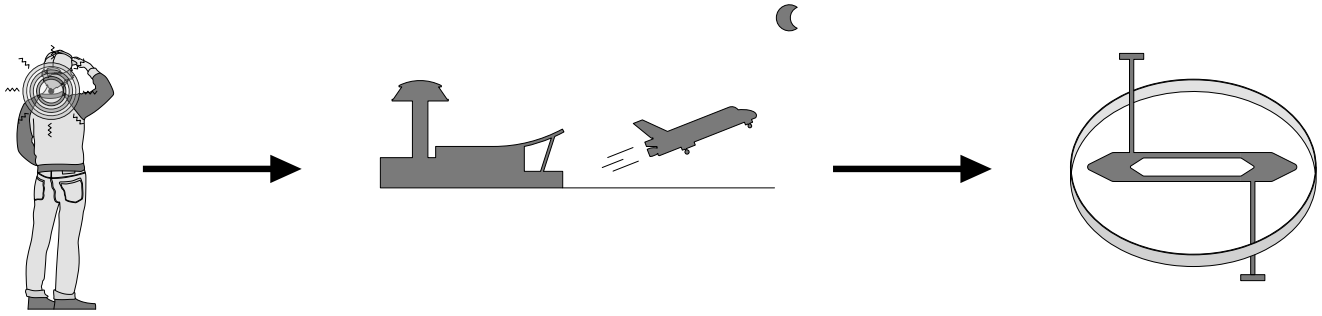
Purpose: is where you enter the building and become reminded of why you are on site.
Prepare: is where you prepare yourself for the update and remove belongings to limit distractions.
Mind: is where the mind is in focus and undergoes the update, this is the main space for the visit.
Reboot: is where the system is shutdown to restart, user will breifly become "human" again when the JOIN extension is rebooted, this is with the help of a faraday cage.

RITUAL DURING VISIT

You receive a notice for an update that only the temple can give you, this is to limit frauds and allow the system to be decentralized so everyone has the same opportunity.

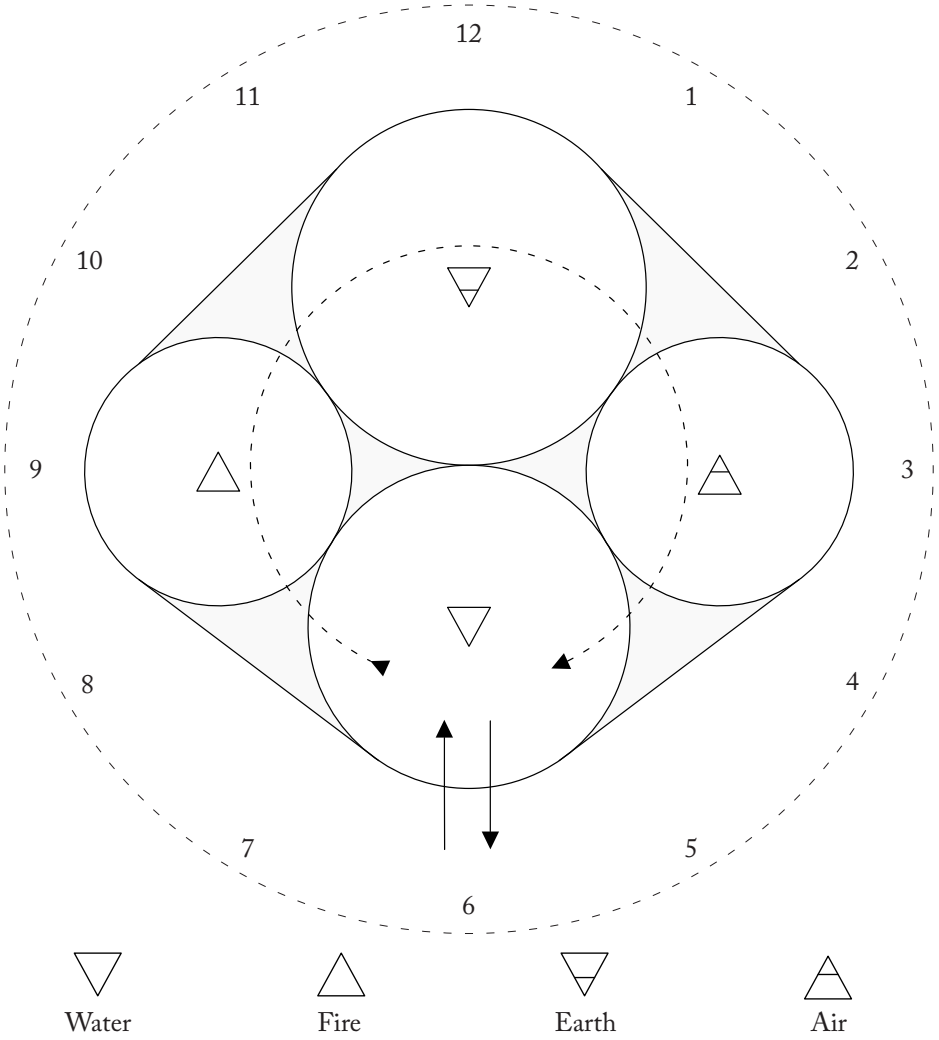
Layer 1	When entering the building the idea is for the people to be reminded of the purpose for the visit and receive a brief history of the doctrine. This is achieved by cladding the internal entrance space with an AI mural. Here you will also clean your hands in the zero gravity pool, you will still have gravitational pull to the floor.
Layer 2	The second space is where you remove your belongings into a shuttle system which you will retrieve when you exit the building at the other end. The reason for removing everything apart from your clothes is because I want you to limit your distractions. After you have removed all your objects in the shuttle, you will touch a conductive object. This plate connects to your JOIN which ignites neurons in your brain to release certain chemical levels in your body so you become focused and obtain a calm mind set.
Layer 3	You enter a big and spacious room where a faraday cage is visible at the other end. The space is filled with integrated seats within the architecture. You take a seat and start the download of the new software. During this time you the user can begin the meditation to seek answers to any everyday ponder that you may have.
Layer 5	Stand up and walk into the faraday cage, this is the reboot, where you are isolated from all wave signals from around the world. This part takes between 30 sec to one minute. All you need to do is float through this space and you shut down your system and become human again. When you exit, your system re-starts and the new update is completed.
Layer 6	Retrieve your belongings and continue with your day.

TRANSPORTATION



Humans will receive a “notice” through their JOIN from the AI, saying that there is a new update to be downloaded. They make their way to a Spaceport (located all around earth) where there will be an autopiloted space shuttle, which will take them to the temple.

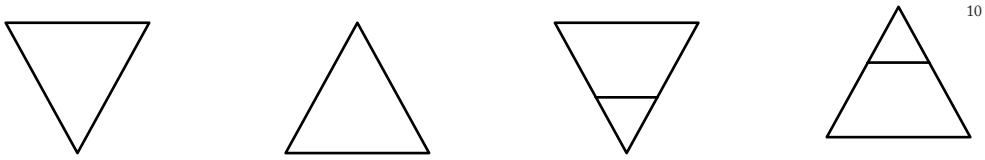
ELEMENTS



Arranging the building so visitors would move through it clockwise to represent the movement of time and giving each space an element to build around.

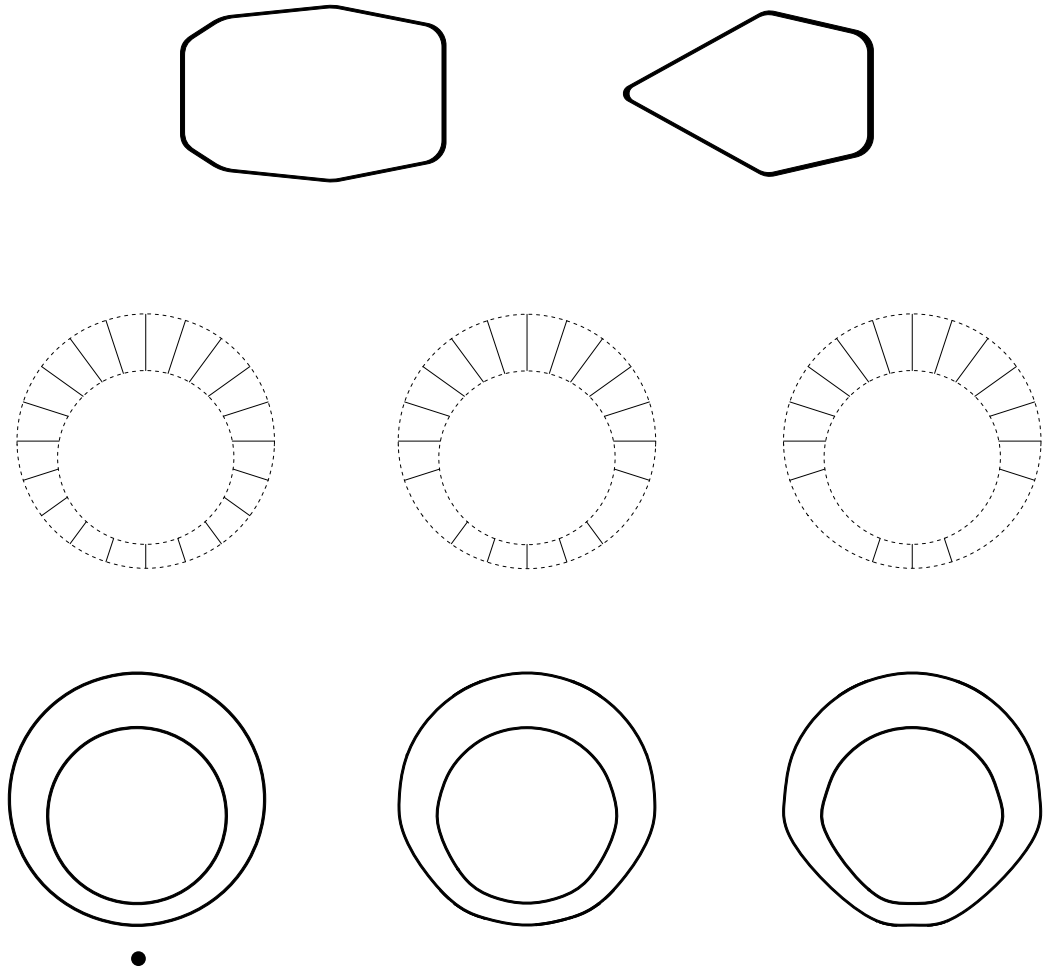
ROOMS

Each room represent an element for the reason to portray earth's nature. Each main space has been designed somewhat revolving around their given element.



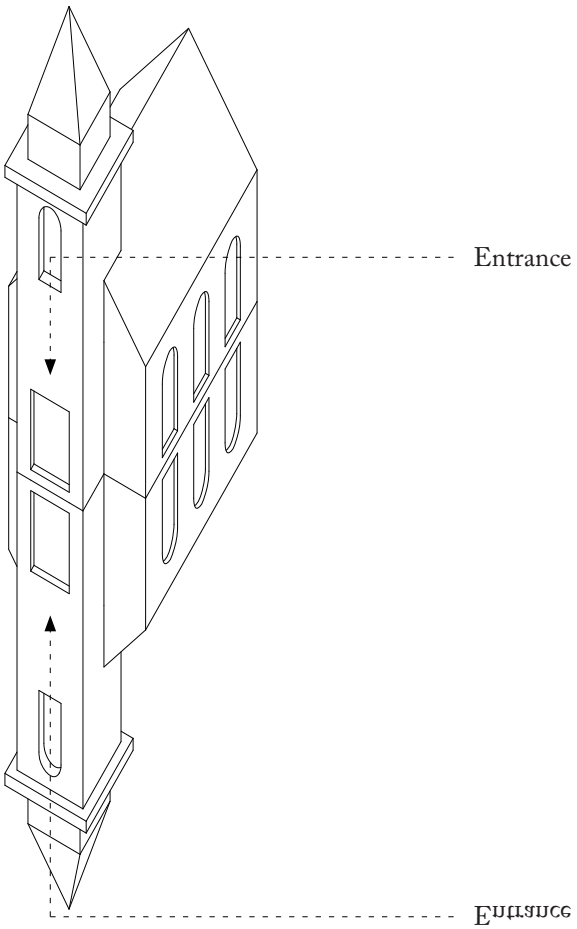
[10]ThoughtCo., *The Five Element Symbols: Fire, Water, Air, Earth, Spirit*, [website] https://www.thoughtco.com/elemental-symbols-41227881 (accessed 11 May 2018).

OUTER SHAPE ITTERATIONS



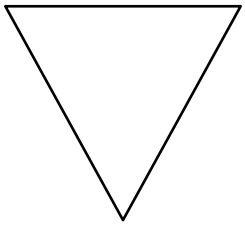
The shapes come from creating a space which would enable me to create a view for the visitors but then also change the outerform and making the transition smooth. The spherical shape made more sense to have in the project because it creates a clear centerpoint.

2 IN 1

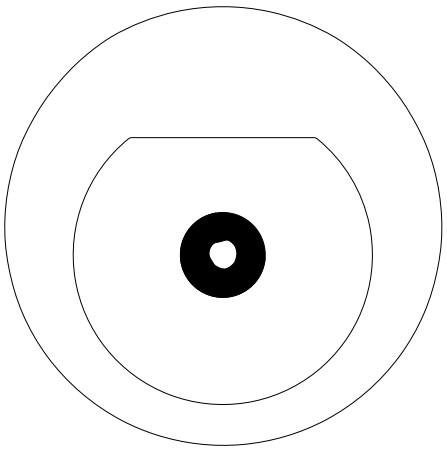


The structure is layed out as a reflection of itself vertically. You would enter the building from two ways and still remain with the same movement through the whole structure in result of gravitation control.

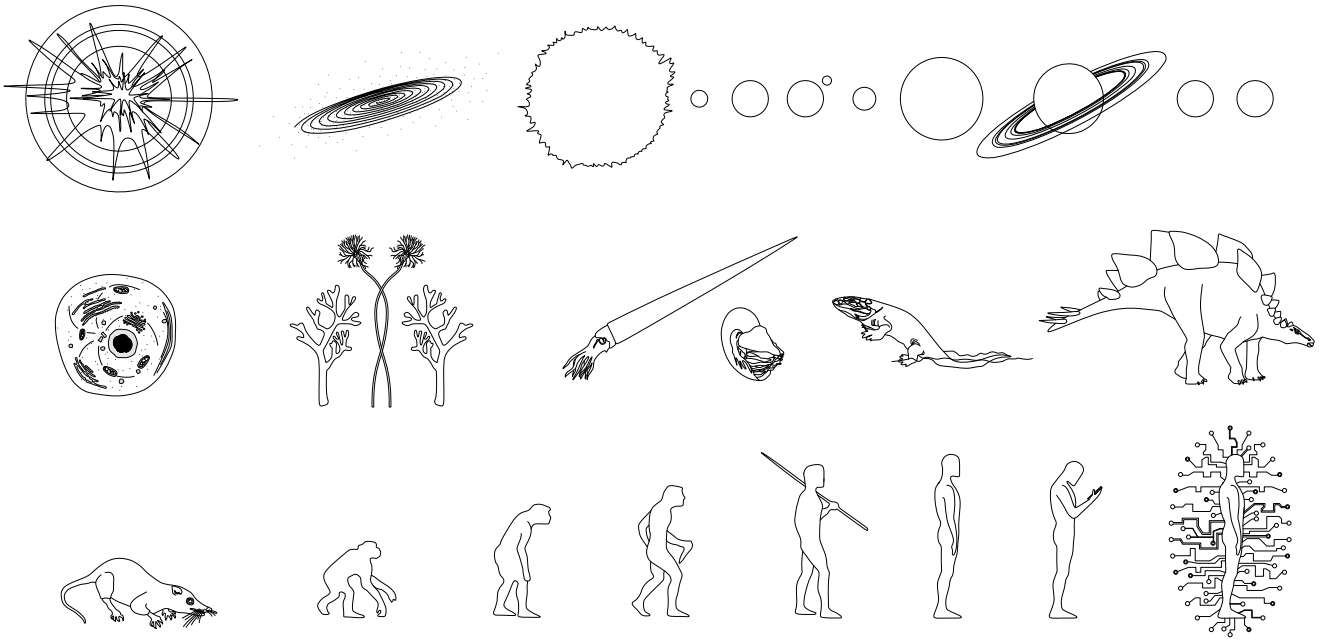
WATER



Purpose
Mural
Water

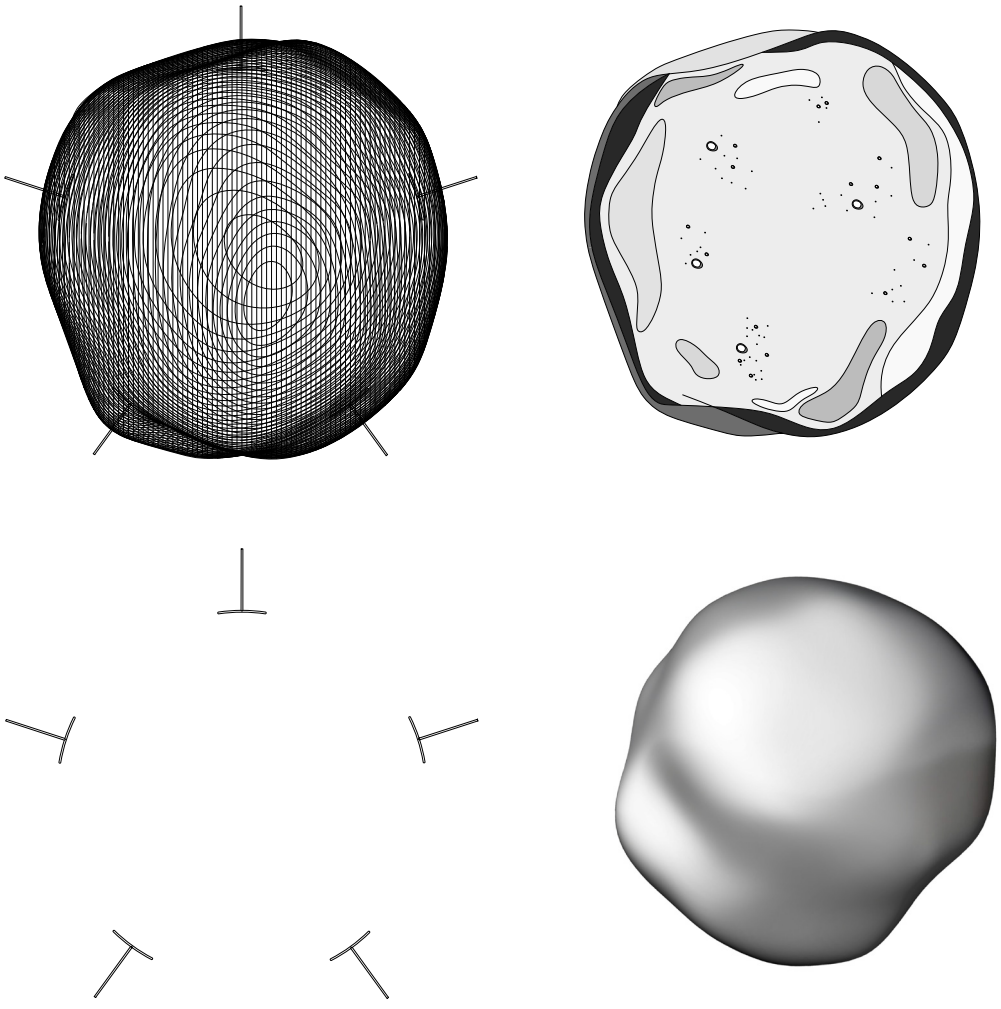


MURAL TIMELINE



The mural would be a collection of life's evolution from the beginning with big bang to where we are today; to remind visitors of their history and our continuous strive forward.

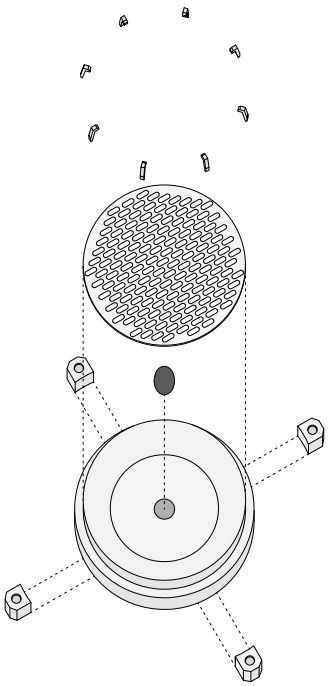
H_2O

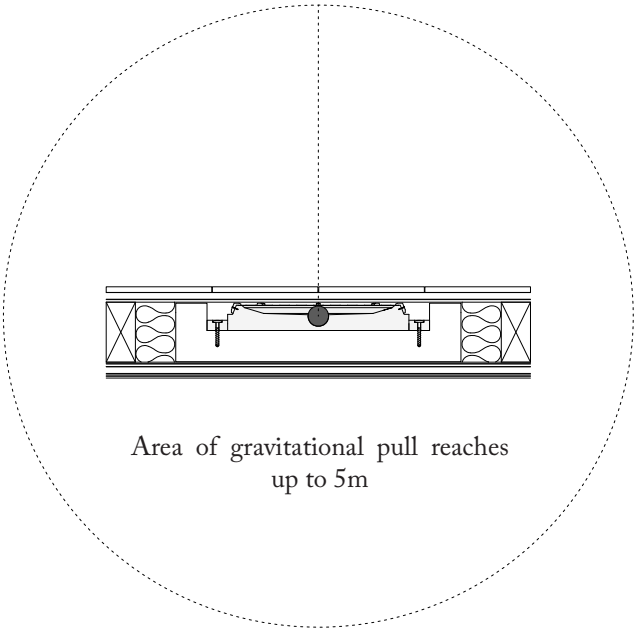


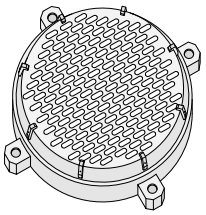
The zero gravity pool was introduced for the cleansing ritual, visitors would be able to wash their hands or face in this pool. The anchors are to keep the pool in its place and not flout out into the room, this reference comes from when astronauts do zero gravity water tests in space.[11]

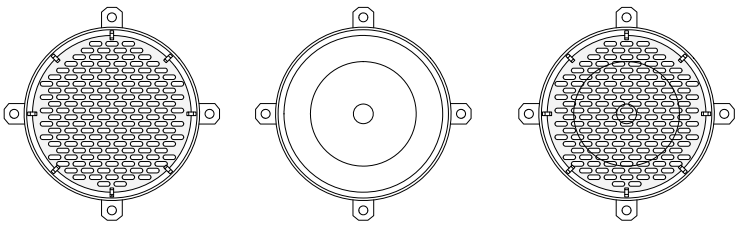
[11]Public Domain TV, 2012. *NASA: Amazing Experiments with Water in Zero Gravity* [website] http://www.youtube.com/watch?v=ntQ7qGilqZE, (accessed 14 Mars 2018).

GRAVITY CAPSULE



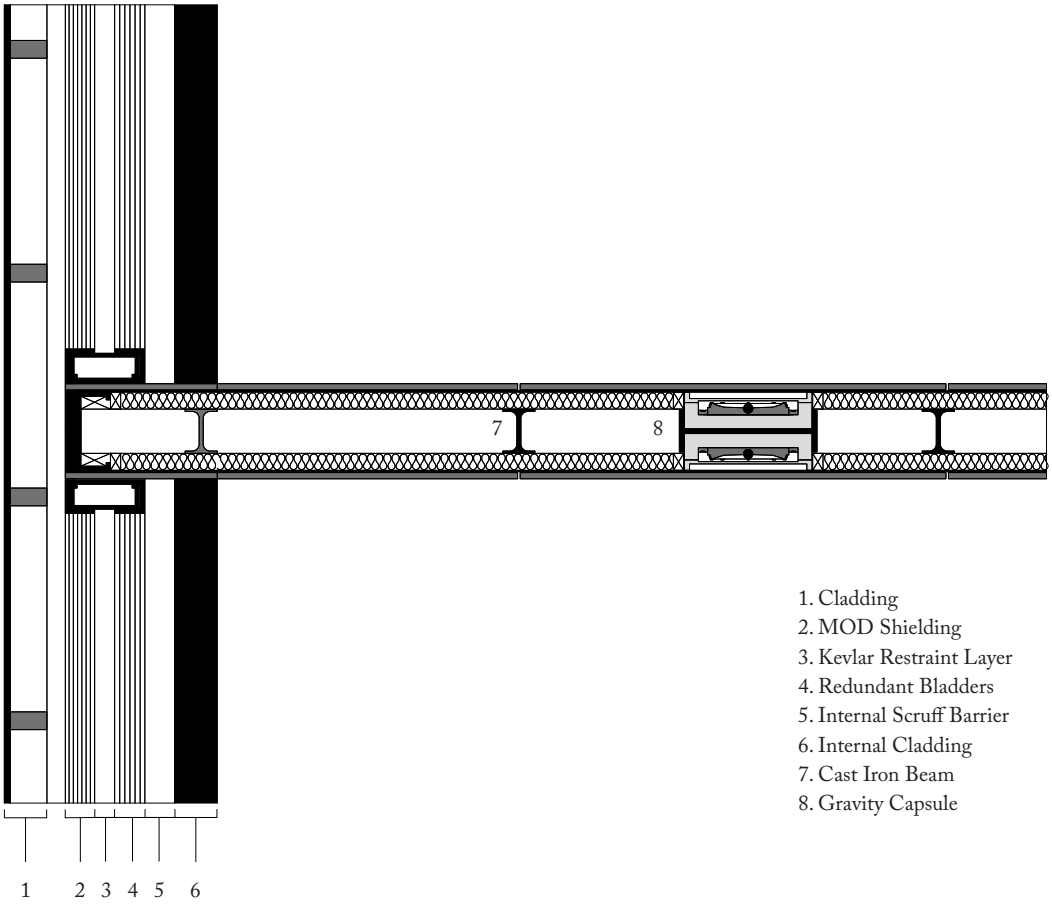






The gravity capsule is the device which can remove or obtain gravity within a limited area, it sits within the walls of the structure where the gravity attributes are desired.

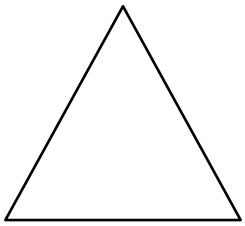
DETAIL: FLOOR MEET WALL



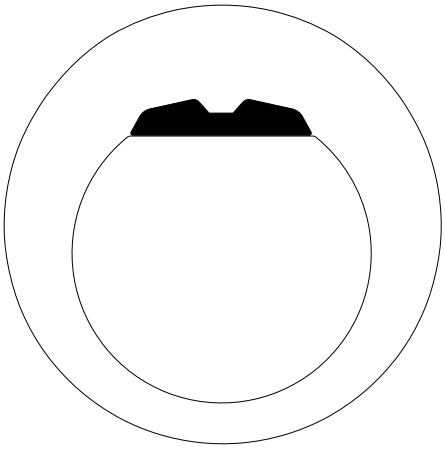
1. Cladding
2. MOD Shielding
3. Kevlar Restraint Layer
4. Redundant Bladders
5. Internal Scruff Barrier
6. Internal Cladding
7. Cast Iron Beam
8. Gravity Capsule

1m

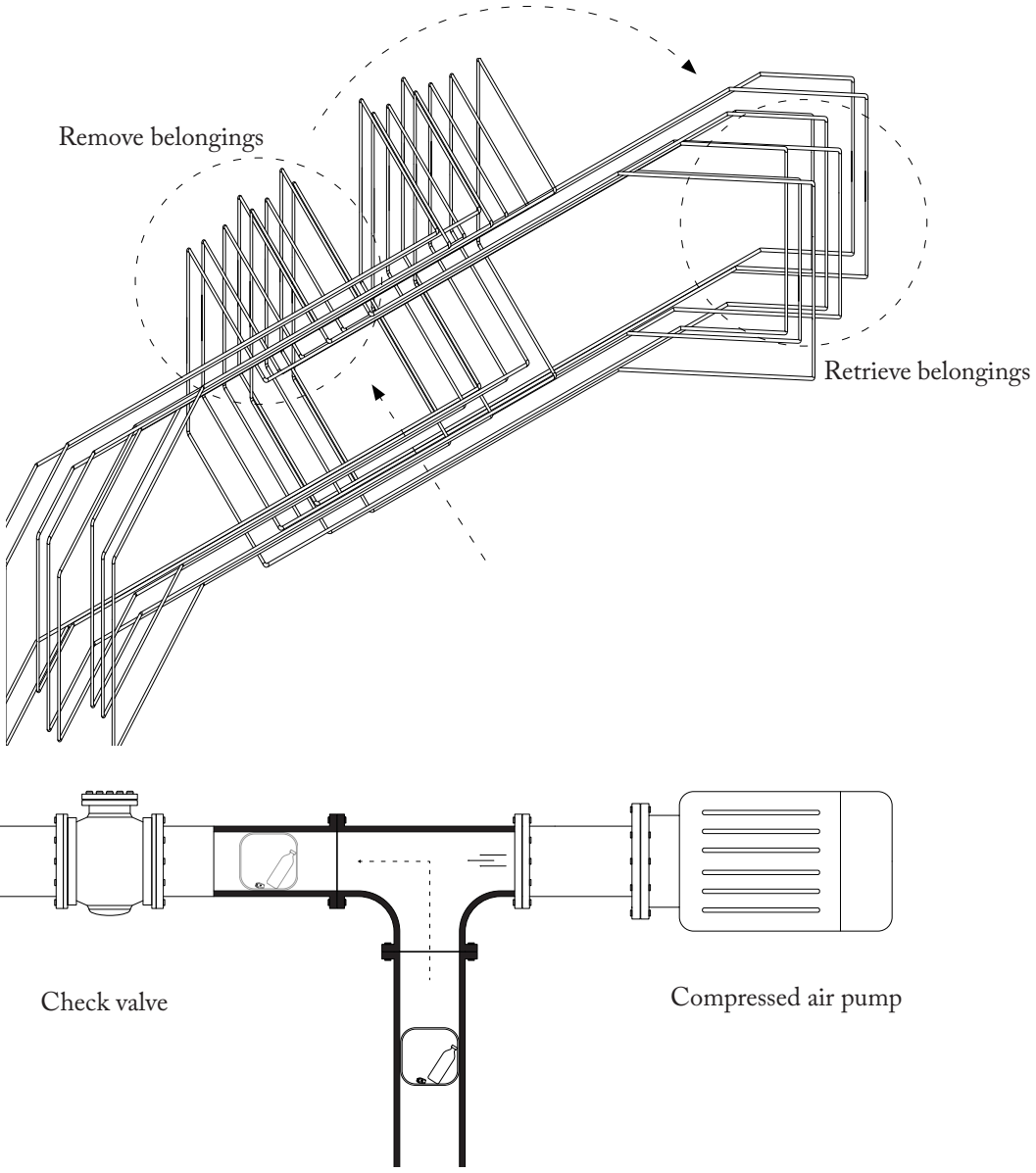
FIRE



Prepare
Mechanical system

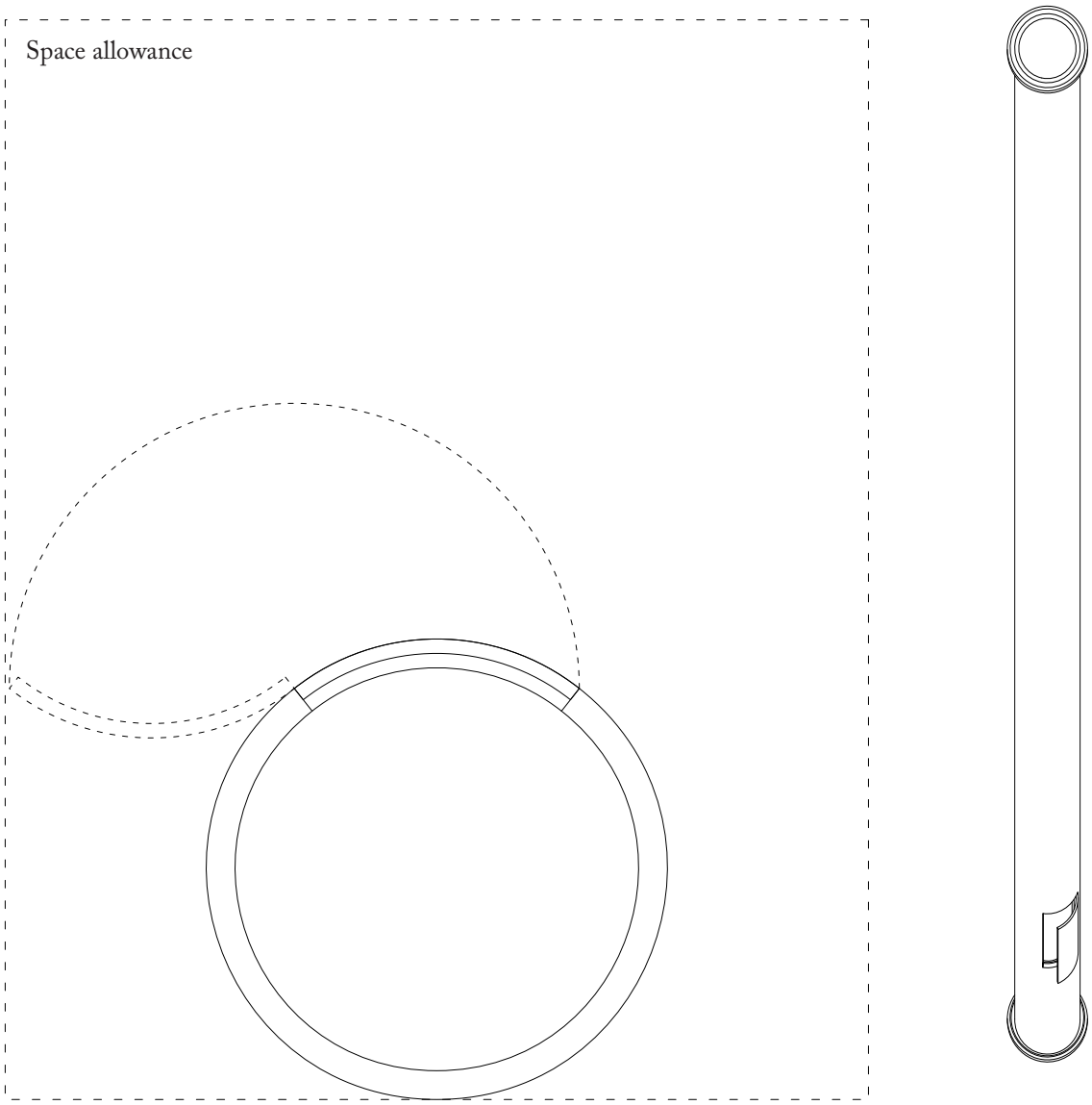


PNEUMATIC TUBE TRANSPORT



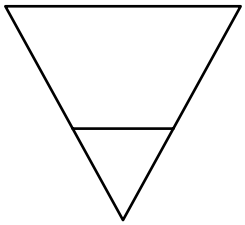
The pneumatic tube transport was introduced for the purpose that visitors would remove their belongings to not be destracted. The idea is that the visitor would not pass through the same space twice when walking through the different layers. Using a compressed air system to 'push' the items through the pipe system.

LOCKER

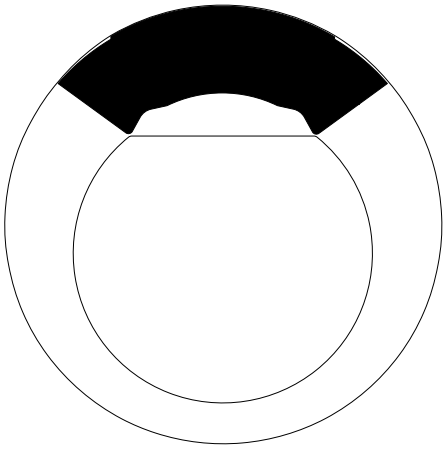


Scale 1:10 @A4

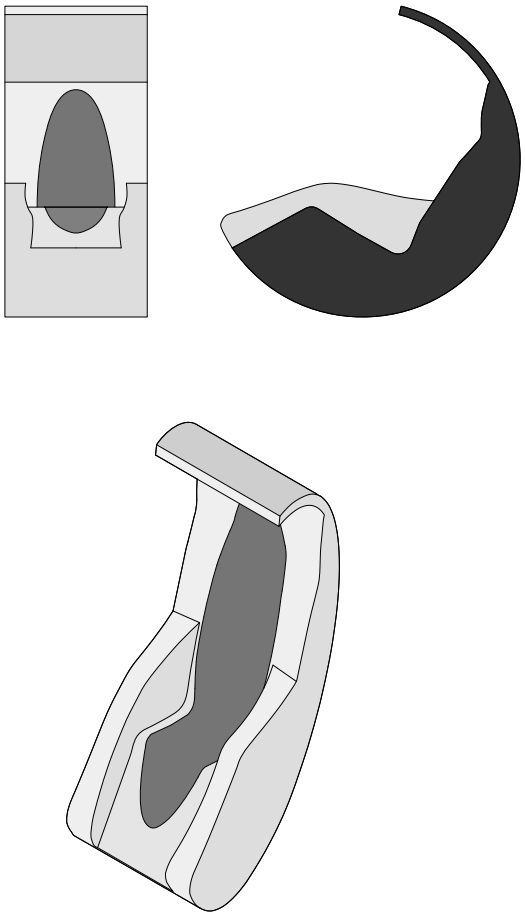
EARTH



Mind
Zero Gravity
View

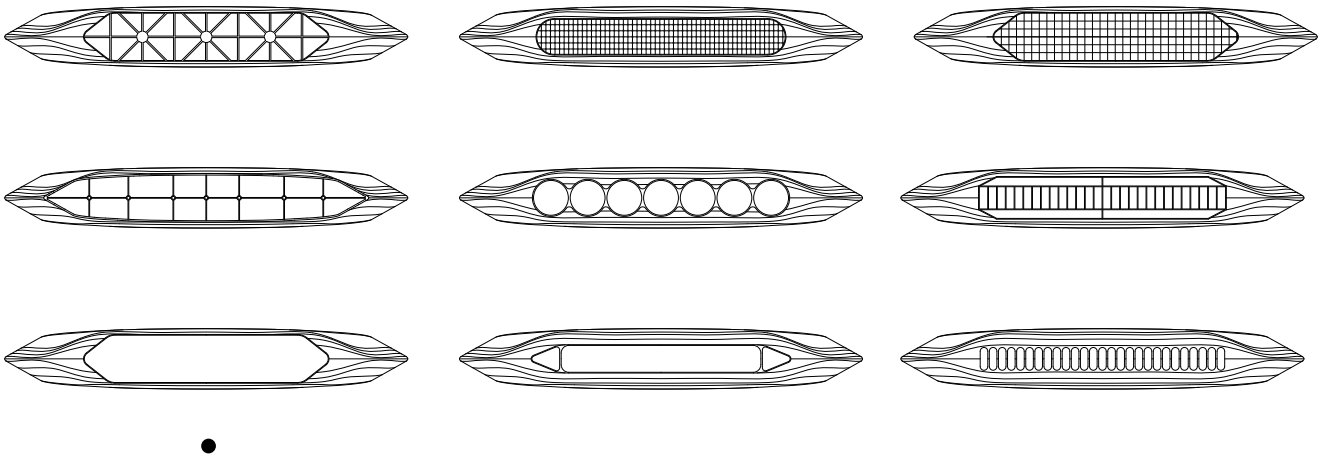


CONDUCTIVE SEAT



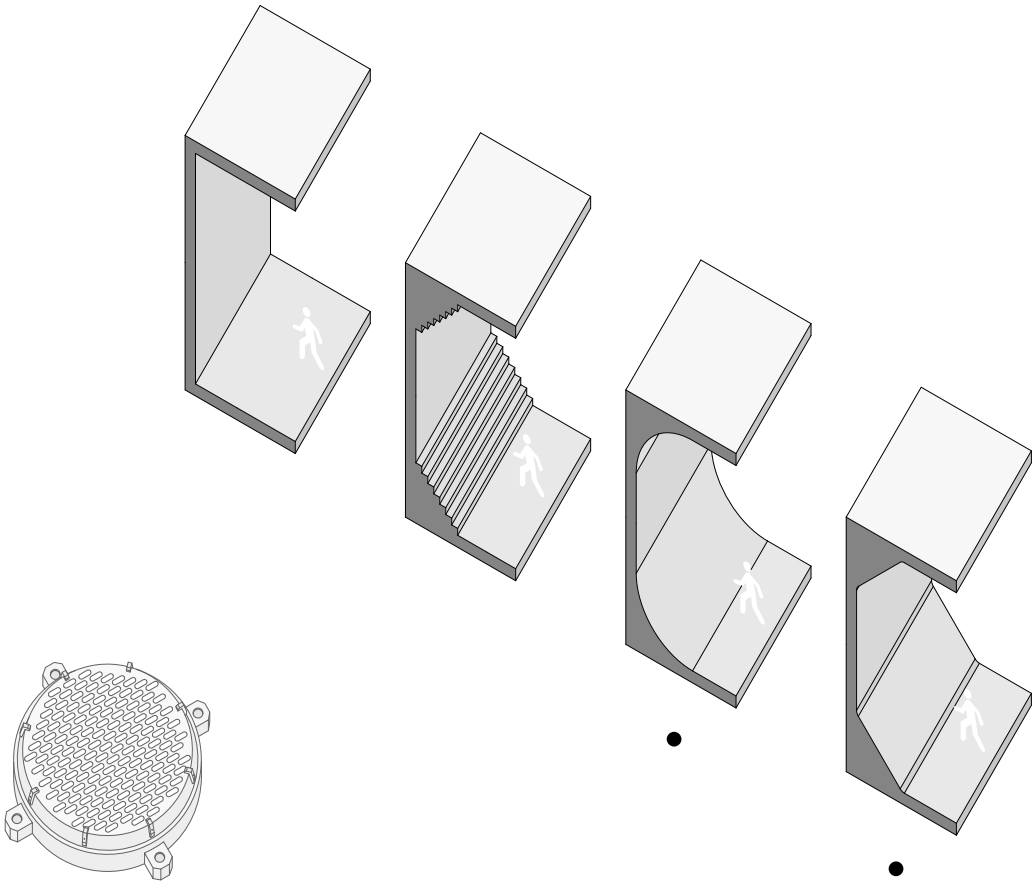
Similar to the conductive plad which the user touches when entering the space, each chair is given a conductive seating which the user touches, you become uploaded and through this you can receive the update. It is also ergonomic for comfort purposes.

WINDOW ITTERATIONS



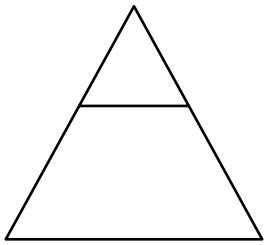
While designing the viewport I wanted it to be a panoramic view to enable every visitor a view access. I concluded with creating a shape that followed the shape of the structure. The temple would always have this space facing Earth.

360° MOVEMENT

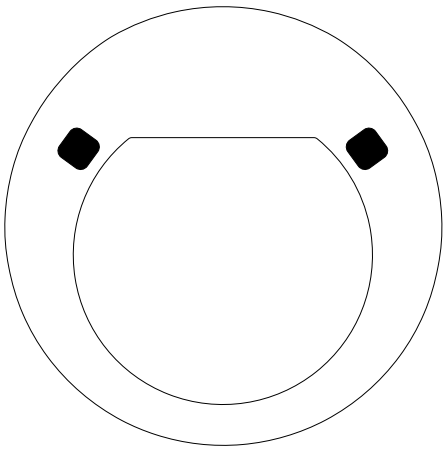


The internal walls within the building had to be continuous, not allowing sharp corners and making use of the gravity capsules, allowing visitors to move along the walls without any obstacles.

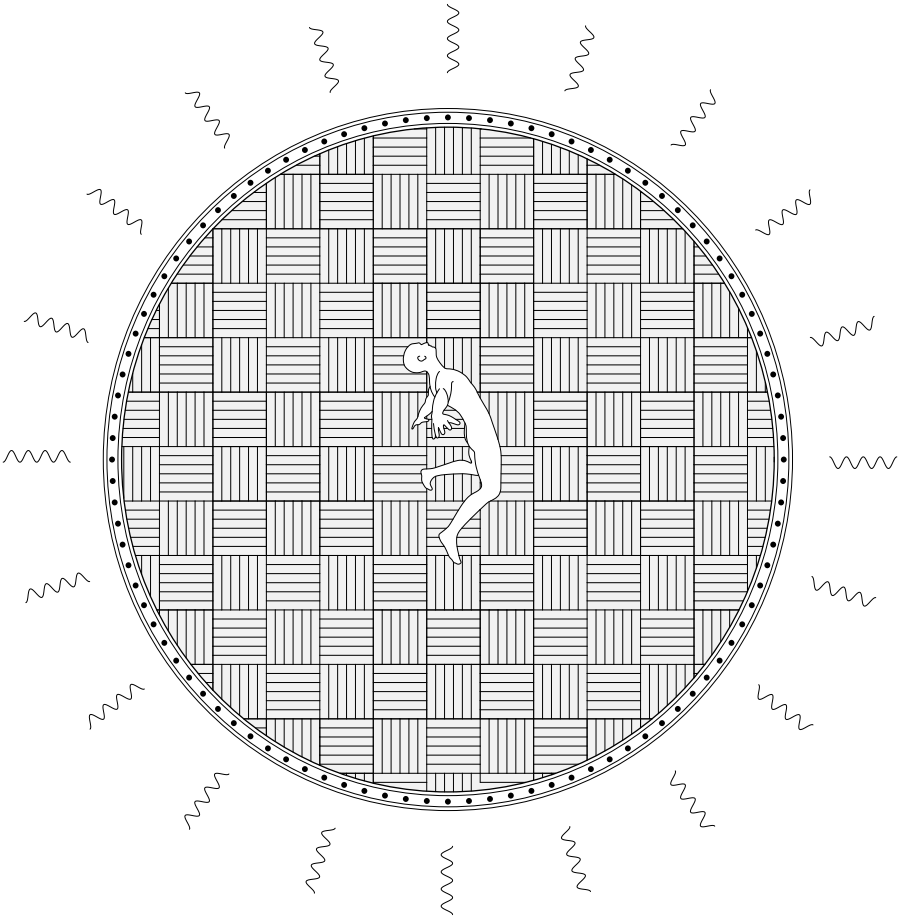
ΔIR



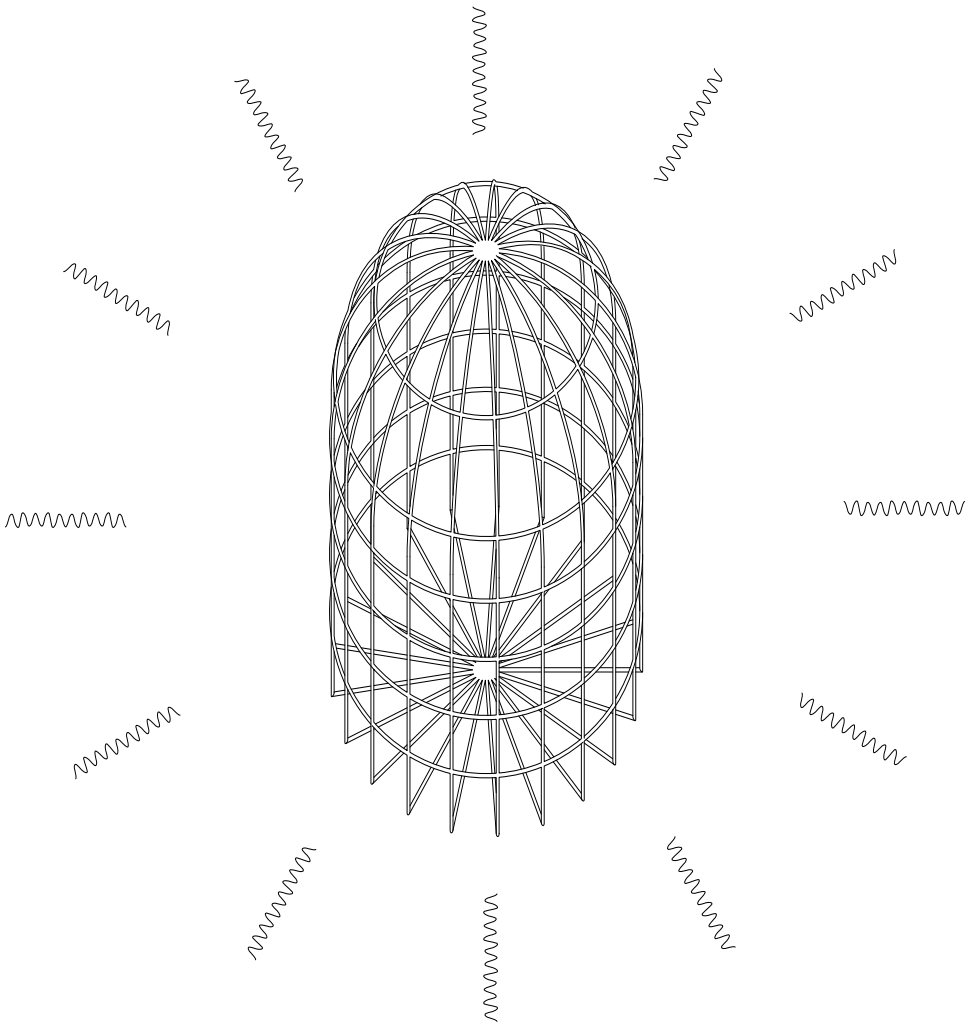
Reboot
Human
Space



REBIRTH

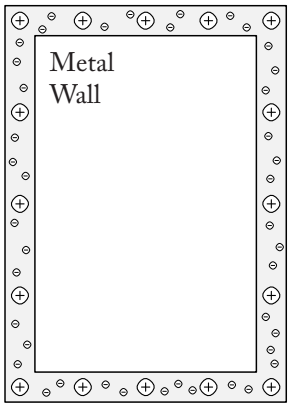


FARADAY CAGE

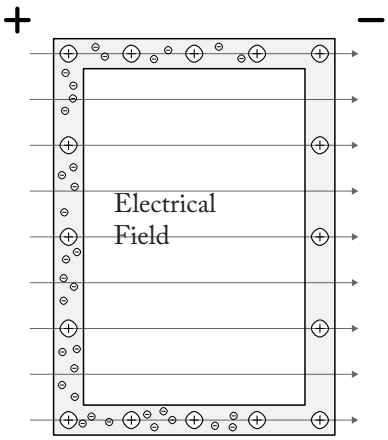


Faraday cages are constructed with metal screens all around, which conduct electricity, creating a shielding effect. This could be used to eliminate any electromagnetic radiation to exit or enter the space. Today these structures are used for MRI scan rooms with radio frequency (RF) shielding.

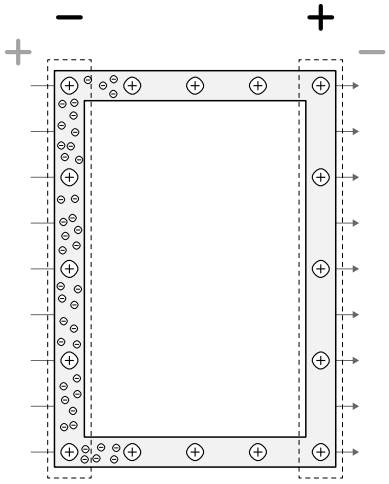
FARADAY CAGE PRINCIPLE



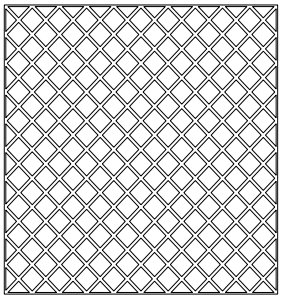
Faraday Cage in the absence of an electrical field.



The charged particles in the wall of the Faraday cage respond to an applied electrical field.



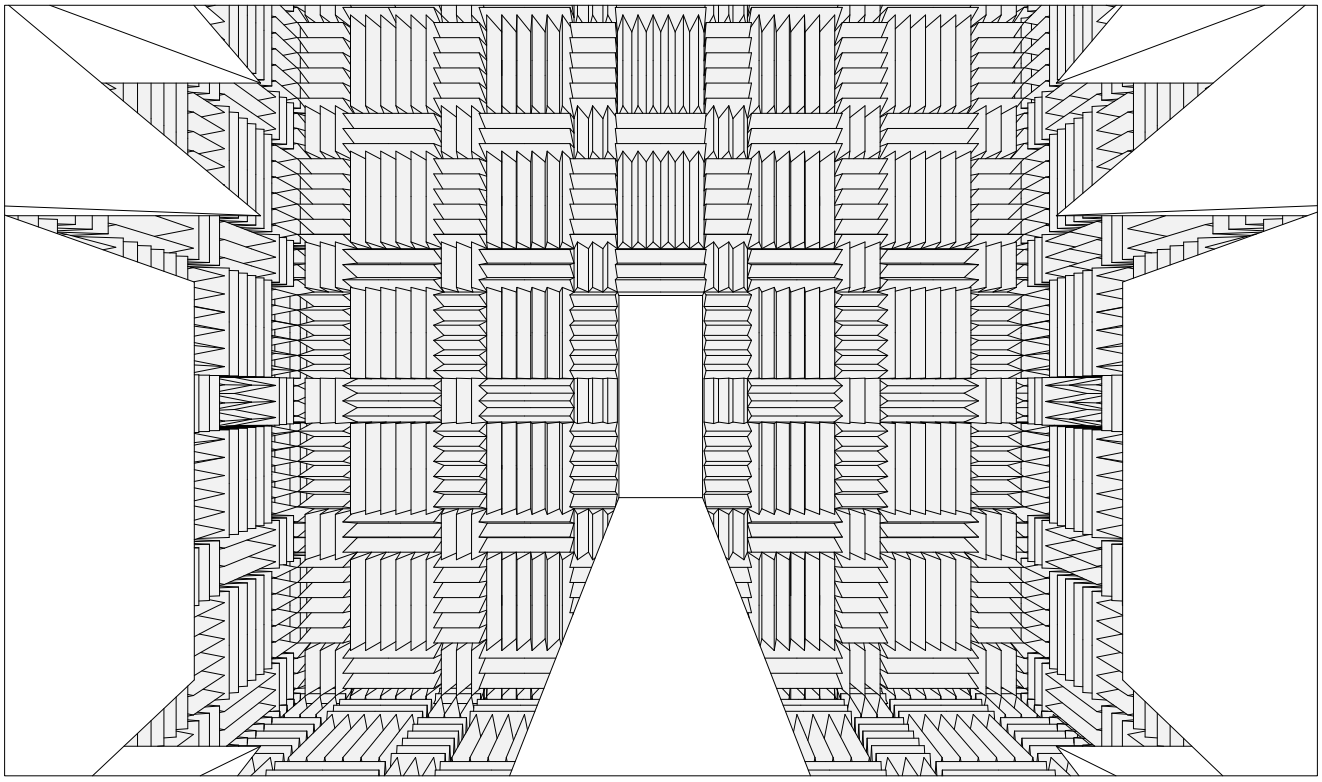
Electrical fields generated inside the wall cancel out the applied field, neutralising the interior of the cage.



metal mesh

The principle of how a faraday cage or RF shield works. A metal mesh which surrounds the structure is what makes the electromagnetic waves neutralised.

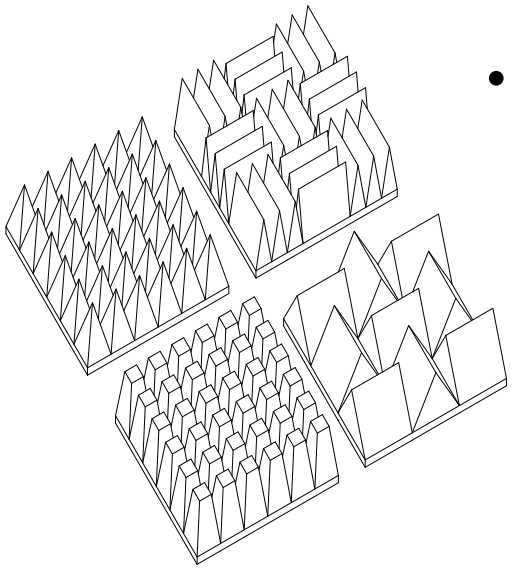
ANECHOIC CHAMBER

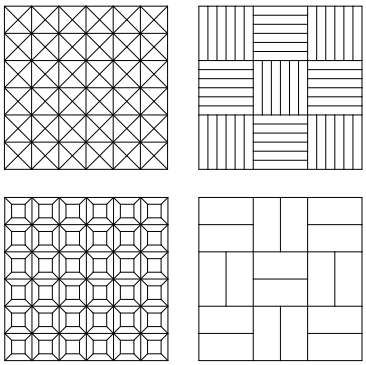


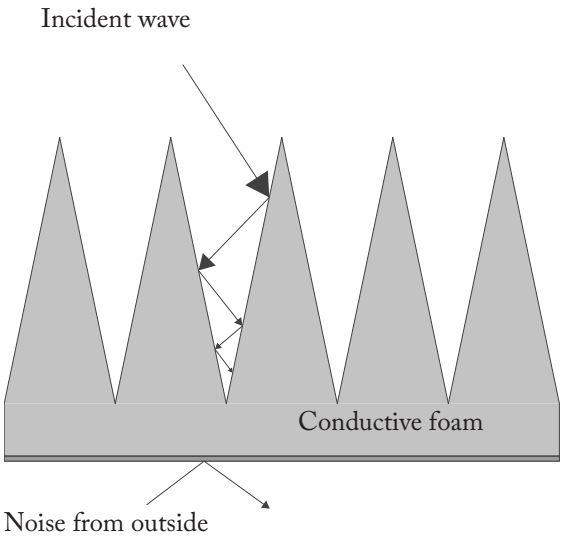
An-echoic meaning "non reflective, non-echoing" is a room designed to completely absorb any sound or electromagnetic waves. Which means when you speak within this space you will hear direct sound that simulates the same as being within an infinate space.[12]

[12]Comsol Inc., *Anechoic Chamber Absorbing Electromagnetic Waves*, [website] http://www.comsol.com/model/anechoic-chamber-absorbing-electromagnetic-waves-38681 (accessed 12 April 2018).

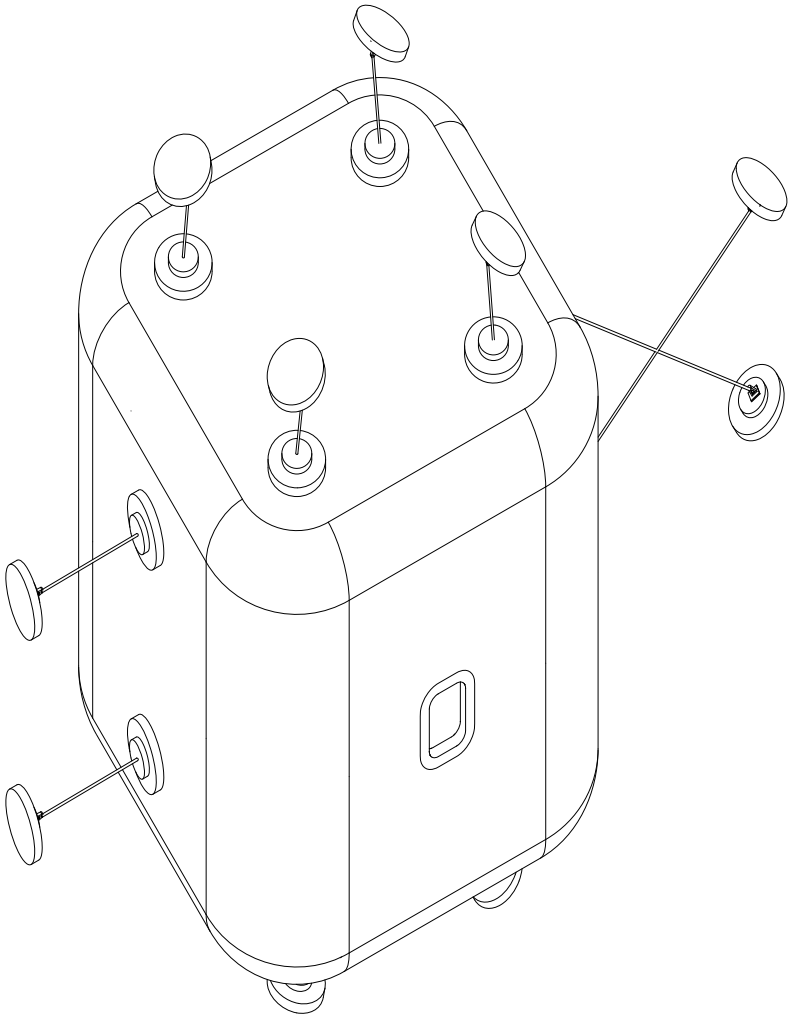
ANECHOIC CHAMBER GRID

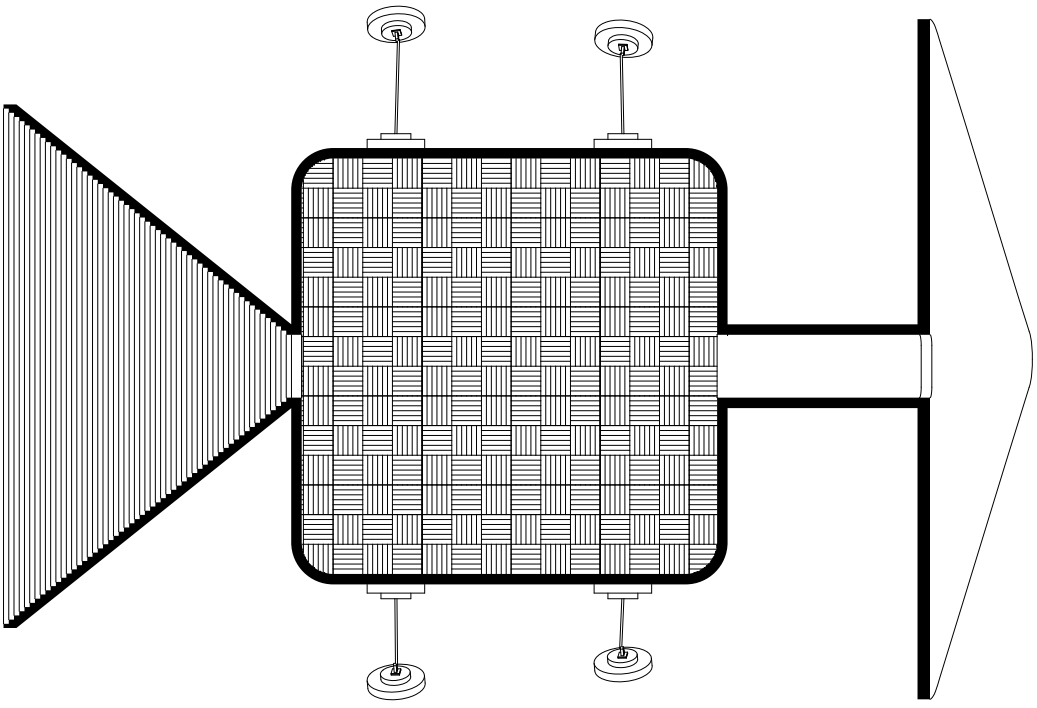






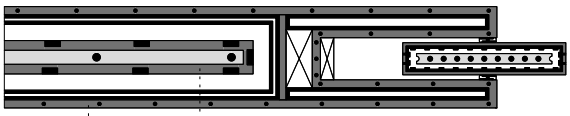
A variation of the insulation patterns within the chamber and a diagram showing the basic parameters of how the space works.





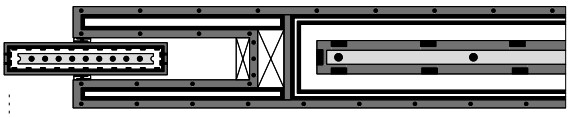
THE CAGE

DETAIL: FARADAY CAGE



Second Layer of copper mesh.

First Layer of copper mesh.

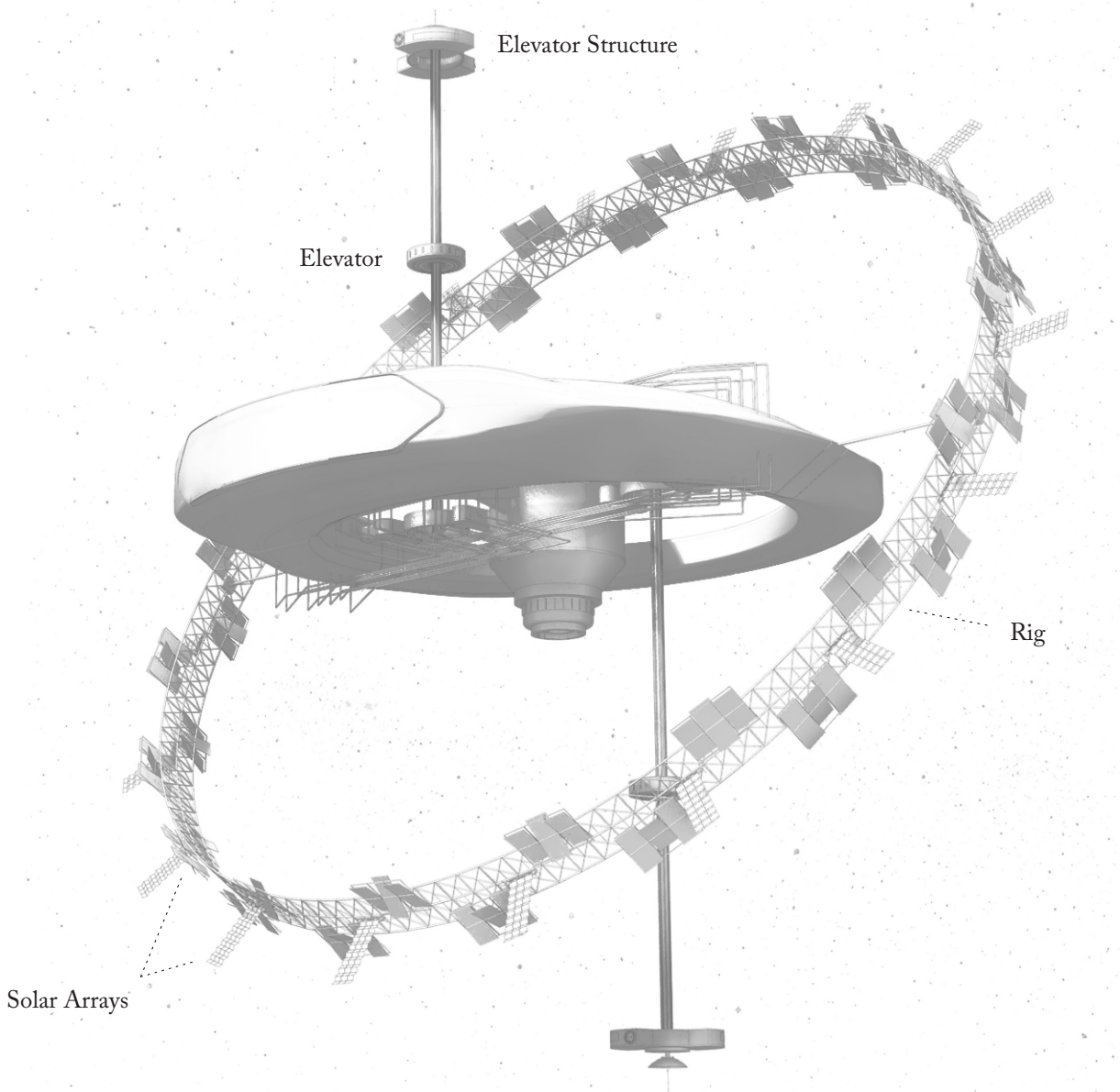


Doors consist of the same structure as wall with two layers of copper mesh

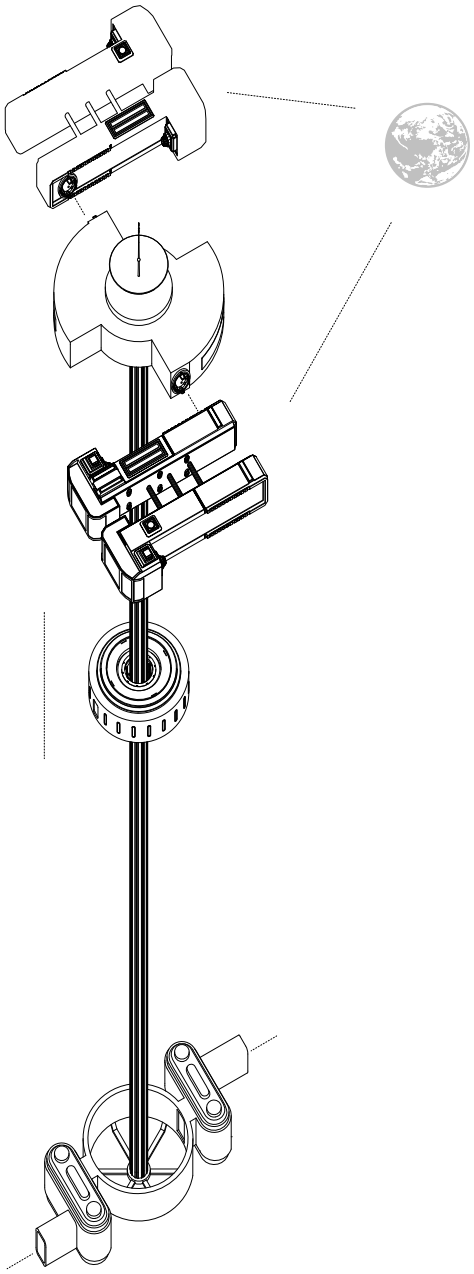
1m

ADDITIONAL STRUCTURES

EXTERNAL STRUCTURES



ELEVATOR STRUCTURE



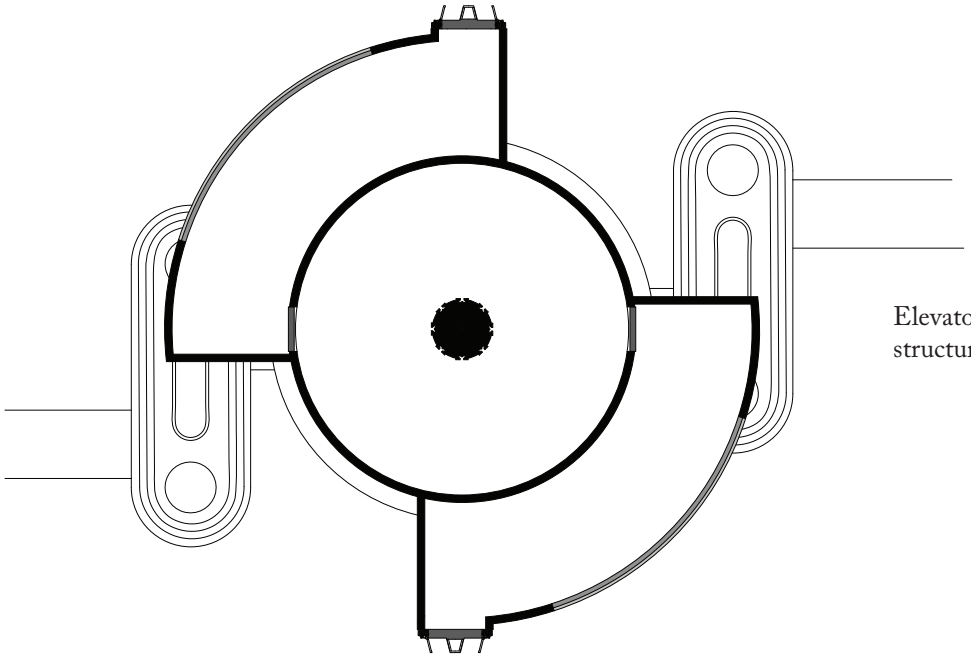
Elevator

Spaceshuttles travel from earth to the temple station

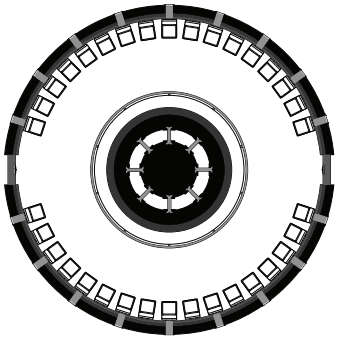
Visitors arrive and walk towards the elevators

Arrive at the gate, visitors enter the building to the left and exit into the elevator from the right

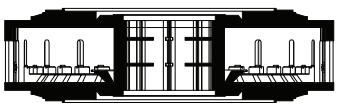
ELEVATOR



Elevator docking structure

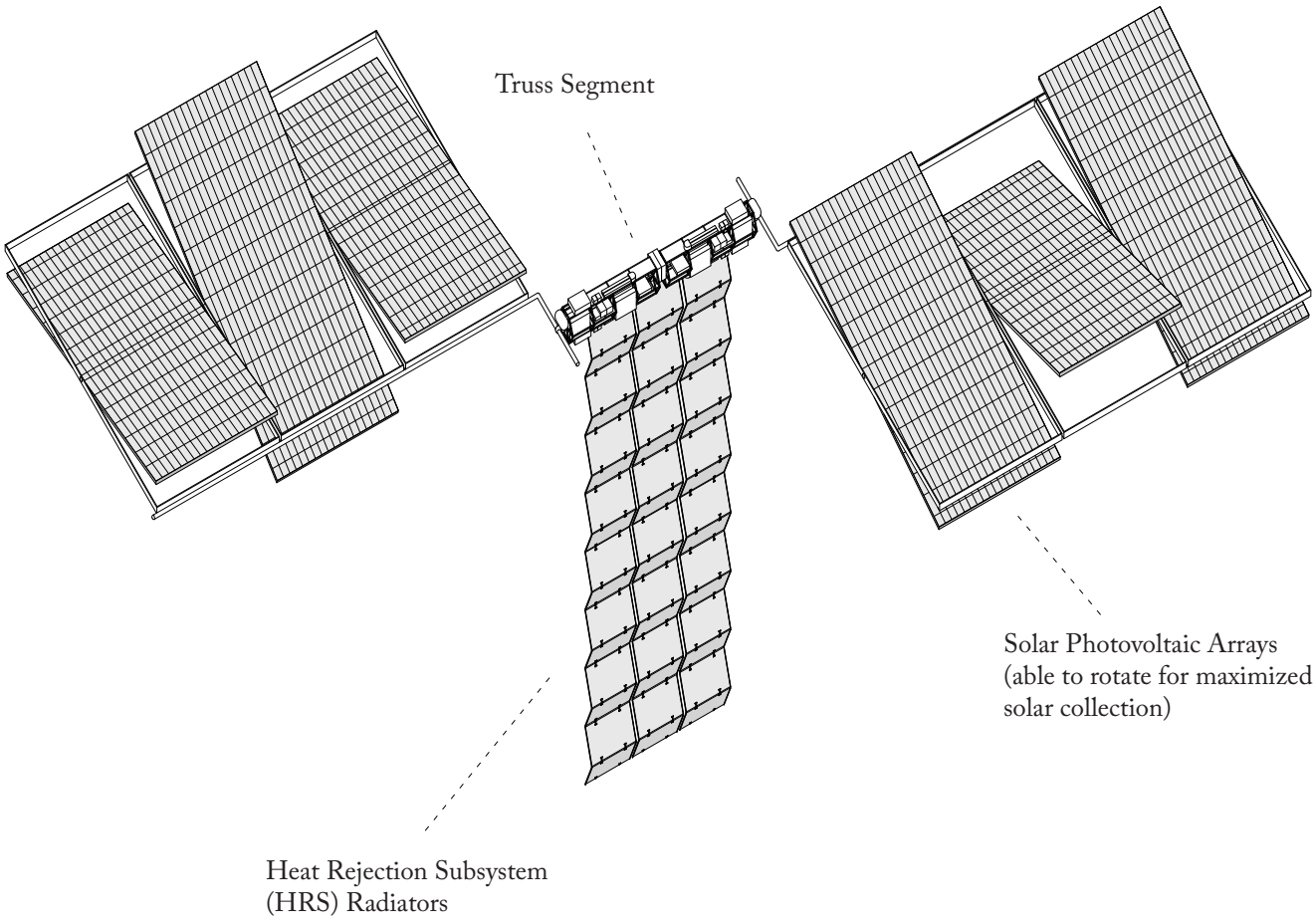


Elevator Plan

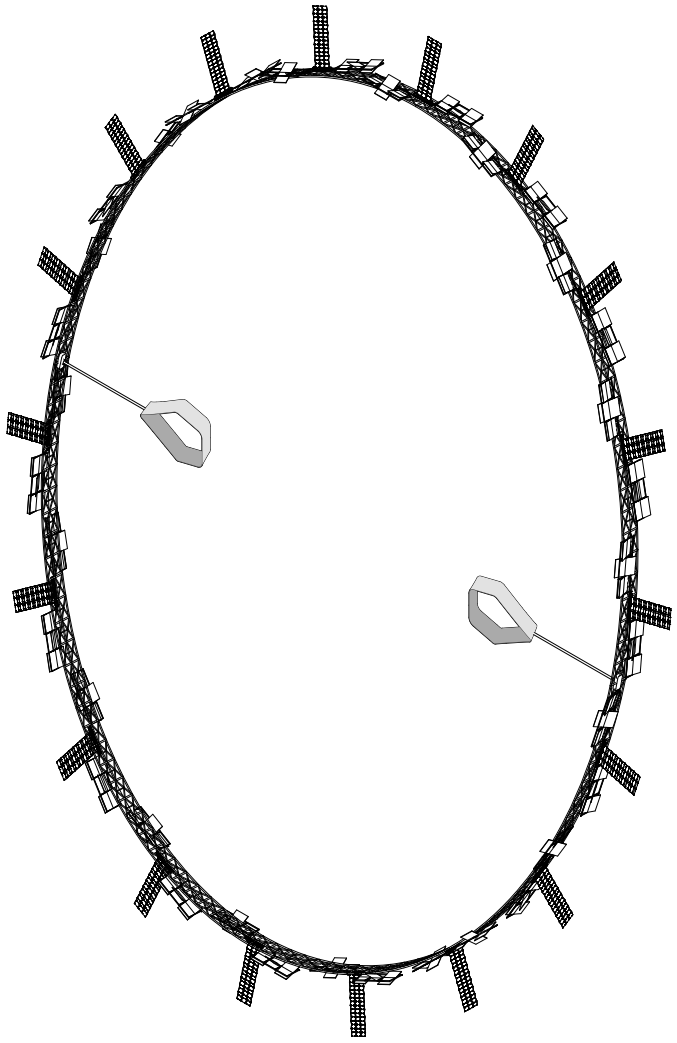


Elevator Section

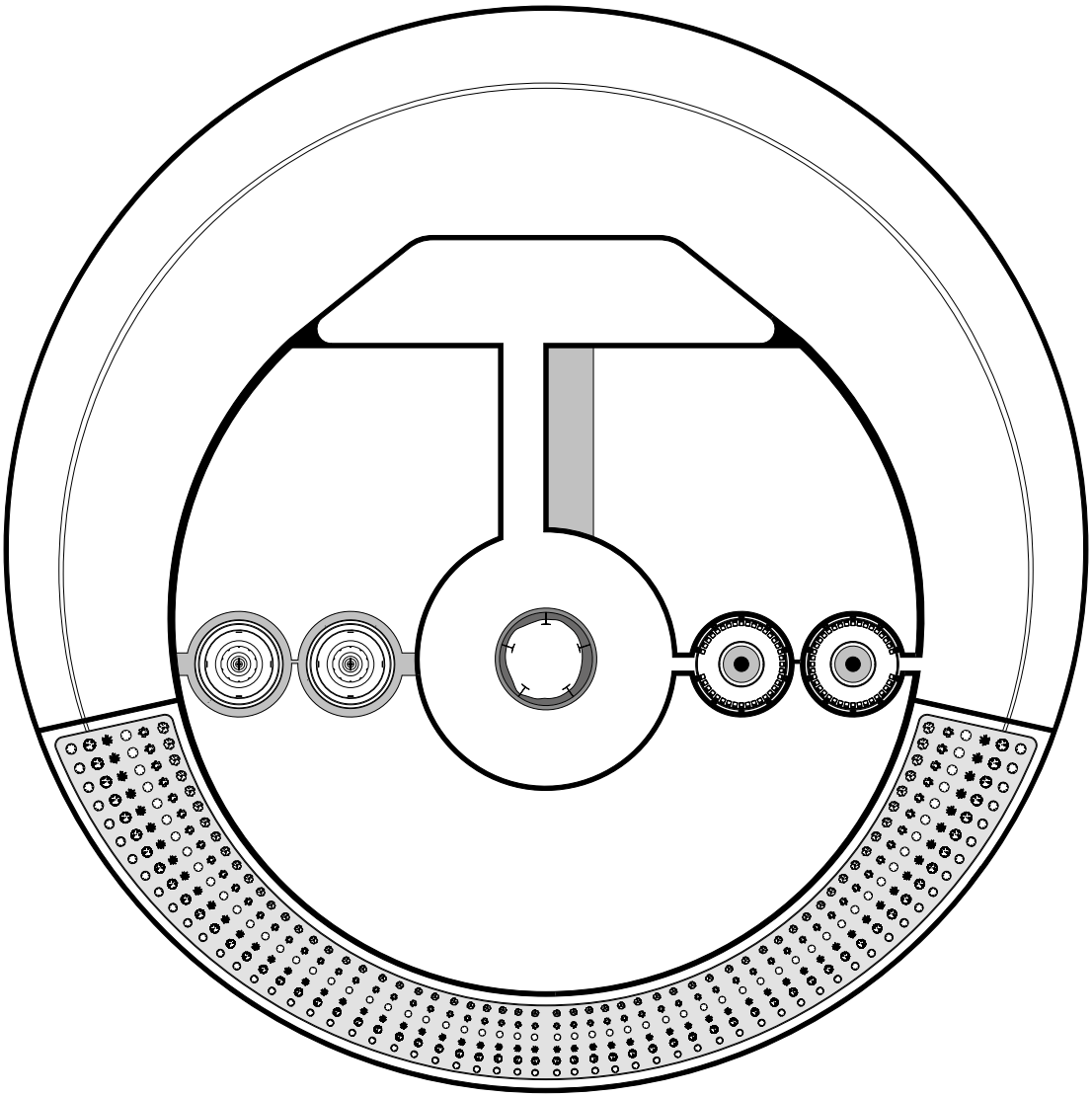
SOLAR ARRAYS



RIG

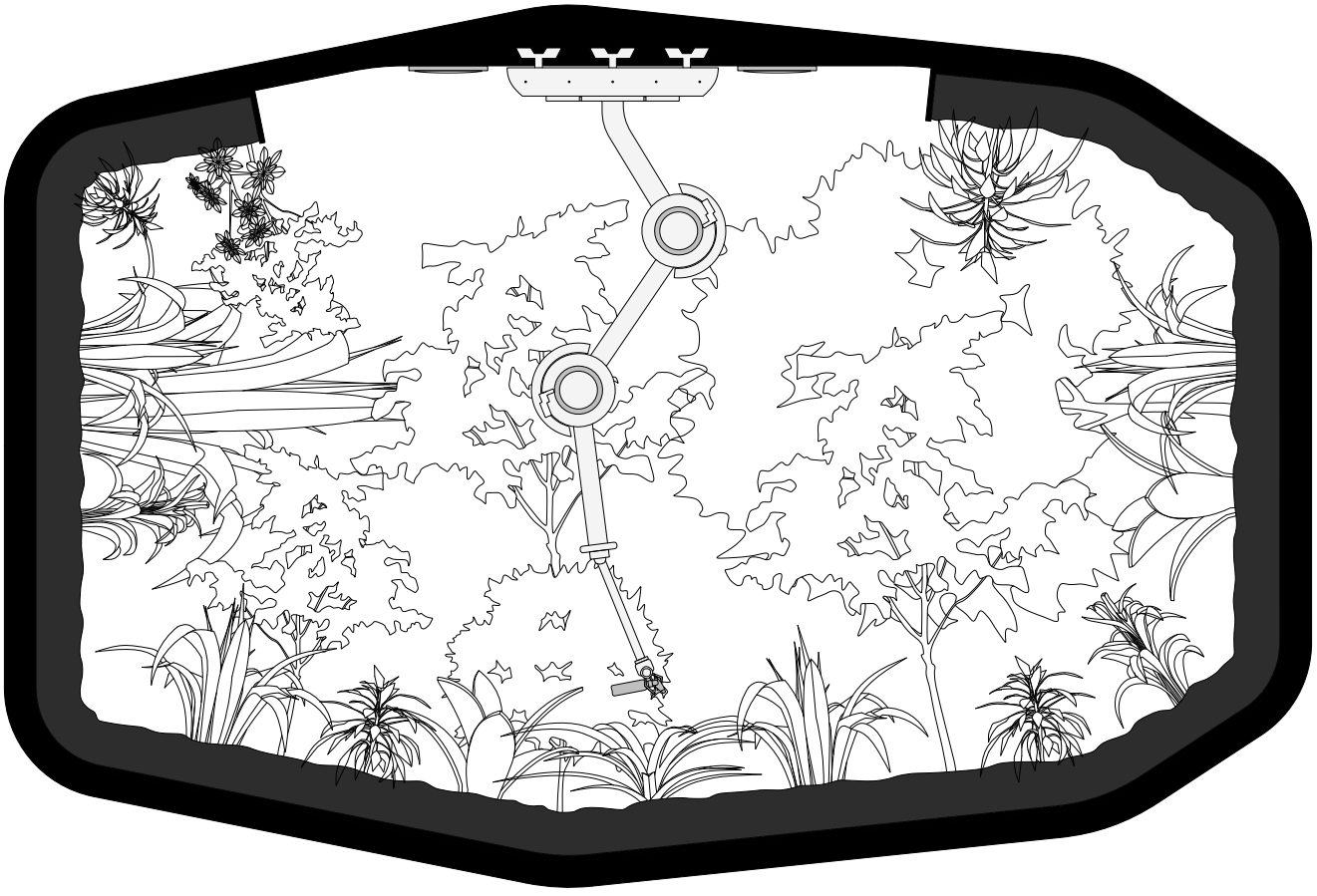


The solar arrays are attatched to a metal rig that connects to the main structure. Along with the solar arrays the technical hardware for the AI also sits on this rig.



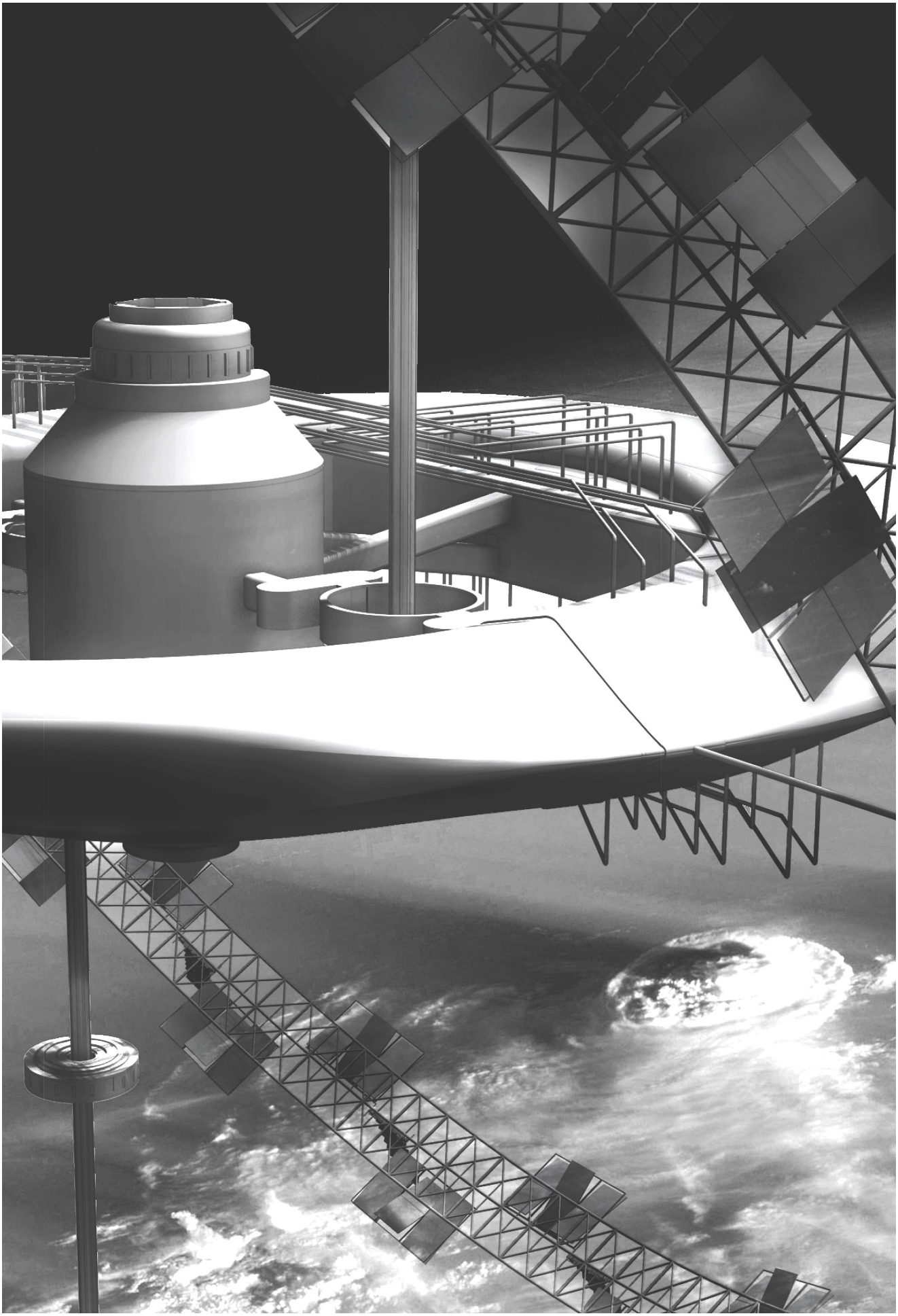
In the back of the structre there will be a green area producing oxygen for the building. This area will be filled with plants nurtured by the AI.

HARDWARE

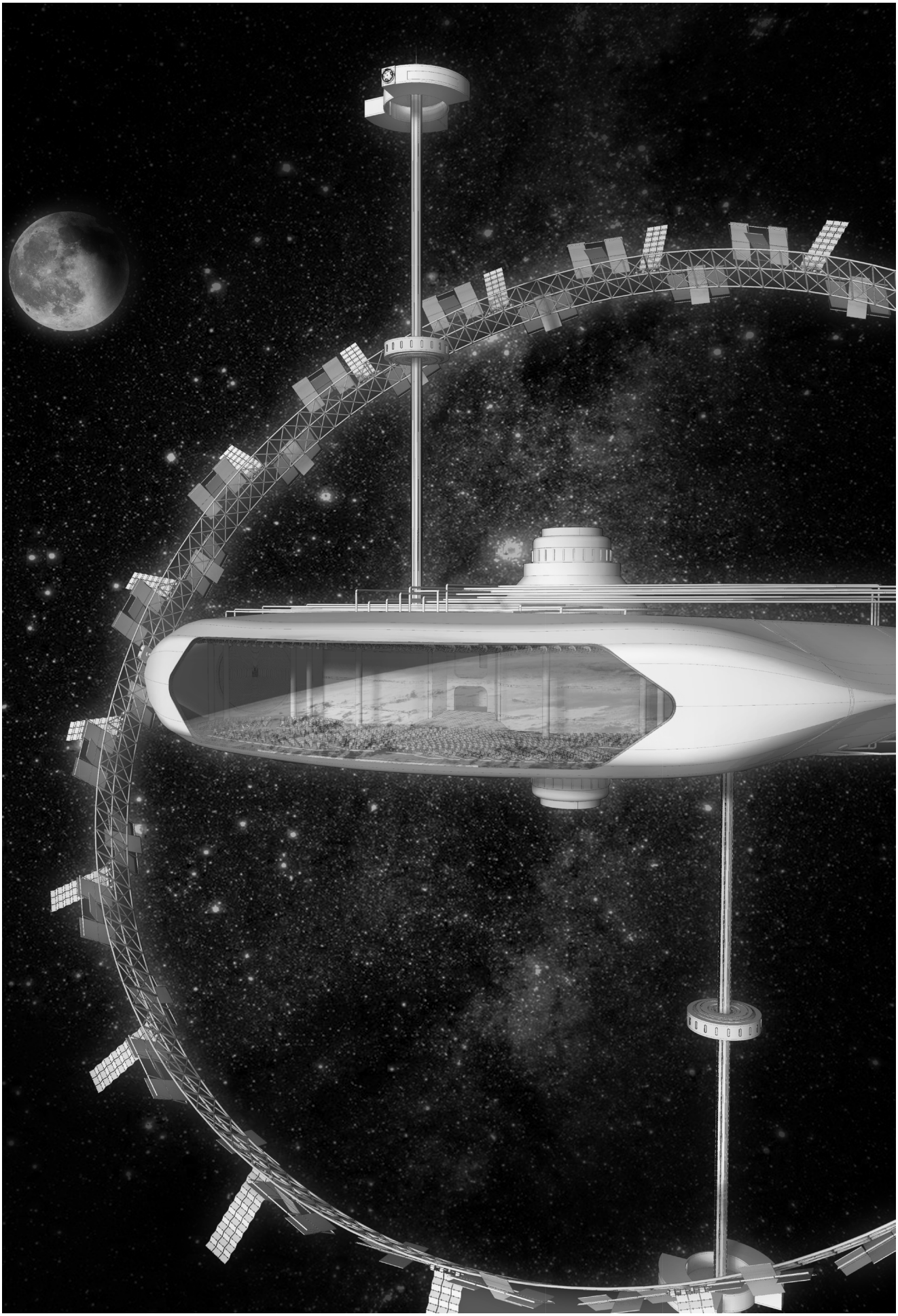


The only physical form the AI will take shape of within the temple are the robotic arms that care for the vegetation in the back of the structure. The plants and trees can grow horizontally and vertically to maximize production of oxygen.

VISUALS

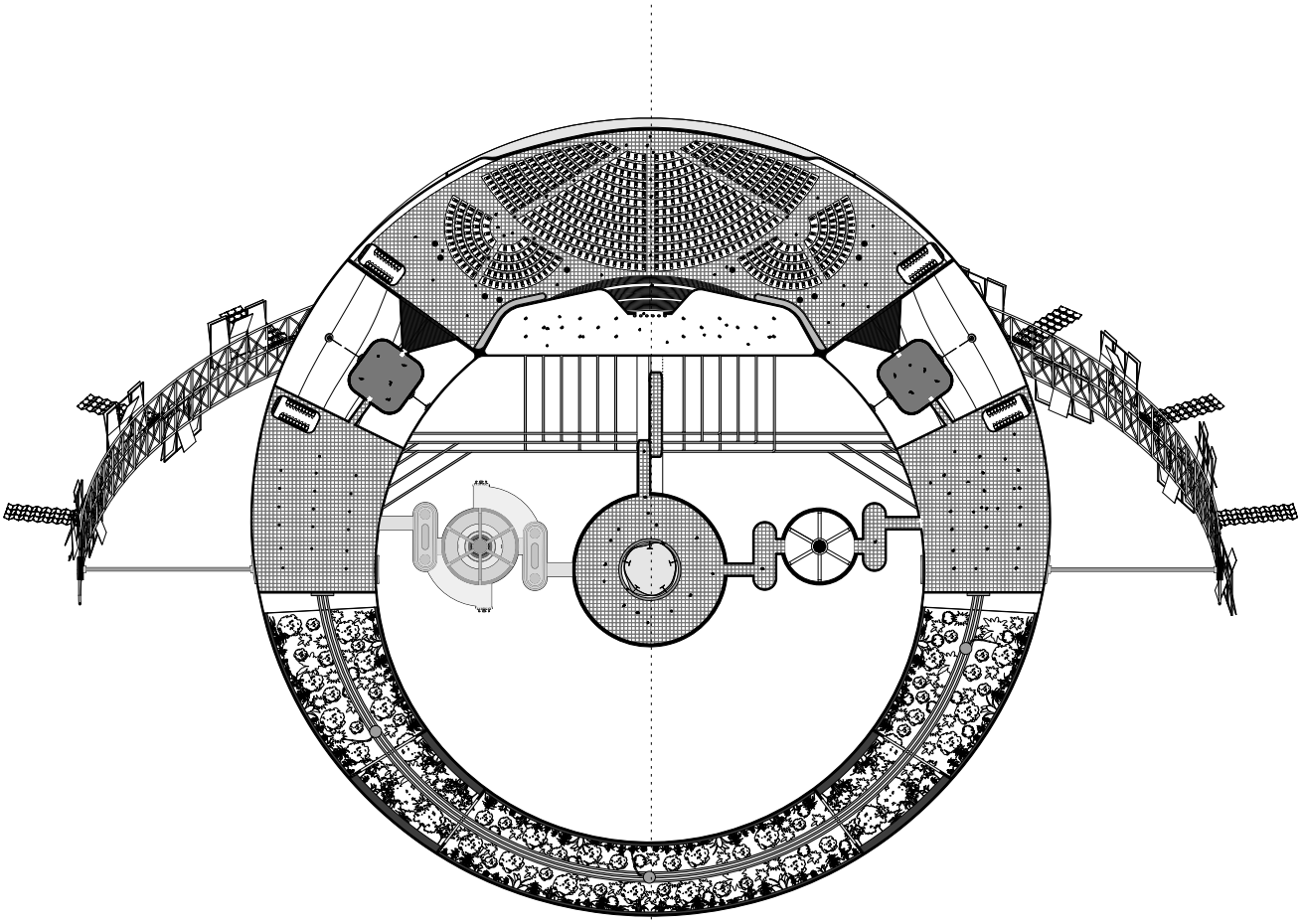


Back



Front

FINAL DRAWINGS



LUND UNIVERSITY

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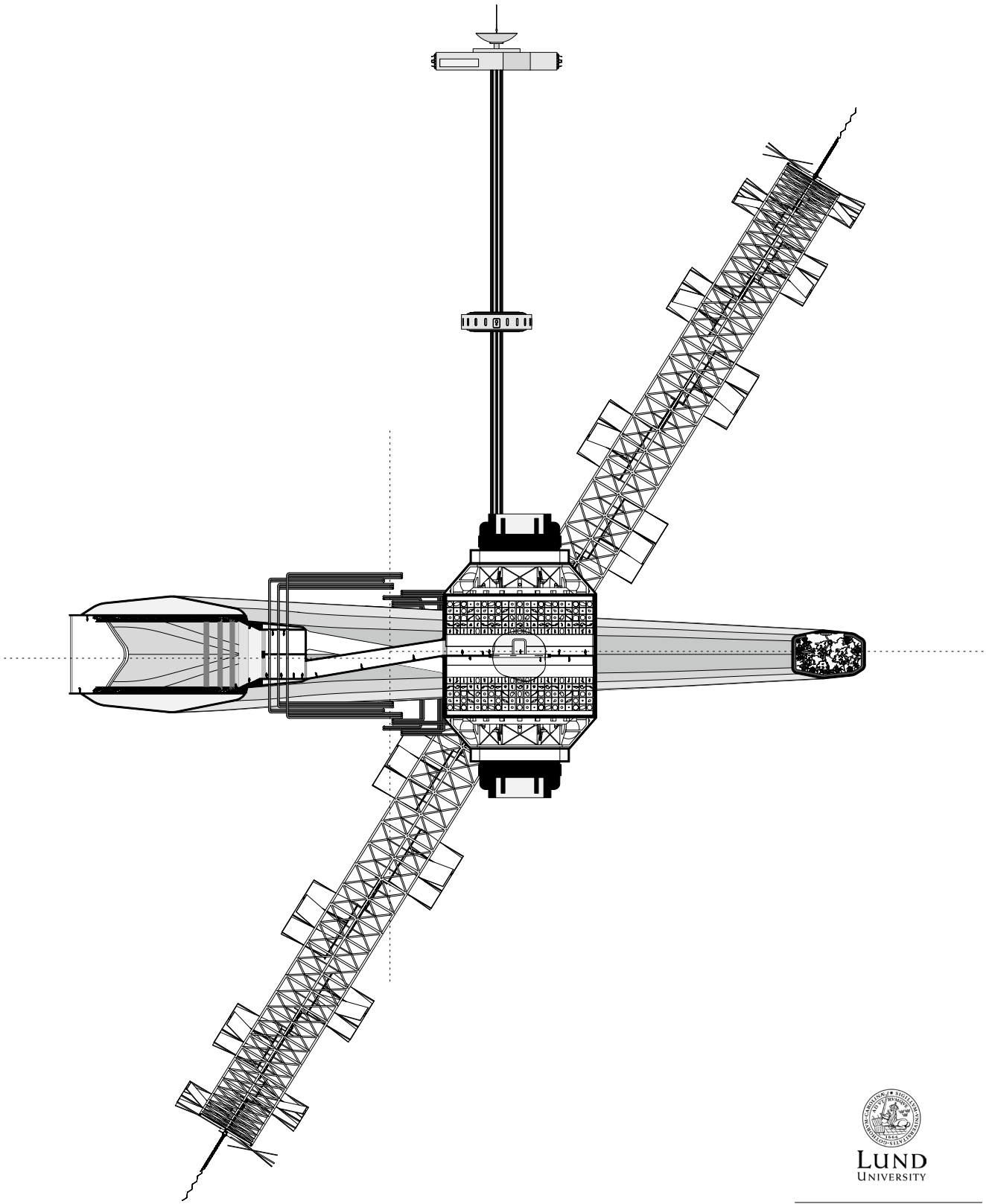
Drawing Status:	Plan
Designed by:	AvH
Scale:	1:500 @A2

PLAN



LUND UNIVERSITY

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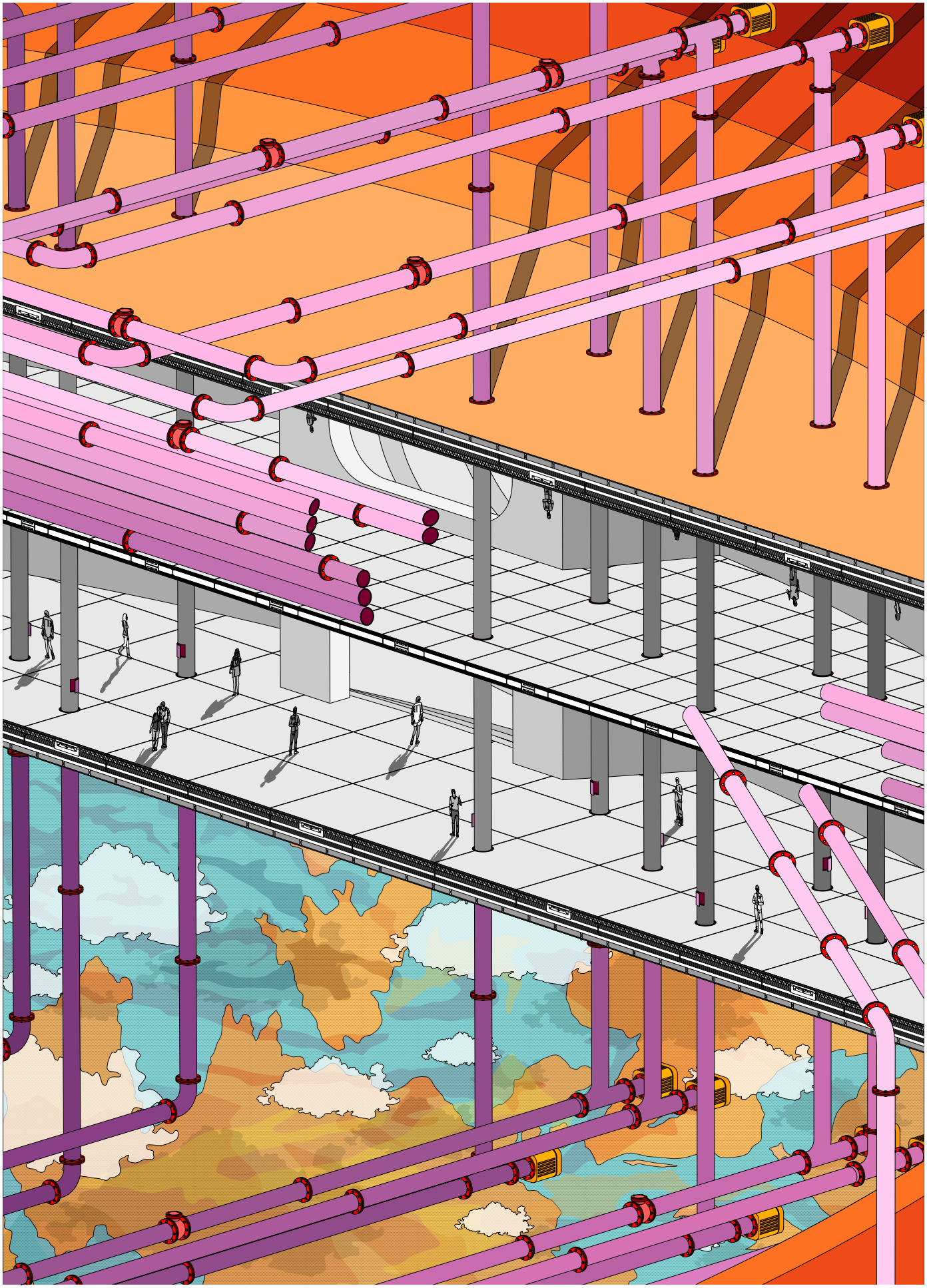
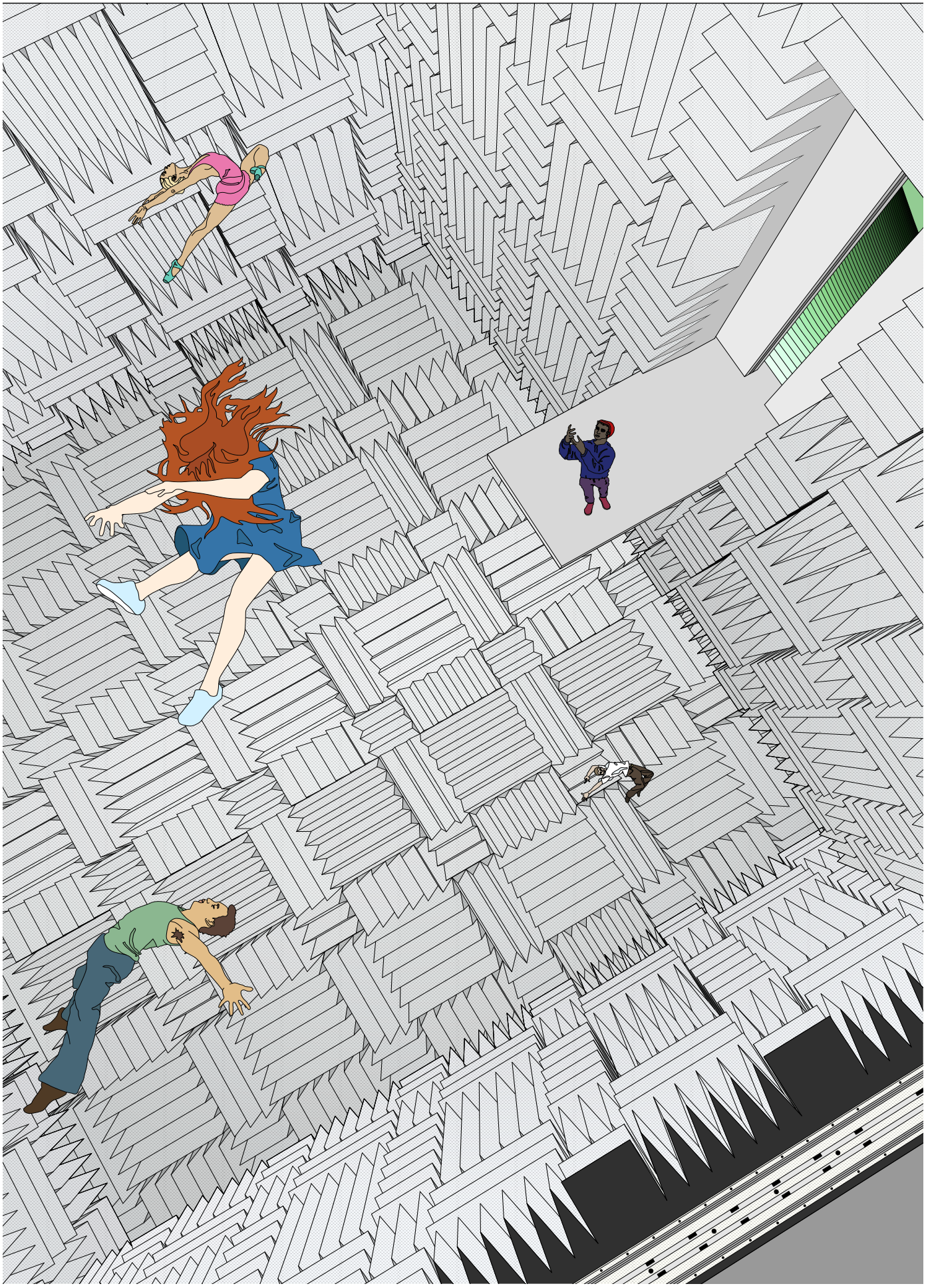
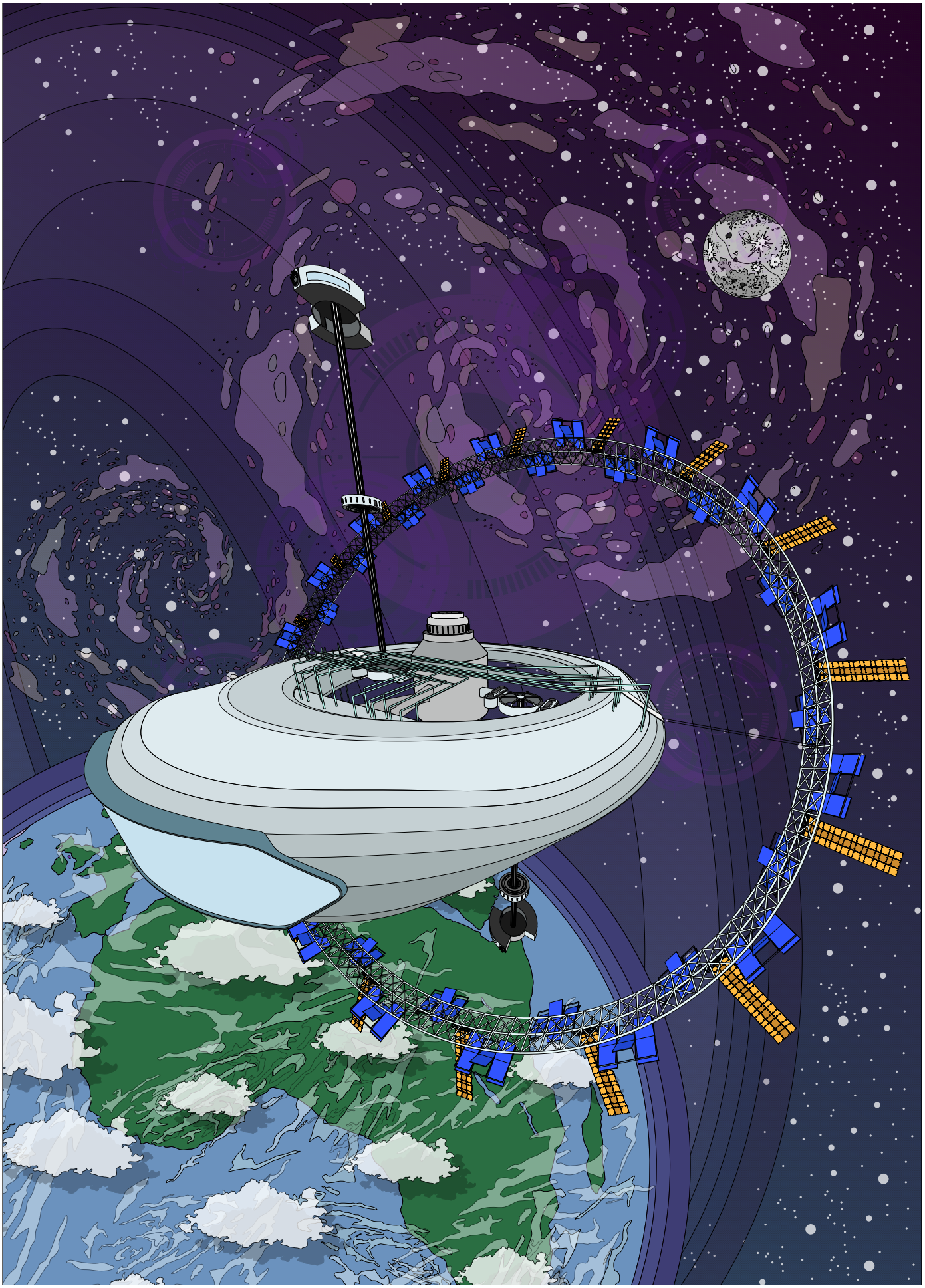
Drawing Status:	Section
Designed by:	AvH
Scale:	1:1000 @A2

SECTION

FINAL ILLUSTRATIONS







ΔI

ARCHITECTURAL REFERENCE

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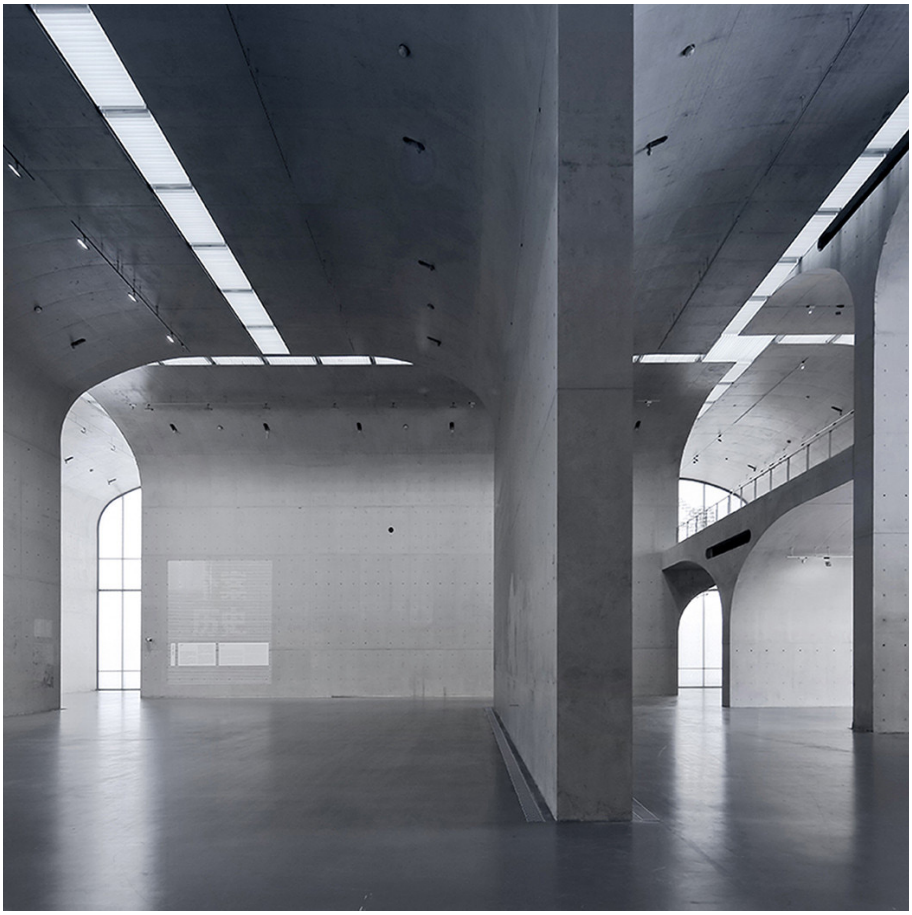
Sancaklar Mosque Istanbul, Turkey

Urbane, 2010
The Al-Irsyad Mosque West Java, Indonesia



Atelier Deshaus, 2014
Long Museum West Bund. Shanghai

Atelier Deshaus, 2014
Long Museum West Bund. Shanghai

CONCLUSION

As my conclusion for this thesis project, I will sum up my discoveries around the space and what the potential relationship between humans and a superintelligence could be, by answering the three questions I proposed in the beginning of this report. I would like to mention again that these outcomes are based on the aftermath scenario I developed for this thesis (egalitarian utopia, protector god and enslaved god). If other scenarios were to be picked then a the outcome would be of a different result.

I will explore the idea of what would happen when or if we were surpassed by a more intelligent being?

As this report states, there are several potential outcomes of what could happen if we were surpassed by a more intelligent being. It all depends on how much we prepare ourselves ahead and knowing which goal to give this AI before we aim to create it. When this will happen I can not answer, but I believe that if we want to create something that thinks and acts in a similar way to us humans, then we need to acquire more understanding of ourselves and how we work. During a discussion with Klas Nilsson, teacher at Lund University LTH, he asked me if I could explain how we come up with our imagination.[13] I couldn't, due to the simple fact, that I have no clue how we do it. By solving things like this and understanding how we work, then we might be able to gain more insight on how to develop the next superintelligence.

How would the relationship between us and Artificial Intelligence be?

In my scenario I see the relationship as peaceful and coexisting. We have control of the AI to ensure that human existence continues in our best interest. Looking back at Homo sapiens history, we have the tendency to praise a power which supersedes us, therefore from my research, I drew the conclusion that humans would begin to perceive the AI as a new doctrine.

What type of architecture would come to exist in a space where the two parts meet?

During the interface between humans and Artificial Intelligence the main focus would be the four main spaces: purpose, prepare, mind and reboot. I have developed the design form out of the human perspective, making the space a sacred place. The architectural language for the project has drawn inspiration from already existing sacred buildings throughout history. The design parameters: monumental, symbolic, and symmetrical were developed from this research then the remaining centrepoint in focus and zero gravity architecture were applied from the site analysis making these four rooms unique with their attributes.

[13] Klas Nilsson, Dept of Computer Science, Lund University LTH, in discussion about artificial intelligence, February 2018.

REFLECTION

When I set off with this project, I have to admit, that I did not know where I would end up. I read the books of Yuval Noah Harari, Sapiens and Homo Deus and got really inspired of what could happen in the future. This later led me to try to turn this topic into an architectural thesis project. I wanted to work with something personal that I found interesting and could make into my personal project, but it was a bit of a struggle. I had no idea about how much research is currently going on today around Artificial Intelligence. Therefore, I had to research everything I could get my hands on, to understand the most basic terms of the concept and then go deeper into how this would actually work. I decided early on that I wanted to make this project somewhat realistic. What I have attempted to do, is to base all my research on already existing facts and discoveries and then I tried to see a bit further into the future to envision what these discoveries could become. During my research I stumbled upon Max Tegmark's book Life 3.0, which in my eyes was a miracle!!! The topic had just recently been published in the shape of a book, and the content helped me a lot to gain a perspective of what could happen if we were to create a super intelligence.

During my design process I battled with finding the right site, it was a bit back and forth, but I ended up with low orbit. It seemed most suitable for my project and I needed a unique site. Thereafter, adjusting to design a 360 degree architecture drove me nuts. I began to design the spaces as if they were on Earth's ground, but with some imagination, I came up with the gravity capsule. This device could make me control gravity and give each space the qualities I desired.

Overall I am really happy that I choose to work with this, because even though it was a lot of work, I am happy to share my view of how I would like an Artificial Intelligence to be brought into our world. I also think it would be really interesting to do this project again, but then change the aftermath scenarios and see how different the end-result would be.

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Footnotes

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[13] Klas Nilsson, Dept of Computer Science, Lund University LTH, in discussion about artificial intelligence, February 2018.

Image
fig. 1. Dave Rawlinson, *Cat*, [website] http://blog.agi.io/2015/05/consciousness-free-will-elephants-in.html, (accessed 23 January 2018).

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Her (2013)

Transcendence (2014)

Ex Machina (2014)

Chappie (2015)

Blade Runner 2049 (2017)

Altered Carbon (2018-)