

music for a building for music

Public Building: MUSIC MARVEL

Music & Popular Culture Re-Wired
AR3AP100 MSc3/4 2021-22

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THE IDEA OF THE MUSIC MARVEL - THE CHALLENGE & THE POTENTIAL

"The morphological, urban, architectural and civil wealth of a city is that of its collective spaces (...) Public spaces absorbed by particular uses, or private spaces that acquire a collective use." (Solà-Morales,1992)¹

Furtherly, with the successful opening of the new musical venue in The Hague, Amare, that happened this year, the necessity for large, strictly musical spaces that provide services and rooms for various performances and private sessions at the same time or large pre-organized public events is minimized. There is no need of another such grand venue, especially in the non-central location as is the Binckhorst.

This space needs to be an adaptable, modest-sized marvel that occupies just enough area that can suit every type of performance, one at the time, and no more than that in order to maintain its efficiency and sustainability. One space for at least 100 members of the philharmonic orchestra, an opera theatre, a dance performance, a rock band, a DJ event, a dance class group etc. All of these types of performance have mostly different technical and acoustic demands of the surrounding space. For that reason, this place must transform accordingly and value every performance equally.

Perusing transformability in venue design permits savings both in budget and space, and is a tempting idea that can hardly be considered new. Many venues have included elegant solutions that achieve this type of adaptability and create a moving hybrid building that changes in service of its users. However, such constrained movement, although often highlighted as technically remarkable, plays little part in the architectural expression and monumentality, and does not live conjointly with the attitude or the experience anticipated within the boundaries of musical buildings.

Rather than being just a system of preprogramed functions and an innovation in engineering, should not every building also try to maintain the conversation with the public in the form of ephemeral monumentality that leaves a fleeting but distinctive experience for each individual?

UNDERSTANDING THE LOCATION: THE BINCKHORST

The Binckhorst, a former industrial area of The Hague, is being readapted into the mix-use development defined in an urban plan adopted in 2009. According to this plan, the area will attempt to appropriate a new character that would benefit the new high-density, luxurious residential architecture. The plan however does not cover any new cultural content and is thus threatening the previously settled, 'street' and urban culture responsible for the prevailing vibrant energy.

The ambition of this project is to provide a potential solution to this threat by presenting a cultural beacon, a MUSIC MARVEL, that will neutralize the predominant image of mass-capitalist investments in the area.

The Binckhorst currently consists of patches of land occupied by remaining industrial buildings, some readapted and some not, well connected with streets that support heavy traffic. The area is surrounded by water on most sides which allows another type of transportation and could be considered the most important visual attribute of the site. Coverage with greenery is poor but is being resolved as the realization of the adopted urban plan continues. The current state of the area seems very inviting to any architect that contemplates on further development in any part of the Binckhorsts, setting up little restrictions due to the inexistent coherence in context of historical value.

MUSIC MARVEL - A TRANSFORMABLE SPACE

To understand the maximal potential that the MUSIC MARVEL may achieve, one must first take into consideration the social expectations as well as the physical realm that primarily determine the core purpose of the building. This means, that reflection on social constitution of the Binckhorst presents the first factor in the definition of the venue.

New residential developments that are starting to assume their presence in the area promise a dense population of 'high-class' residents, as is described in multiple advertising presentations. However, that change will hardly affect the previously established lifestyle encouraged by new businesses that have taken over old industrial buildings and turned them into inviting affordable places that encourage gathering of young creatives. This dichotomy, along the general diversity in the whole city, is the most important point that proves demand for a collective space that will welcome people of all interests and social groups.

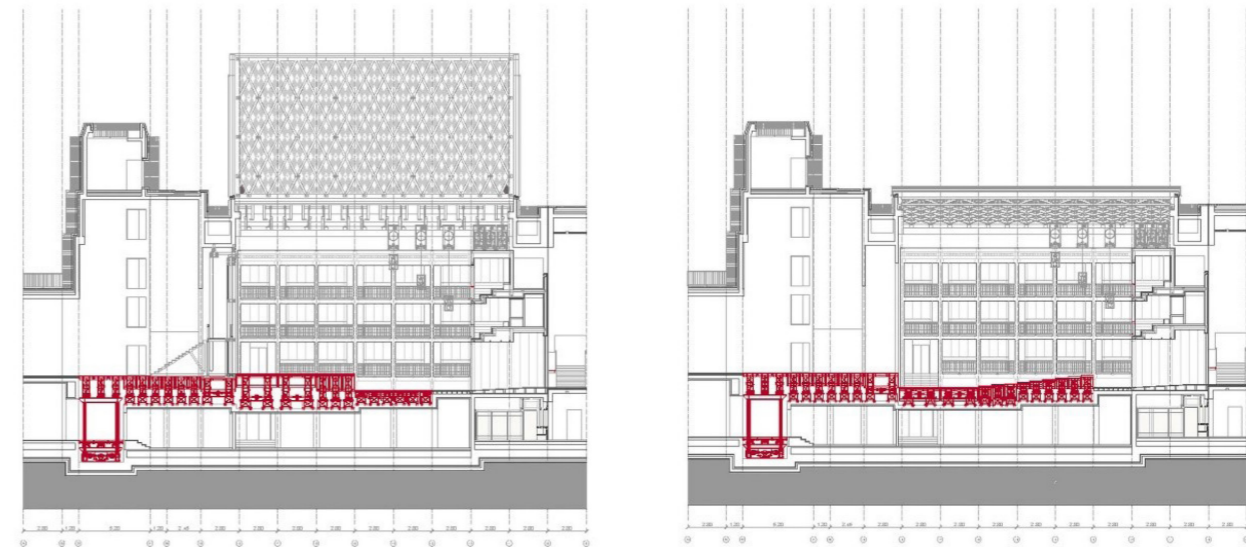


FIGURE 1

FIGURE 1 The Gdask Shakespeare Theatre, the main hall: sections of the Italian configuration (left) and the Elizabethan configuration (right) SOURCE ArchDaily

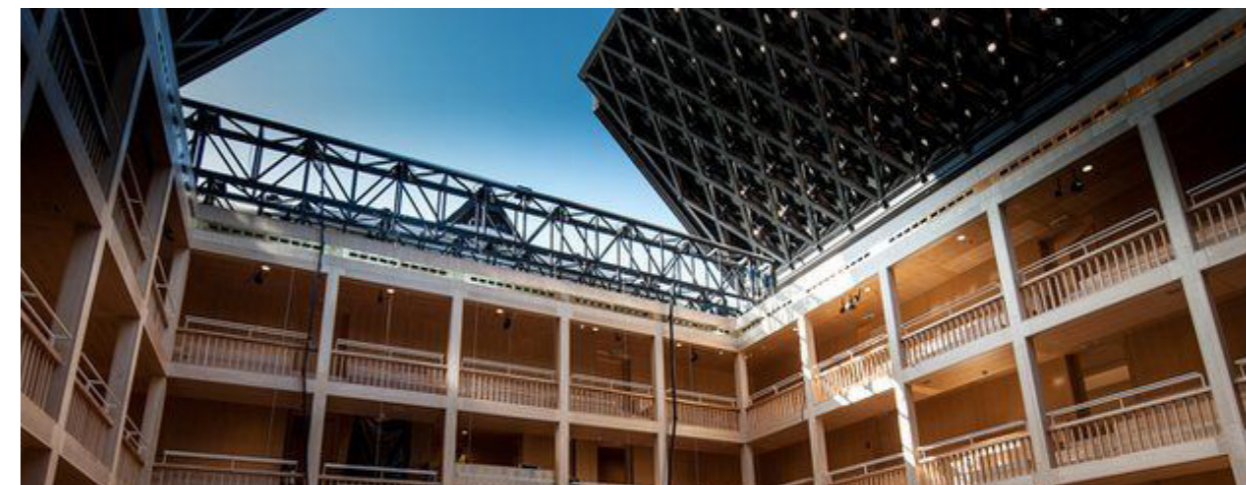


FIGURE 2

FIGURE 2 The Gdask Shakespeare Theatre, the main hall: Retractable roof SOURCE BBC

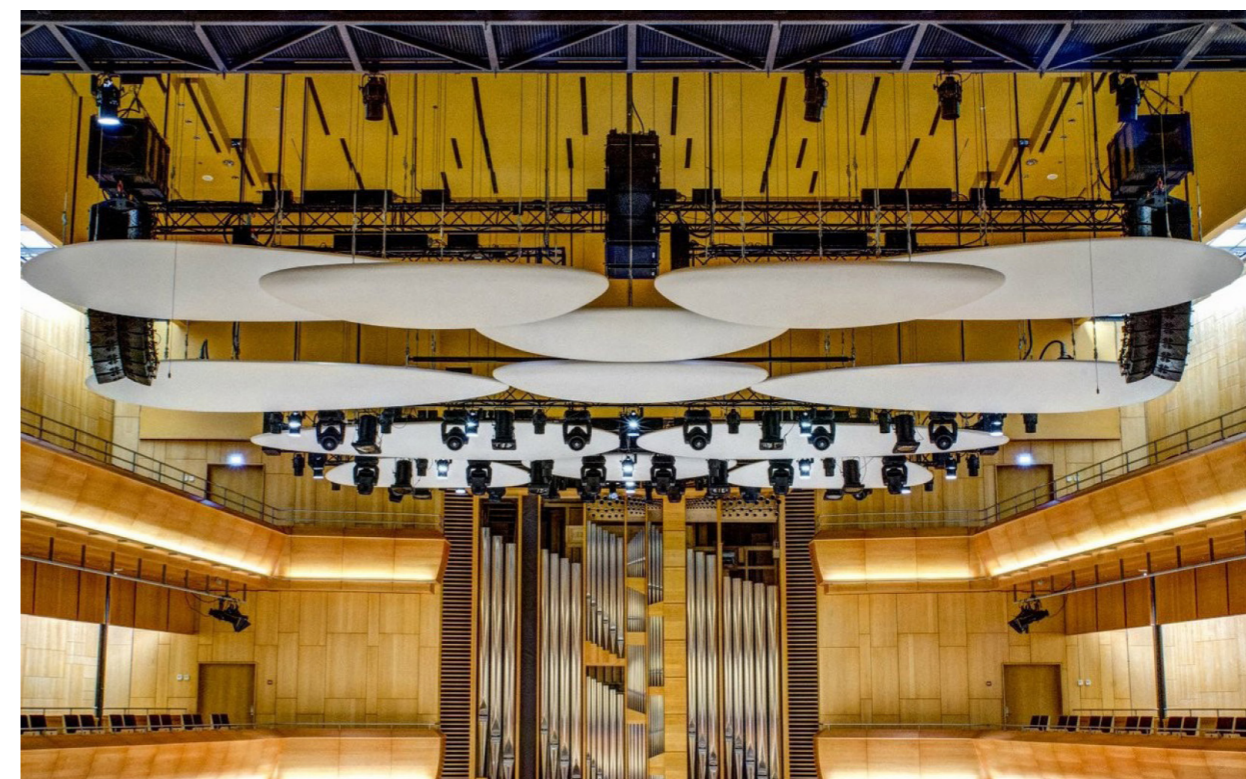


FIGURE 3

FIGURE 3 Stavanger Concert Hall, Movable acoustic ceiling elements in SOURCE Waagner Biro Stage Systems

¹ Solà-Morales, M. d. (1992). Public Spaces, Collective spaces. Barcelona: La Vanguardia.

ARCHITECTURE FOR ALL, ARCHITECTURE FOREVER

MONUMENTALITY TODAY

"Architecture should speak of its time and place, but yearn for timelessness." - Frank Gehry²

Almost the entirety of architectural profession seeks some sort of timelessness. A lasting individual accomplishment that would change, not necessarily just the profession itself, but even more confidently, the habits of contemporary living, problems caused by ever-growing financial differences, overpopulation or some other similarly pressing and monstrous social issue. If not, then it seeks beauty, acceptance in the world of art and recognition as future heritage. In both ways, architecture craves the status of monumentality.

The only obstacle in this process, that would lead an architect to glory, is that today we are less and less certain of what monumentality stands for. The famished regime of the modern world that inspires daily technological breakthroughs for the sake of expanding capitalism almost completely neglects encouragement of societal values and creates global confusion about ultimate beliefs.

This "disenchantment of the world" (Weber, 1917)³, as described by Max Weber, is one of the reasons why it has become hard to imagine a single architectural piece, that holds value, that is not historic, to all observers. In a time of this much cultural diversity, one space can only be meaningful to all if it somehow simultaneously

answers to all individual personalities. Architects have to abandon the habit of designing according their own intuition or according to subjective preferences with ambition of glorifying a part of their ego in the process. Instead, in order to create a place equally important to all bystanders, an architect should generate a technique that includes and depends on all in a way consistent to the values of each individual.

PERCEPTION AND EXPERIENCE

Everything that we perceive is a target to our reflection and consequently a trigger to our behaviour. The pavement, the birds, other people, colors and movement just as much as architecture that we experience, are the unavoidable stimuli that we experience daily. Most of this stimuli are subject of our posteriori knowledge, as defined by Kant, being just a variation of the previously experienced realities. However, we often find ourselves in anticipation of a priori knowledge, new findings. Axiological cognition of these occurrences allows us to interpret them as pleasurable surprises which explains the human desire of exposing oneself to new music, performance, architecture or overall – new art.

"Music can be experienced as pleasurable both when it fulfils and violates expectations. The more unexpected the events in music, the more surprising is the musical experience." (Gebauer, Kringelbach, & Vuust, 2012)⁴

This sensation, found in exposure to music, will definitely not be absent in a musical building, however, as a result of its program rather than of its architecture. Having in mind the aforementioned ambition of the MUSIC MARVEL towards acquiring the identity of an ever-changing architectural monument, this space must also hold a similar predisposition to provide surprising experiences.

In addition to being adaptable, modest in size, monumental and of lasting value for all, sustainable and efficient, the MUSIC MARVEL must be 'alive'!

THE LIVING MARVEL - A TEMPLE OF EXPERIENCES

CREATING FOR ALL MINDS AT ONCE

Always has architecture been a reflection of the ongoing societal condition. We are currently experiencing a society that shifts between reality and virtuality and due to our acclimatization to the dual world the border seems to be fading. Human wellbeing now depends on the tangible world as much as it does on the simulated unreality which has become an inseparable part of how we experience our surroundings. Perception of the physical plane has become dependent on its concurrent understanding in the virtual environment of social media, augmented reality or new technologies that in any way enhance our experience. This new human ability has made us even more estranged now that every individuals' comprehensions are more tightly associated with preferred virtual trends than with the shared physical environment that we co-exist in. Architecture can no longer account on geo-cultural similarities in human recognition of value and must tend to every human individually.

To create a space for a modern human, we must understand their needs and expectations, system of valorisation, ambitions, fears etc. To create a collective space for a modern society we must understand the same set of traits for each individual separately. Even if all this information could be assimilated in whole, it would soon be out-dated due to the changing human nature and all attempts of creating a worthy space would be ill-fated.

This 'data' world leaves no time for philosophical decoding of personalities, yet urges for a mechanism that would, as envisioned by Toyo Ito, "build fictional and ephemeral architecture as a permanent entity" (Ito, 1992)⁵. Such entity that communicates with the passer-by and, in the same time, creates an analogy of their wavering experience. A personification through a function that corresponds to all aforementioned ambitions of the MUSIC MARVEL

DECODING BRAIN ACTIVITY

The perceived world must be reflected somewhere within the brain as a pattern of brain activity. Different parts of the brain reflect different types of information related to what we are currently experiencing mixed with our biased thoughts and private feelings. Because our brains work as nonlinear dynamical systems that rely on firing of interconnected synapses, all activity can be detected in form of brainwaves. Brainwaves that are in direct correspondence with the stimuli in the outside world. That means that our brains in the moment of new experiences produce content that can be described as private and personal duplicate of the outside world.

If, with aid of now widely accessible EEG (electroencephalography) technology, we aim to extract these brain activities we could form a collection of an individual's reactions to a certain stimulus without having to philosophically ponder on its deciphering. Extracted brainwaves could be used as input data in the formation of an algorithm that would create a mechanism that reacts to every (or all) individual(s).

There are five types of brain waves, each linked to different types of brain activity and all of those types would be present within a person that is experiencing a space for the first time. Imagine that instead of appropriating the space based on the examination of the observer's primary experiences we extract their brain activity and translate it into data that affects the surroundings in real time. In this way we would be able to create the ephemeral effect that only correlates to the coexisting brain activities of the observers and stops existing as soon as the activities change.

All waves are time series that span a range of frequencies, this makes all waves easily comparable and translated. The sincerest way of communication between the MUSIC MARVEL and its attendees is a dialogue in music. People come to musical venues with a goal of reacting to the music that the venues provide. This happens during the time of performer activity. However, when the performers are not active, the venues remain silent. This is where the MUSIC MARVEL differs from other venues. Moments without performer activity shift the spotlight towards the audience that subconsciously creates music through their experience of the building. A primary experience (stimulus 0) affects brain activity of each individual in a way original to their reasoning, that is then extracted in the form of brainwaves and translated into soundwaves that are emitted within the building. This creates a new experience (stimulus 1) that affects everyone in a similar fashion and so the process persists. New experiences (stimulus 2, 3, 4 etc.) are formed and the dialogue between the building and the people inside it is continuous and unpredictable, making the building an ever-changing living entity (Figure 5).

In this manner it will be possible to create **music for a building for music**. A never-ending circle between the architecture and its purpose.

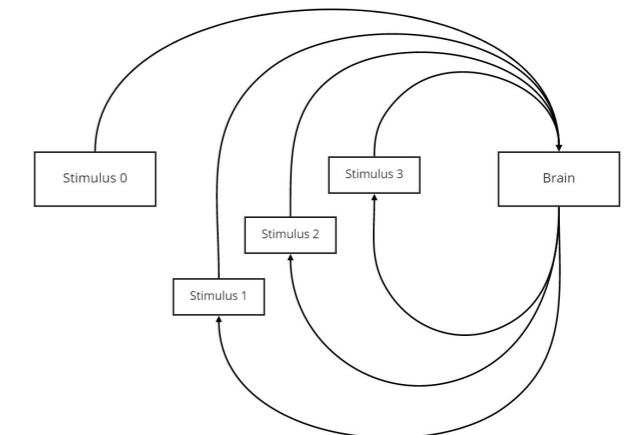


FIGURE 5



FIGURE 4

⁵ Ito, T. (1992). Architecture in a Simulated City. London: New Prairie Press.

FIGURE 5 The loop of simulation in the MUSIC MARVEL - relationship between the stimuli and the brain

⁶ Boulanger, R. (2015). personal communication, Berklee College of Music

FIGURE 6 Dr. Richard Boulanger composing music using soundwaves produced from his own brain activity, Berkeley College of Music
SOURCE Boulanger Labs

FIGURE 7 Brainpalace by Christian Losert, artistic installation that reacts to neural feedback
SOURCE Christian Losert

FIGURE 8 The loop of simulation in the MUSIC MARVEL - relationship between the stimuli and the brain (spatial presentation)

FIGURE 9 Correlating brain activity and sound waves

FIGURE 10 Correlating brain activity and room behavior

FIGURE 11 Influence on the performance hall through brain activity

"The big question is - when will we be in an age where the thoughts in my mind or the music in my mind translates directly to" - Dr. Richard Boulanger⁶

Current technologies allow us to play recorded brainwaves as audio files. However, those sounds are nothing more than unpredictable noises. If intended for space enriching purposes, these noises should depend greatly on their artistic interpretation and organized combination, perhaps with parallel consideration of musical theory, in order to achieve the desired musical effect.

AIMING TOWARDS THE LIMITLESS WORLD

Architecture that mutates in response to the neurological feedback depends on the latest advancements of the equipment that is used for brain activity decoding. In order to stay relevant over time, it must account for technological improvements that can be incorporated into the system when available.

Neurological architecture is a real time interpretation of the surrounding world perceived by humans. The specific idea behind the MUSIC MARVEL is revolving around sound inputs and outputs but it also inspires

imagination that questions limits until which neurological decoding may affect the world around us. A predictable next step would be further influence on the interior as well as the exterior of the building (Figure 8 – 11). This could later indicate possibilities of affecting the buildings surroundings and communication between buildings through the language of telepathy between their users. Consequently, it could even inspire a new form of digitalization through such communication and a creation of not only living entities within the cityscape, but also a city-organism consisted of interdependent parts that, actually, presents its citizens.

In another direction, neurological architecture might affect the way we see other forms of design. The introduction of EEG equipment to our everyday lives, that permits us to reserve relevance in the world of neurological architecture, could cause revolutionary tendencies in fashion design. Or influence other industries that would adapt their products and markets towards the new collective habits.

The creation of this mechanism that enables living architecture could influence a formation of a different world.



FIGURE 6



FIGURE 7

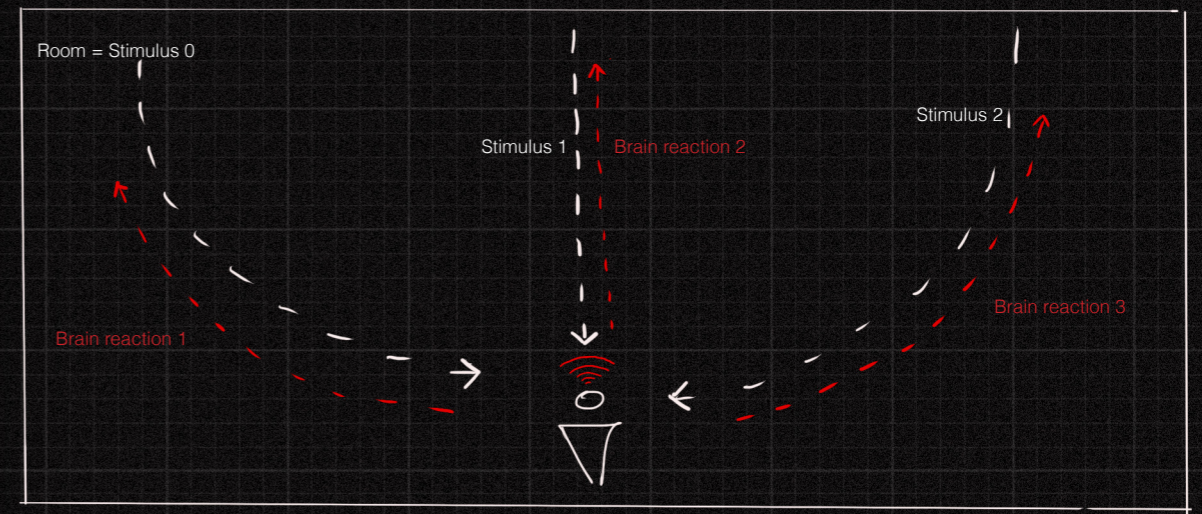


FIGURE 8

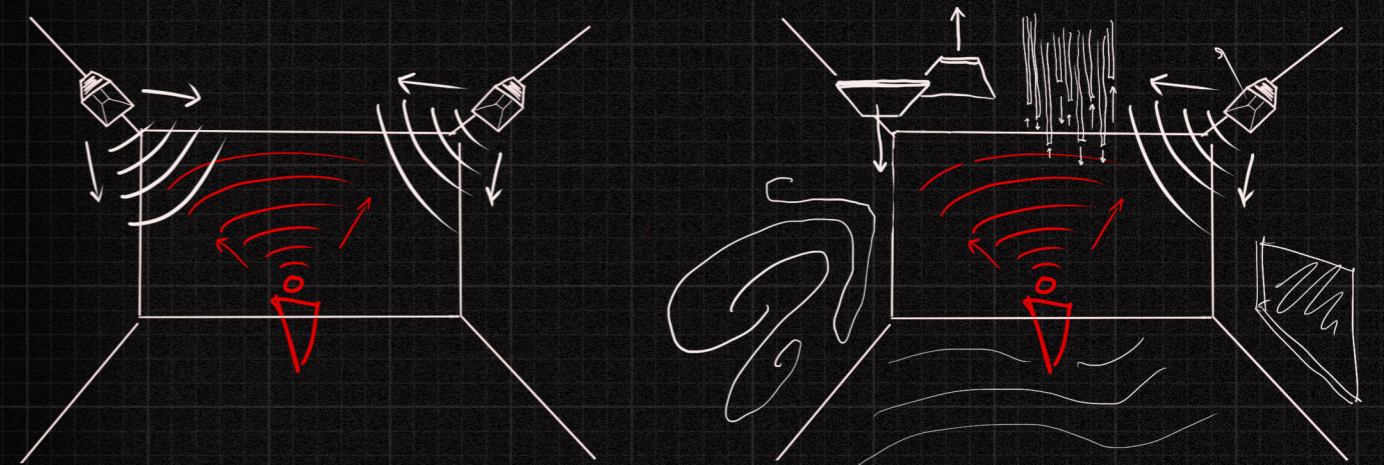


FIGURE 9

FIGURE 10

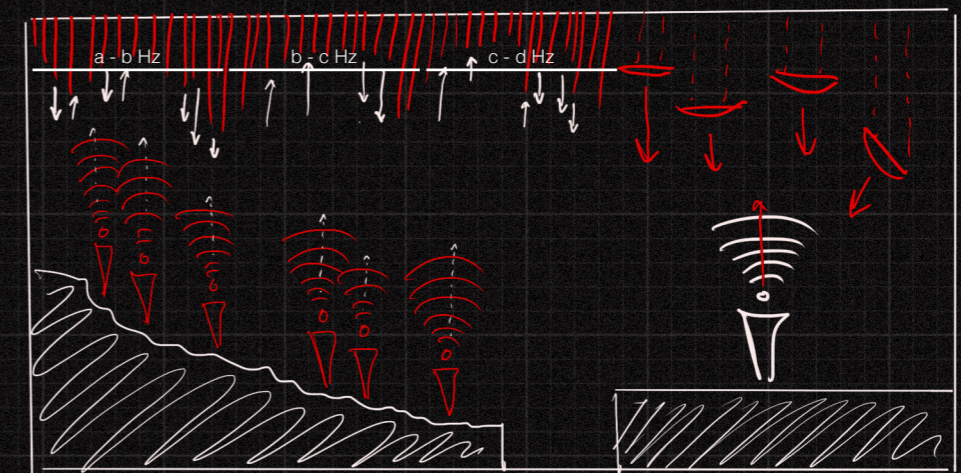


FIGURE 11

Research plan by
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