

Final Architectural Design Studio



# Design of Smart Hybrid Creative Space.

WITH ENVIRONMENTAL PSYCHOLOGY APPROACH LOCATED IN PONTIANAK CITY



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## Validation Sheet

Bachelor Final Project Entitled:

**Design of Smart Hybrid Creative Space**

with Environmental Psychology Approach on Pontianak City, West Kalimantan, Indonesia.

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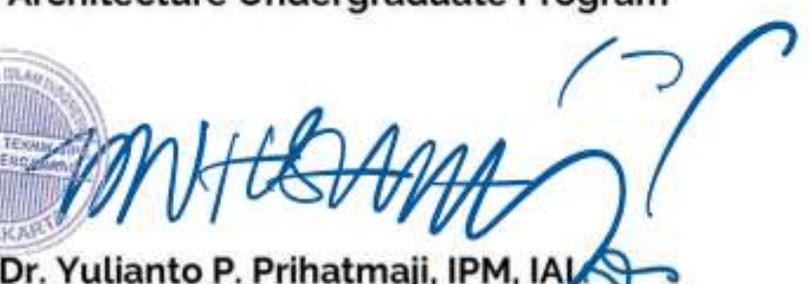
  
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## Statement of Authenticity

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By signing this form, I

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University : **Universitas Islam Indonesia**  
Title : **Smart Hybrid Creative Space with Environmental Psychology Approach**

Herein, I declare the originality of thesis; I have not presented anyone else's work to obtain my university degree, nor have I presented anyone else's words, idea, or expression without acknowledgement. All quotation are cited and listed in the bibliography of the thesis. If in the future this thesis statement is proven false, I am willing to accept any sanction complying with the determined regulation or its consequence.

Yogyakarta, 12 July 2021



**Ravida Maulidina**

## Acknowledgement

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Praise and deep gratitude to Allah SWT for the abundance of grace, and guidance of Him given to the writer that made this thesis can be completed properly. Greetings and salawat may always be devoted to the Prophet Muhammad SAW.

The design project entitled "Smart Hybrid Creative Space with Environmental Psychology Approach" located in Pontianak, West Kalimantan, Indonesia. This is to meet one of the conditions and completed studies in order to obtained a Bachelor of Education Degree Course in the Department of Architecture, Faculty of Civil Engineering and Planning, Universitas Islam Indonesia.



# Abstract

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In March 2020, the World Health Organization officially announced the COVID-19 outbreak as a global Pandemic (WHO, 2020). The first step from the government to respond to this issue is by holding a local lockdown in their area. People are prohibited from leaving their house and required to do all of their activities inside their house. These new habits and activities of course lead to the changes in the functions and requirements of space including to the one of public space, Co-Working space. Most people either students or workers are doing their activity inside their room because their school and office has been closed until further notice. Not a few students who study or have migrated to complete their education outside the city must remain at their home. Their habits are also carried over to their respective cities, such as working on outside tasks such as co-working spaces. The city of Pontianak is arguably the lack of a platform to support student activities in a conducive atmosphere. The emergence of contradictions in Covid-19 pandemic by optimizing benefits so that the desired design results are not maximum. Whereas what is desired is that the negative aspects are lost without reducing the improving parameters, to do so there is a thought approach called TRIZ (Theory of Inventive Problem Solving). TRIZ focuses on solving contradictory problems / solutions. TRIZ provides tools to reduce worsening parameters without eliminating or reducing the improving parameters (Zhang, Tan, & Chai, 2003).

**Keyword:** Post-Covid Design, Creative Space, Environmental Psychology, TRIZ.



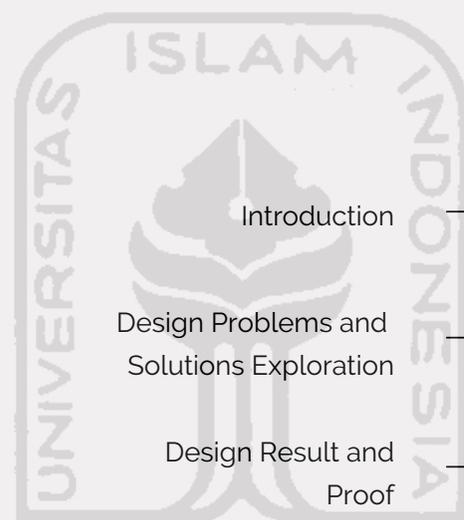
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# Design Premise

This theme was taken because it will be useful in the future for writers and people in need. This final project will provide the final results of the guidelines in the design of the library and creative space with an environmental psychology approach. This design is expected to be a place for people to create and share their ideas with a supportive atmosphere due to the lack of creative space in the Pontianak City.



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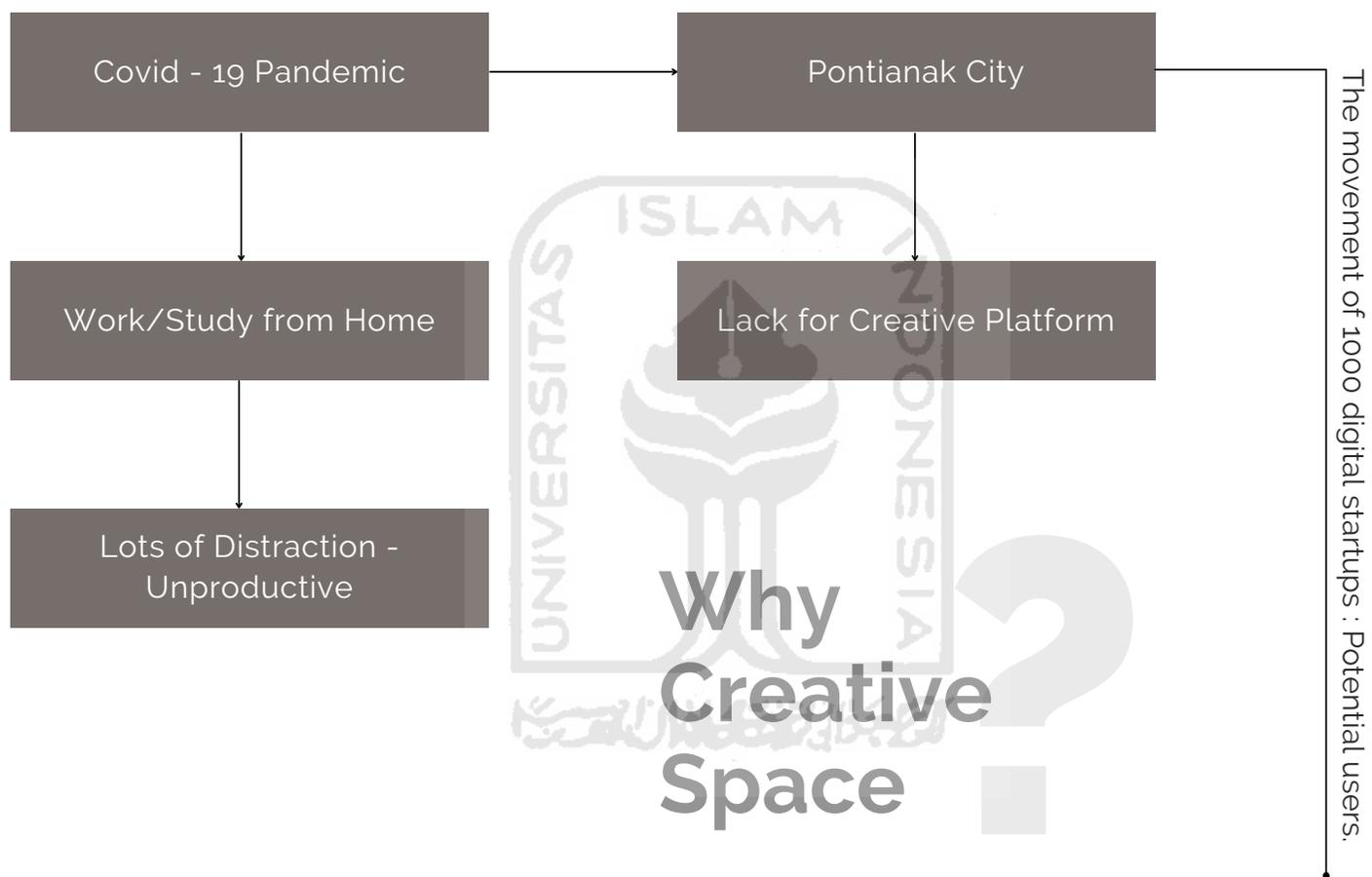


# Background.

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## Why?

In early 2020, the world has been shocked by a new virus which spreads very fast and has been worldwide. Various attempts and efforts have been made to cope with the virus and simply reduce its spread or transmission. Half of the world's population has been asked to stay at home or restrict movement in public (Sandford, 2020). Unfortunately, the virus has not yet subsided and because of the current pandemic situation, so far, many changes have occurred, such as changes in human habits and activities. Most people either students or workers are doing their activity inside their room because their school and office has been closed until further notice. Not a few students who study or have migrated to complete their education outside the city must remain at their home. Their habits are also carried over to their respective cities, such as working on outside tasks such as co-working spaces. The city of Pontianak is arguably the lack of a platform to support student activities in a conducive atmosphere. Also from the quick survey, most of the people here simply need creative space to support their work and activities.



# Problem Formulation

**1.**

How to design a library and creative space that is suitable for the present and for the future responding to this pandemic situation?

**2.**

How to design a library and creative space that is appropriate and comfortable according to people's habits and needs with a good-working atmosphere?



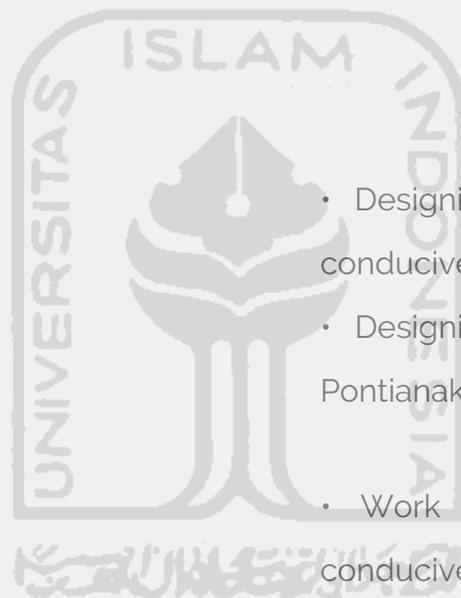
# Goals and Objectives

## Goals

- Designing work and study spaces that are conducive for society to work in.
- Designing a platform for creative actors in Pontianak City.

## Objectives

- Work and study spaces design that are conducive enough to work in and are expected to increase user productivity considering the covid-19 pandemic situation.
- Design a creative platform that could respond during and post-covid situation.



ISSUES

Pontianak was chosen as the city to be held the movement of 1000 startups but still lack of creative platform.

COVID - 19 pandemic affects through human daily life.: Less conducive atmosphere at home for work or study during the pandemic.

ARCHITECTURAL PROBLEM

Providing creative platform,



Creative Space

Applying environmental psychology approach yet keep paying attention to the covid - 19 health protocols



Environmental Psychology

HIPOTHESIS

Creative space design located in Pontianak that could enhance people's productivity yet as a platform for creative actors but could respond to the current pandemic situation by reduce the transmission of the covid - 19 virus.

Picture 1.1.1 Map of Issue

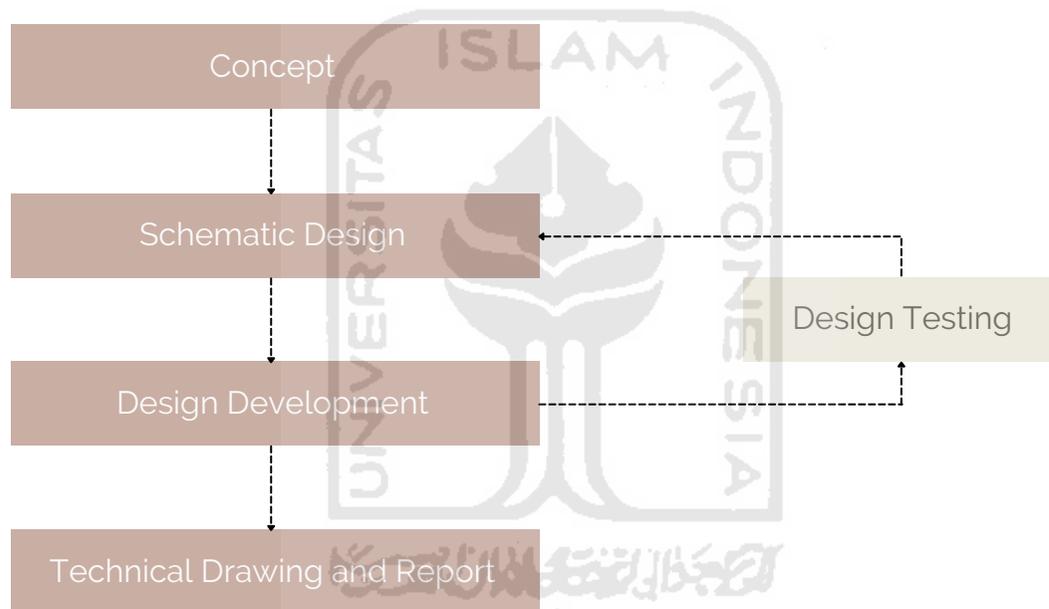
Source: Author, 2021

OBJECT	Creative Space Design in Pontianak City with Environmental Psychology Approach		
STUDIES	Creative Space	Environmental Psychology	Post - Covid Design
ARCHITECTURAL ASPECT	Typology Space Organization	Zoning / Plotting Atmosphere	Circulation Spatial Design
PROBLEM	How to design a library and creative space responding to the current pandemic situation by renewing the old typology?	How to design a library and creative space that is appropriate and comfortable according to people's habits and needs with a good-working atmosphere?	How to design a library and creative space that is suitable for the present and for the future responding to this pandemic situation?
CONTRADICTION	If a library and creative platform are built using environmental psychology approach	Then it could be a platform that could increase productivity yet serve more conductive area for people to work in.	But the number of covid - 19 transmission could getting higher and increasing.
TRIZ METHOD	22 : Blessing in Disguise 33 : Parameter Change 24 : Intermediary		33 : Parameter Change 2 : Taking Out 39 : Inert Environment

Picture 1.1.2 Design Thinking Framework

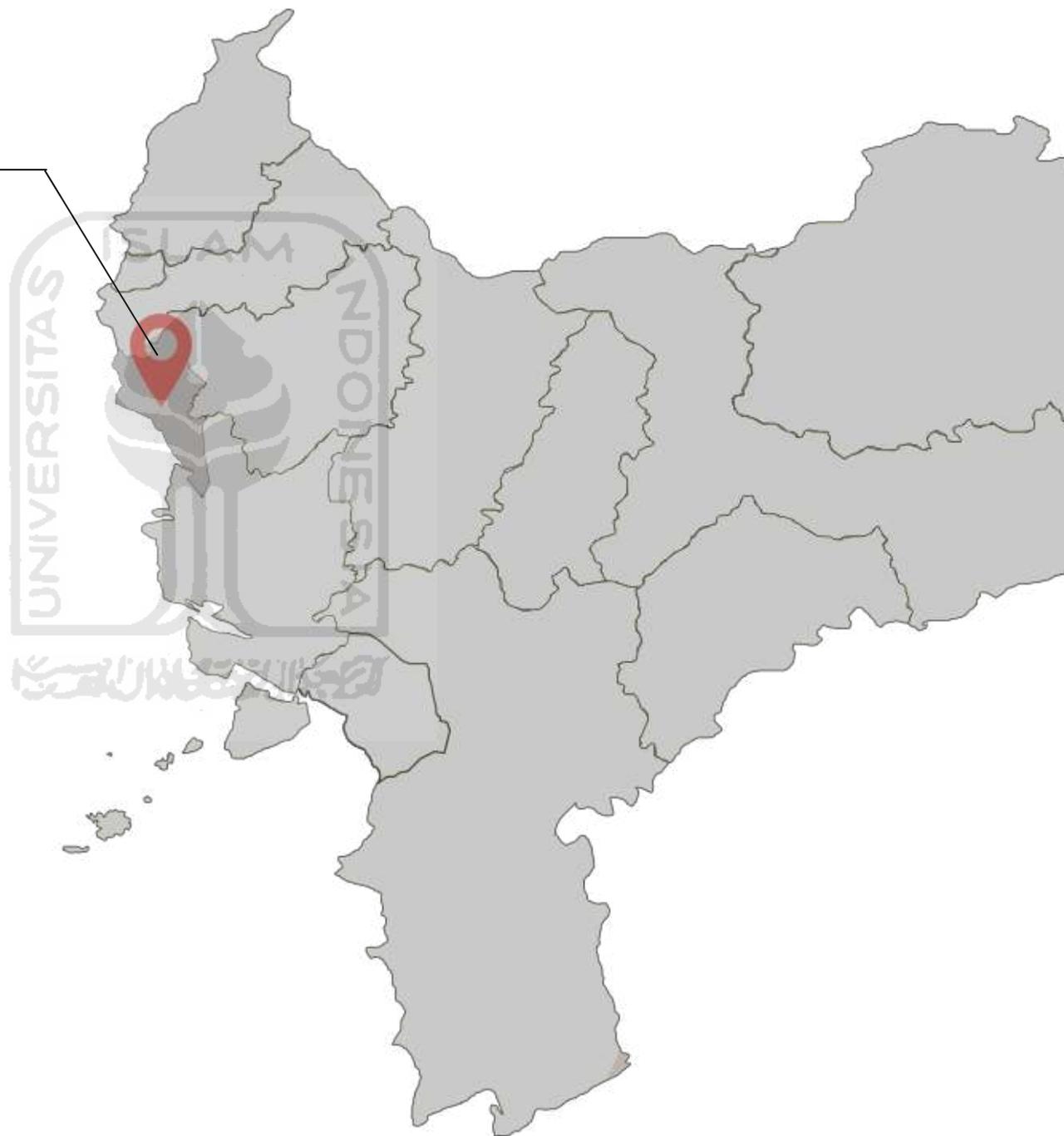
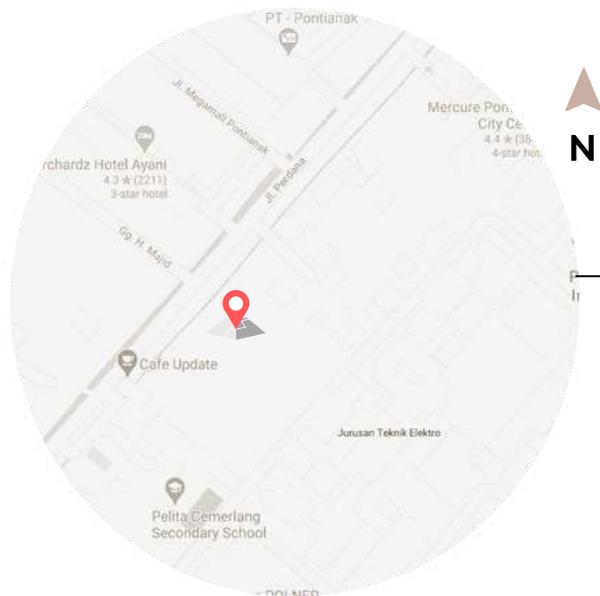
Source: Author, 2020

DESIGN RPODUCT





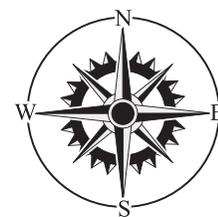
Located in a city center,  
strategic enough - close to the  
education and commercial area.



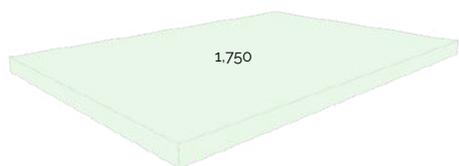
### Site Address

Perdana Street, Bansir Laut, Kec. Pontianak  
Tenggara, Kota Pontianak, Kalimantan Barat  
78115

# Proposed Site Location

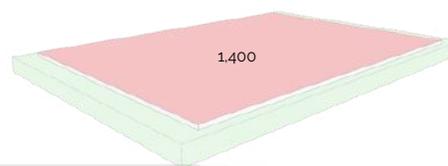


**Site Total Area**



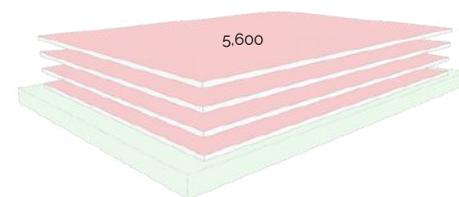
1,750 m<sup>2</sup>

**BCR**

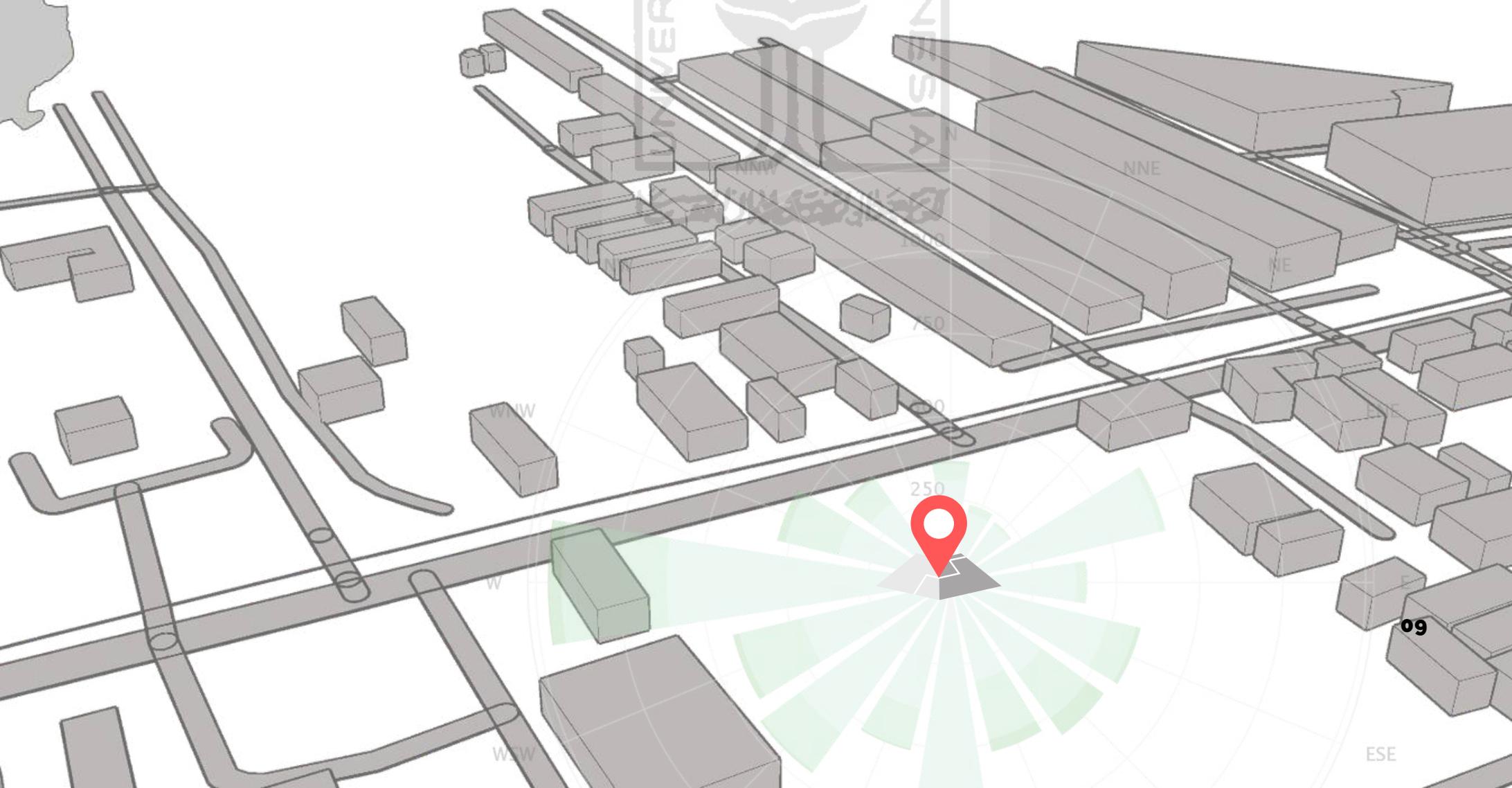


BCR : 80%  
80% \* 1,750  
1,400 m<sup>2</sup>

**FAR**

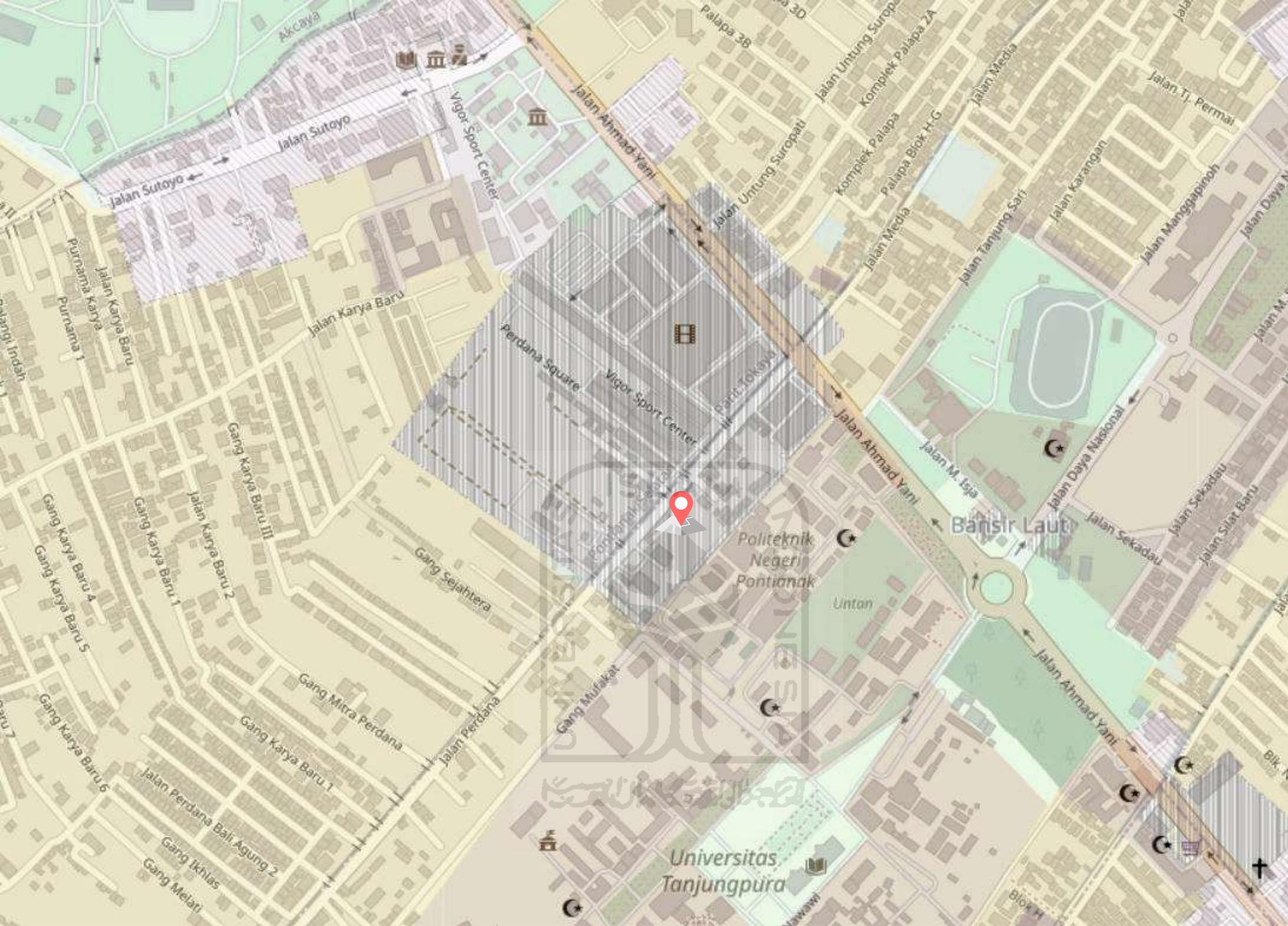


FAR : 3.2  
3.2 \* 1,750  
5,600 m<sup>2</sup>



# Site and Surrounding





Residentials



Schools / Universities



Open Green Area



Commercials

# Literature Review: Relationship between Space and Human Behaviour

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Public life studies often count people in streets, parks or squares in order to assess use patterns and evaluate how the site is functioning (Gehl 2013, Anderson et al. 2018, City of Vancouver 2018, Akaltin et al. 2019). According to Gifford (1997, cit. in Gunther, nd), Environmental Psychology is "the study of transactions between individuals and physical space in which individuals modify the environment and in its turn, behaviour and experience are affected by this". Space is one of the elements of design of architecture, as space is continuously studied for its usage. Architectural designs are created by carving space out of space, creating space out of space, and designing spaces by dividing this space using various tools, such as geometry, colors, and shapes. The space itself is closely related and interrelated with human behaviour. Human behavior habits can have an impact on the space forming and functional aspect. Human behavior can change over time by time. One of the causes of behavior change can also occur due to a pandemic situation. The form and space requirements will change with the aim of fulfilling the needs of the users of the building according to the various activities undertaken.

The basis of planning has to be a vision of public life in the given area. Who are its potential users? What activities would take place in it? What kind of life can develop there?

## Life



## Space



## Buildings



Picture 2.2.1 Human behaviour in life affects to space and building maketh

Source: <https://gehlpeople.com/wpcontent/uploads/2018/05/Life-Space-Buildings-landscape.jpg>

The strategic guidelines of Gehl Architects were selected and applied in the context of studies, workshops, public consultations, lectures and conferences. The road to creating successful spaces begins with putting people first. Different behavior could create different needs. Moreover, the space atmosphere itself could affect through the human psychological aspect as well as how they would act and feel. For example, research has proven that locating a sink within the visible stretch of a hospital corridor can increase the rate of hand washing, and that installing operable windows in a school classroom can reduce sleepiness. It investigates the effects of a certain color of paint on a living room wall and also of the ideal ratio of planted to paved space in a city park.

Jan Gehl theory could define what human's need based on their behaviour. For example, the need for a washing area since the world has been shocked by Covid-19 pandemic that creates new behaviour of improved cleanliness. And the **environmental psychology approach** could create an atmosphere that could affect the human body and mind. For example, creating a space that could increase people's productivity.

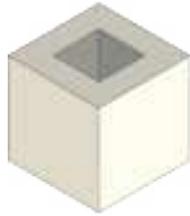
# Literature Review: Creative Space Typology

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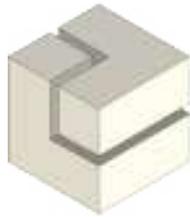
We distinguish 5 types of creative space. (1) A personal space where you can work or study alone. (2) A common space for work or study with colleagues, classmates or teachers. (3) Presentation space for giving presentations, attending meetings and exhibiting or reviewing examples of creative works. (4) A production space where people can experiment and try things, make things and make sounds. A fifth type can be seen from the data: Pause spaces for transition and recreation (5) This category is not intended for creative design work, but connects other types of spaces such as hallways, dining rooms, exteriors, etc. Includes spaces that provide space for These five domain types cover all existing spaces in the organization being analyzed.

We have identified another category called "spatial quality" that is orthogonal to the type of space. This is the ability of space to facilitate a particular purpose, apart from the type of space. We distinguish between the five characteristics of creative space. The given space can be (a) a knowledge processor. (B) It may be an indicator of organizational culture. (C) Providing the right infrastructure can play a role in enabling the process. (D) Can have a social dimension. Or (e) it can be a source of irritation. Quality can have a positive or negative impact on the work process at each process stage, depending on the range and characteristics of the quality and personal preference. Figure 1.2.2 shows the types and characteristics of spaces. Each spatial type and spatial quality is described in detail below, using examples of the institutions being analyzed.

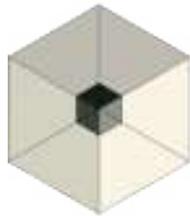
## SPACE TYPE



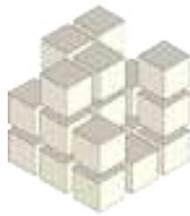
**1. PERSONAL SPACE**  
allows for concentrated 'heads-down' work (thinking, reading, writing), deep work, and reflection; requires reduced stimulation to avoid distraction.



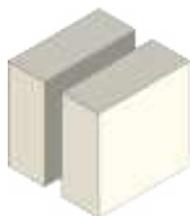
**2. COLLABORATION SPACE**  
is used for group work, workshops, face-to-face discussions, client meetings, or student-teacher consultations.



**3. PRESENTATION SPACE**  
is used to share, present, and consume knowledge, ideas, and work results in a one-directional way (presentations or exhibitions)



**4. MAKING SPACE**  
is used for model making and building; allows experimentation, play, noise, and dirt.



**5. INTERMISSION SPACE**  
connects other space types; is used for breaks, recreation, and transfers; includes hallways, stairs, cafeterias, and outdoor areas.



**A: KNOWLEDGE PROCESSOR**  
space can store, display, and foster the transfer of information and knowledge (tacit, explicit, and embedded knowledge).



**B: INDICATOR OF CULTURE**  
space suggests a specific behavior, either through common sense, written or unwritten rules, rituals, labels, and signs.



**C: PROCESS ENABLER**  
space can provide specific spatial structures or technical infrastructure that might guide or hinder the work process.



**D: SOCIAL DIMENSION**  
space influences social interactions and facilitates meetings and personal exchanges.



**E: SOURCE OF STIMULATION**  
space can provide certain stimuli (views, sounds, smells, textures, materials, etc.).

Picture 2.2.2 Overview of Types and Qualities of Creative Spaces

Source:

<https://www.sciencedirect.com/science/article/abs/pii/S0142694X18300048#:~:text=The%20five%20identified%20space%20types,particular%20design%20and%20learning%20activities.>

### **Personal space**

Just like a monastery, the personal space commonly are using for doing something that is need to have more focus on it (thinking, reflection, meditation) and is usually characterized by a silent atmosphere and a lack of distractions. Newport (2016) coined the term 'deep work' for this kind of working style. People use these spaces for personal 'alone time' and for intense work activities like research, reading, writing, CAD work, or individual ideation.

### **Collaboration space**

A type of creative space that invites people to work together as a team, exchange ideas, and communicate with each other. It features noise, playfulness and team interaction. The floor plan should allow discussion with group work. The space where students and teachers meet for feedback and the space where they meet customers also belong to this category.

### **Making space**

This is the term for a creative space that enables people to experiment, try things and create things. This space is considering experimentation, noise and dust.

### **Presentation space**

Presentation space is the term for a creative space, such as a presentation where people passively consume input (lecturing, etc.) Typically these classroom layouts do not promote (active) teamwork, but do provide exchange of opinions. This type of space also includes passive display of work results and exhibitions (eg showcase models and wall posters).

### **Intermission space**

There were some spaces that could not be classified into one of the 4 area types above. Corridors, outdoor spaces such as parks or parking lots, Mensa student cafes or side streets obviously lack dedicated space for creative work. But still, people have incorporated such spaces into their creative workflows. Such 'break space' was specially characterized by unintentional meetings, casual encounters, and opportunities to take short breaks and reflect on work before. Research activities also extend the scope of creative spaces beyond the building itself.

### **Space as a knowledge processor**

One interesting aspect of space is its ability to act as a knowledge organizer and storage. Information can be stored on shelves (books, materials, notes, pictures, etc.) or on walls (for example, whiteboard sticky notes). The results of previous projects and senior student physics models and other operations (eg posters) can be integrated into knowledge and extracted or used as a source of inspiration. Knowledge is visually expressed and easily accessible to others. As such, the space can facilitate the exchange or generation of knowledge by providing a platform for exhibiting and accessing it.

### **Space as an indicator of culture**

Spaces can serve as indicators of a particular (corporate or organizational) culture. Many spaces express expectations about how users should behave, either included in the layout or based on common sense (for example, knowing that everyone needs to be quiet in the library). Or allow it to make noise in the workplace). Rules created in space can also achieve this goal. It is important to establish a particular culture to prevent misuse or to create an atmosphere of support for creative work and learning purposes. In that sense, spatial culture can support the "affordance" of the space's ability, which indicates how it should be used or behaved (Norman, 1999).

### **Space as a process enabler**

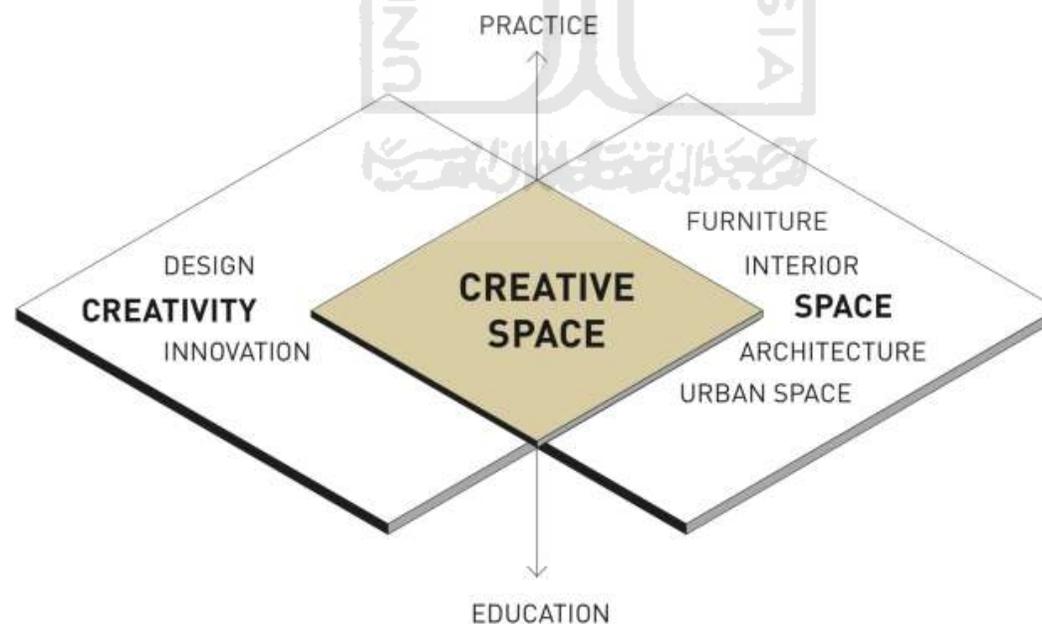
Spaces can force or dictate the behavior of certain phases, primarily depending on the infrastructure they provide. For example, tables and chairs installed on the floor of the auditorium do not allow for collaboration. In that sense, the process enabler is an extension of the 'affordance' of the concept that a space dictates rather than suggests a specific usage and behavior. The flexibility of a space and its furniture is the key to enabling a variety of creative activities. Minimum time The capacity of the space to change from one type to another determines its flexibility and effort. It is also recommended to place different types of spaces side by side or within walking distance to realize a smooth workflow (this can reduce the transition space).

### Space as a social dimension

Social interaction between peers and between students and teachers is an important aspect of creative work. By definition, team spaces are usually designed to enable social interaction. However, rest areas such as cafes and hallways can stumble and have the potential to support information exchange. Key objects such as copiers and water coolers can be strategically placed to facilitate social interaction.

### Space as a source of stimulation

A space can serve as a source of stimulation, providing noise, smell, view, color and texture. By displaying inspirational posters. Or by offering games or gadgets. Even so, the space might provoke creativity by reducing stimulation. The lack of texture and noise can promote creative flow (Csikszentimihalyi 1996). Many participants stated that riding in a train with a calm, non-distracting atmosphere in nature or passing scenery promoted their creative achievements. In addition, stimuli such as loud noises that interfere with concentration can adversely affect creative workflow.



# Literature Review: Four Types of Creative Space

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## **Stimulate : Space for Inspiration**

For most people, it's virtually impossible to come up with a fresh idea all at once. Exciting spaces draw mental energy from the stimulus itself, allowing you to immerse yourself in that world, allowing people to connect with the problem, topic, or consumer they are working on. Humans thrive on mental, emotional, and physical stimulation. Exciting spaces reinforce word messages, attitudes, and values in people through non-verbal means. They elevate the spirit and bind people to a common purpose, appealing to the senses. A word of warning: "Clean desk policy" flies in front of an exciting space. But careful space design and maintaining awareness of space management can maintain a happy balance between stimulus and confusion!

## **Reflect: space to think**

Once the mind has been fed a problem, you need time and space to allow the problem to hatch. Time to focus and time to relieve tension sets the right conditions for the creative mind to solve the problem. The reflective space allows people to refresh and recharge. It provides individual meditation and allows people to focus on their projects and tasks without interruption. Designed to slow people down, the 's circulation path can be a powerful way to inject reflective headspace into everyday work. Creating a zigzag, curved or arbitrary path allows a person to take a breath and stop thinking to get out of the shabby autopilot mode. We often see large conference rooms and more desks swallowing recreational spaces as the company expands to improve communication, transparency and create a vibrant and vibrant environment. .. This precious space type is smaller than losing or using a shared desk to balance private and public, private, and team spaces.

**Collaborate: Space to share**

You need to share your ideas to make better progress and finally realize it. The best creative collaboration spaces aren't just conference rooms. In fact, they are usually not conference rooms, but hallways, food stalls, or outdoor spaces, encouraging the sharing of tacit knowledge in a non-hierarchical way. The outstanding collaboration space is designed to transmit an "open door" message, such as designing conflicts, responding to crossover impromptu gatherings, sharing thoughts 'live', and fostering informal conversations regardless of age and tenure. There is.

**Play: Space to connect and explore**

The benefits of play are well documented for the development and well-being of society, but few companies actually understand the power of play. Play is presented in many different ways, not just in slapstick madness, but in the form of deep quest and experimentation. Not only does it simply add a light touch to human interaction. A pleasant space allows peers to relax and connect without agenda, strengthening relationships and making business conversations easier. Playful spaces also allow people to relieve stress and relax, making their work more productive and healthy in the long run. Finally, having a "closed door" space encourages free thinking and experimentation, which is good for creativity, but often distracted by those who want to create Excel spreadsheets. It's an important aspect to support such behavior! Different spaces can appeal to different businesses in different ways, but the combination of the four types (whatever is suitable for a mixed company) is the culture that people are building the day they need to be. We create an excellent environment to support and provide business value and vision in a unique way.

User	Activity
Solo	Writing, drawing, telephoning, selling, dealing, thinking, reading, filling, computing, researching
Collective	Selling, dealing, researching, filing
Group	Teaching, counselling, monitoring, interviewing, meeting, team working, brainstorming, informing, briefing, conferencing
Congenial	Mailing, circulating, paper processing, getting supplies, filling, personal care, coffeemaking, brown-bagging, working lunches
Socializing	Eating, entertaining, chatting, smoking, exercising

Picture 2.2.3 Classification of Activities Based on Number of Users  
Source: Dugyu, Ergin. 2013. How to Create a Co-Working Space Handbook. Italy : (pg. 16)



Picture 2.2.4 Number of Users by Activity  
Source: Ibid. pg. 18

# Design Process Stages

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In designing the library and creative space, the authors carry out several stages of the method, from data collection to the design process. The following methods are used:

## **The Start**

Identification of problems, introduction, urgency, and determination of design themes.

## **Preparation**

Existing data collection, study of design themes, study of typology, and precedents.

## **Analysis**

Analysis of problems using the TRIZ method, data from theoretical studies, and survey results.

## **Concept**

Descriptive and sketches design ideas. The concept is formulated based on the analysis process.

## **Initial Design**

Design drawings in digital form in accordance with the design concept.

## **Design Evaluation**

Evaluating the initial design results.

## **Design Development**

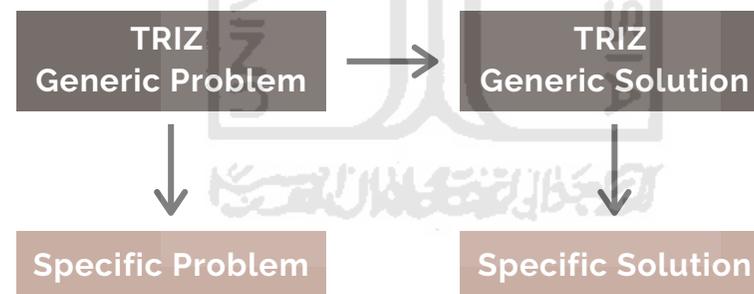
Completion of the design results of the library design and creative space from the results of the design evaluation.

# TRIZ Method

The problem solving method used is an application of thought, namely TRIZ (Theory of Inventive Problem Solving). TRIZ has proven its effectiveness and efficiency in solving contradictory problems (Zhang et al., 2003). The conditions for determining the problem must have two opposing / contradictory requirements on the same element or condition, one side has the aim of improving or improving certain aspects and on the other hand decreasing or worsening certain aspects (Pokhrel, 2013).

Ideal = Improving  
Worsening

In general, the way this method works is to find a specific solution to a problem obtained from the specific contradiction of a problem. The general description of problem solving with the TRIZ method is:



Picture 2.3.1 The TRIZ Problem-Solving Method

Source: Pokhrel, 2013

Improve this one without making this one worse

39 Technical Parameters

TRIZ Matrix Contradiction table with 39 technical parameters on both axes and a grid of numerical values representing contradictions.

Contradiction Matrix for Solving Technical Contradictions

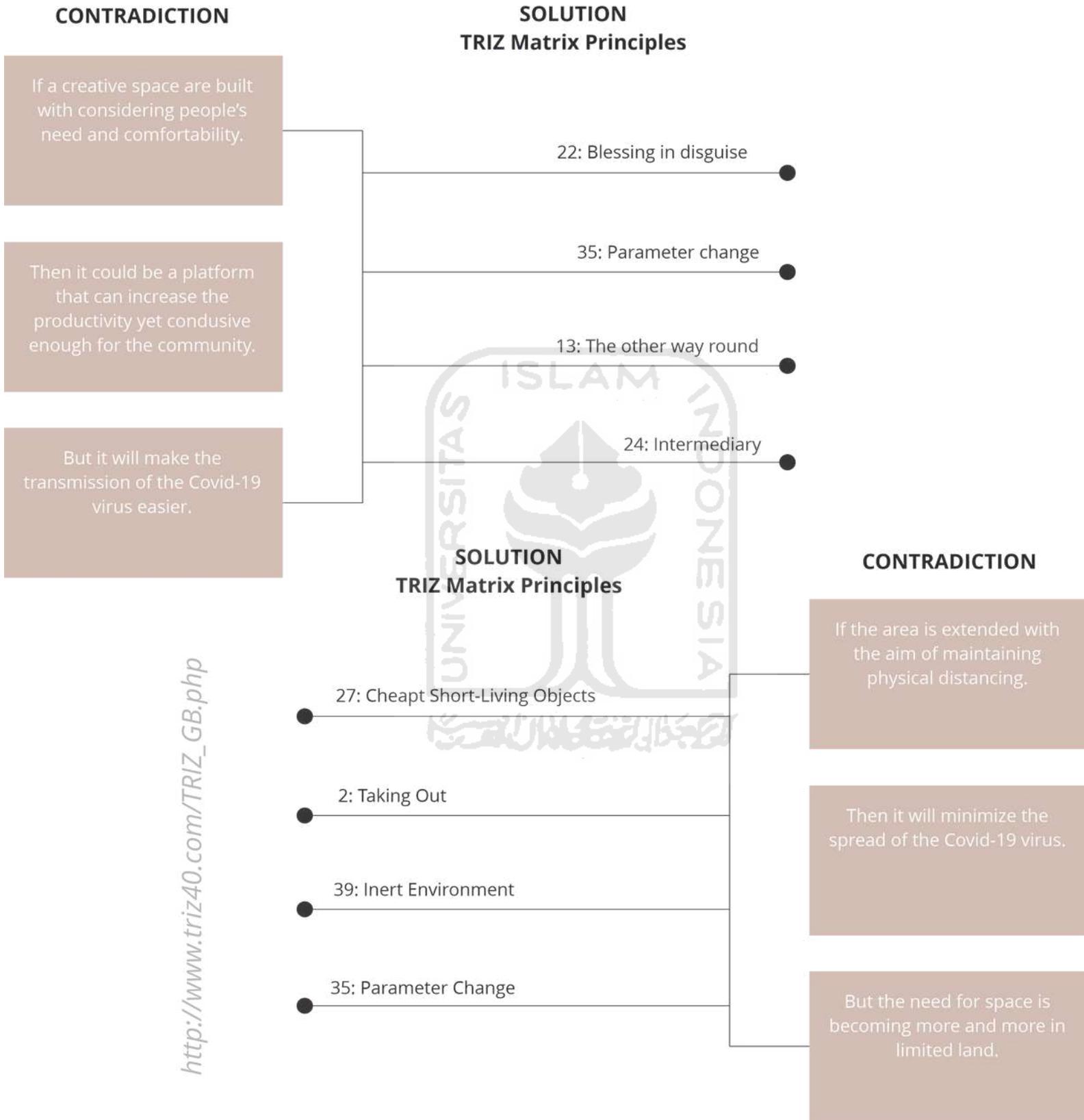


40 Inventive Principles

Table of 40 Inventive Principles, including Segmentation, Taking Out, Local Quality, Asymmetry, Merging, Universality, Nested Doll, Anti-Weight, Prior Counteraction, Prior Action, Cushion in Advance, Equipotentiality, The Other Way Round, Spheroidality - Curvature, Dynamics, Partial or Excessive Action, Another Dimension, Mechanical/Vibration, Periodic Action, Continuity of Useful Action, Rushing Through, Bleeding in Disguise, Feedback, Intermediary, Self-Service, Copying, Replace Mechanical System, Pneumatics and Hydraulics, Flexible Membranes / Thin Films, Porous Materials, Colour Change, Homogeneity, Discarding and Recovering, Parameter Change, Phase Transition, Thermal Expansion, Accelerate Oxidation, Inert Environment, Composite Materials.

Separation Principles for Solving Physical Contradictions table with columns for Space, Time, Condition, and Scale, and rows for various physical contradictions.

Picture 2.3.2 TRIZ Matrix Contradiction Source: Oxford Creativity



# Excellency, Originality, and Novelty

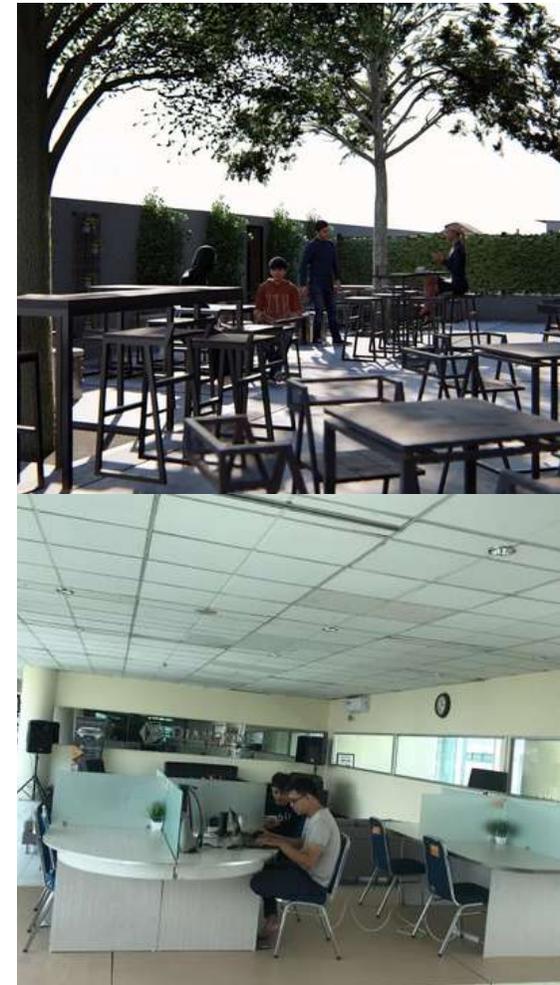
Existing Several Co-Working Spaces Located in Pontianak City

## Intim Cafe and Co - Working Area

Over-crowded, the main function of this building seems to be distracted only as a hangout cafe because the atmosphere is not conducive to work.

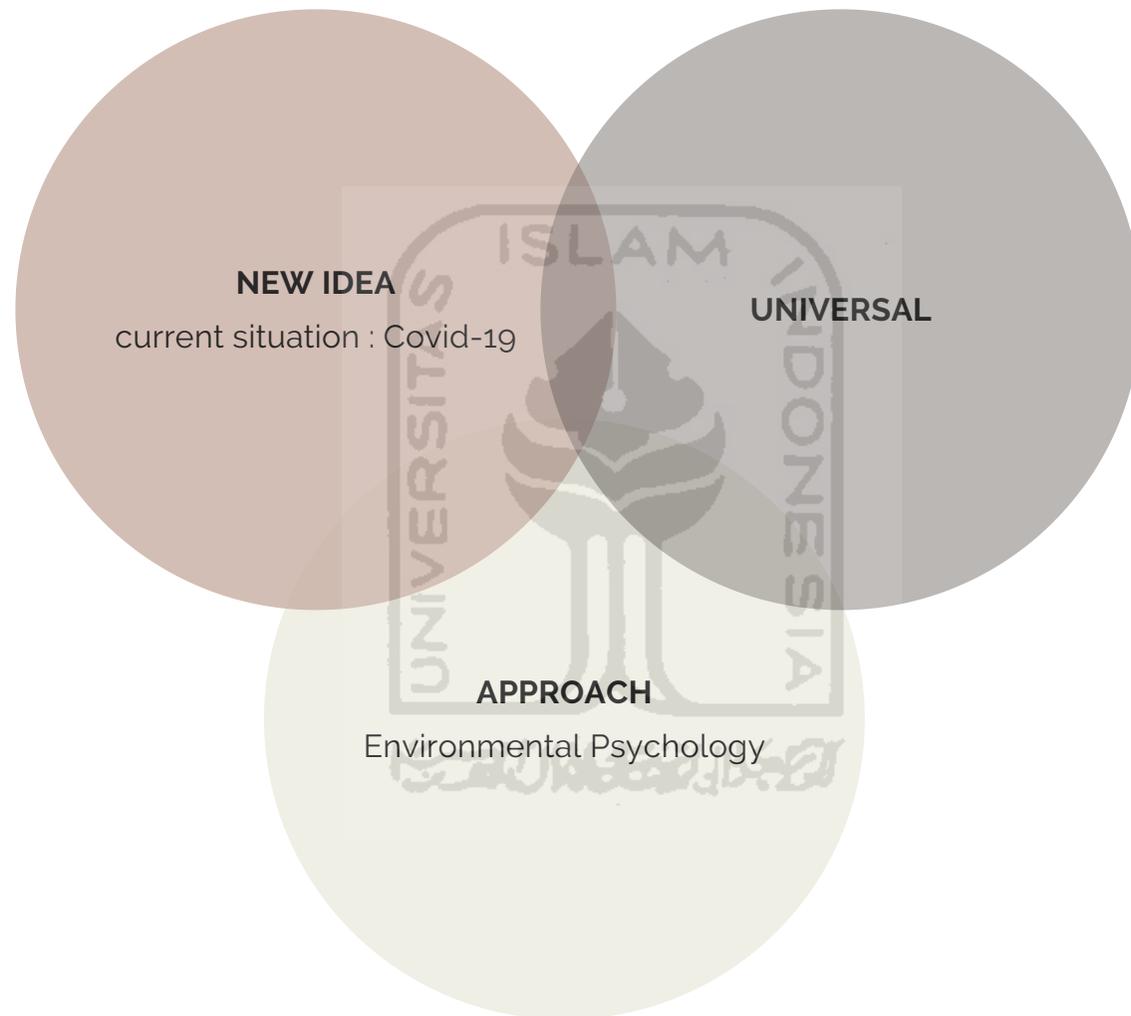
## Diamonds Virtual Office and Co-Working Space

The design has not yet adjusted to the Post-Covid situation. Not really universal, more focus toward workers.



Compared to other research, paper, journal, and other kind of publication.

Author	Title	Year
Zetayu Nurita Apsari	Solo Baru Co-Working Space dengan Pendekatan Pada Arsitektur Modern	2019
Ekadriani Fitria	Designing a Co-Working Space with an Eco-Tech Approach in the BSD City Area, Tangerang.	2020
Adelia Marcelina, IGN. Ardana, Sherly de Yong	Perancangan Interior Co-Working Space di Surabaya dengan Konsep " <i>Fresh and Smart</i> ".	2016



**Precedent:**

# Blessing in Disguise

SOM Designs COVID-Responsive Pop-Up School.



Picture 2.5.1 COVID-Responsive Pop-Up School  
Source: Archdaily

Global design practices Skidmore, Owings & Merrill respond to COVID-19 and create a modular pop-up classroom. Dubbed School/Home, the building is inspired by its traditional single-room name and responds to the school's critical challenges of density, air circulation, and flexibility. A rapidly scalable classroom system provides a learning space in times of innovation and rapid growth while addressing social distancing, health and safety in times of pandemic.

The School/Home design features high ceilings, views to the outside, enhanced airflow systems, and easily sanitized finishes, as well as integrated technology for hybrid teaching and learning. As the team states, "it can be deployed rapidly on any flat surface, in both rural and urban contexts, and in multiples, should a school need to rapidly grow its footprint to give students in-person learning without compromising their health."

# Relation to the Initial Design

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As we know, the world is currently shocked by the case of the Covid-19 virus. The impact caused by this virus is very diverse and most of them are detrimental to society. The Covid-19 outbreak itself of course led to the change to the design by seeing similar events that have happened in the past. Physical distancing is one of the important things to do to decrease the transmission of this virus. Meanwhile, this strategy could create more conducive and enabling increased productivity of society. We could say it is one of the examples of **blessing in disguise** based on the TRIZ matrix principle used.



Precedent:

# Parameter Changes



Blauw Gras HQ

Picture 2.5.2 The New Hybrid Workplace  
Source: Archdaily

The Auw Gras HQ in Amsterdam Houthavens is designed as a hybrid workshop and feels like a sports arena that exudes dedication, fun and creativity. We entered the design phase with questions about how to integrate Blauw Gras' core values and beliefs, resulting in a design based on the basic idea that sports must be a visibly themed theme. New accommodation had to meet new integration methods to work and collaborate. While naturally ensuring a COVID-19 proof setup.

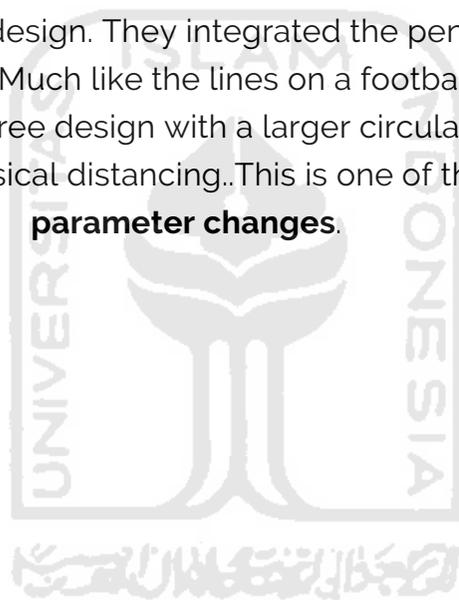
Movement is an important design cornerstone. As in sports, the movement has to be a part of work. Performance isn't improved by sitting in front of a computer all day. We integrated the pentagon in Blauw Gras' logo into the wall art and flooring as a playful use of symbols. Much like the lines on a football pitch, including a centre spot, that run throughout the entire space.

# Relation to the Initial Design

---

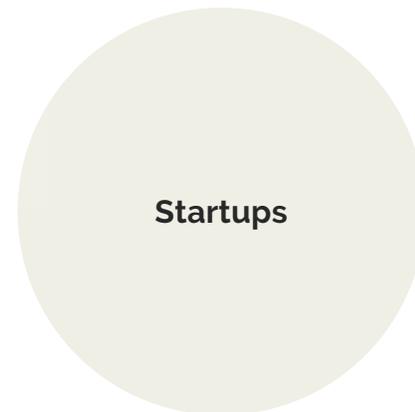
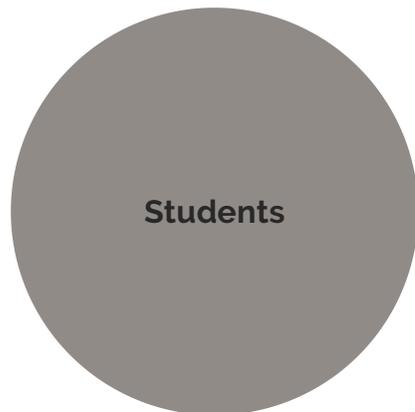
The design from Blauw Gras HQ at the Houthavens in Amsterdam is combining the ambience of the working area which a workspace design that is usually described with seriousness and formal spatial layout that has a minimum amount of movement into the sport kind of design. They integrated the pentagon in Blauw Gras' logo into the wall art and flooring as a playful use of symbols. Much like the lines on a football pitch, including a centre spot that run throughout the entire space, creating more free design with a larger circulation - informal spatial layout, in the aim to ensuring a COVID-19 proof setup - physical distancing..This is one of the examples of the principle of TRIZ:

**parameter changes.**





" Creating social platform for learning and studying, welcoming all levels of participant."



Physical  
Distancing

Circulation  
Patterns

Spatial  
Context

**Creating a space as flexible as possible responding to the current situation. ”**

During - After Effects of Covid 19 Pandemic

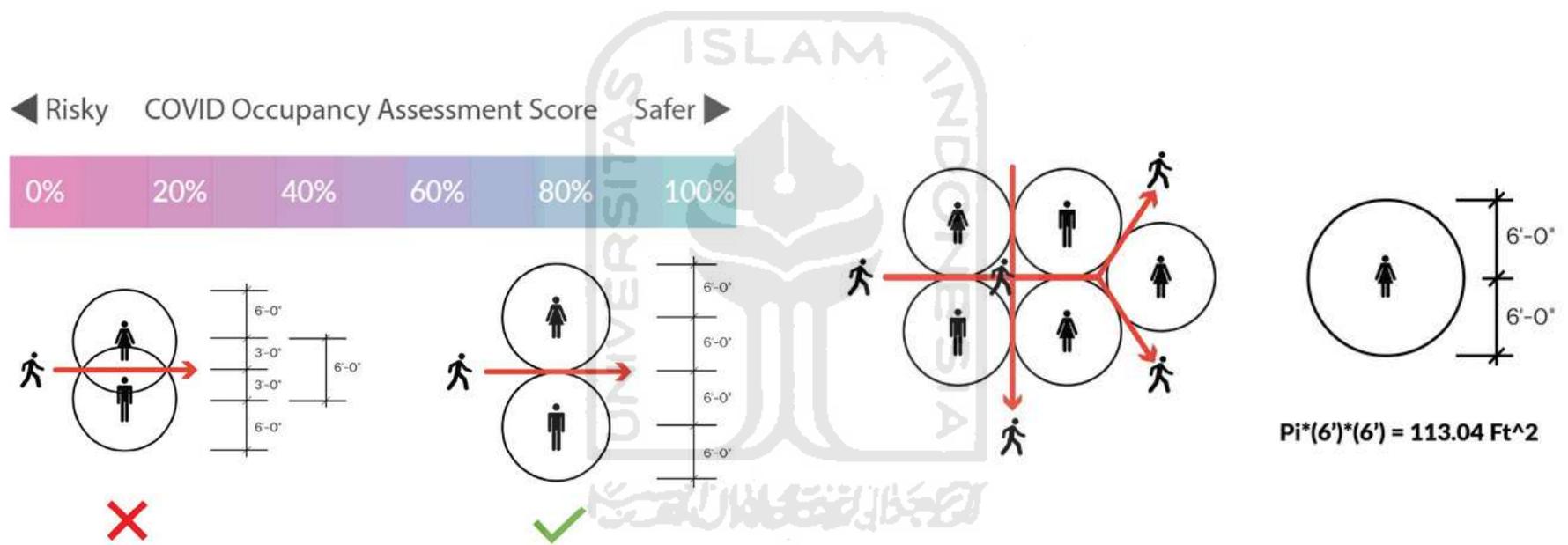
## 22 : Blessing in Disguise

“Physical distancing as one of the pandemic effects creates a conducive and productive atmosphere for the users.”

The 2020 COVID-19 outbreak has deeply redefined our relationship to public spaces. Social Distancing is the practice of maintaining a 6-foot separation from other individuals. The Center for Disease Control and Prevention (CDC) has recommended social distancing as one of the best strategies, along with mask-wearing, to curtail the spread of COVID-19 in all indoor & outdoor environments - specifically in public buildings as they begin to reopen during the ongoing pandemic.



By creating a range limit between each person to others could increase the safety score and decrease the virus transmission through the human body. Moreover, it could help people to have more focus on what they are doing ( increasing productivity ).

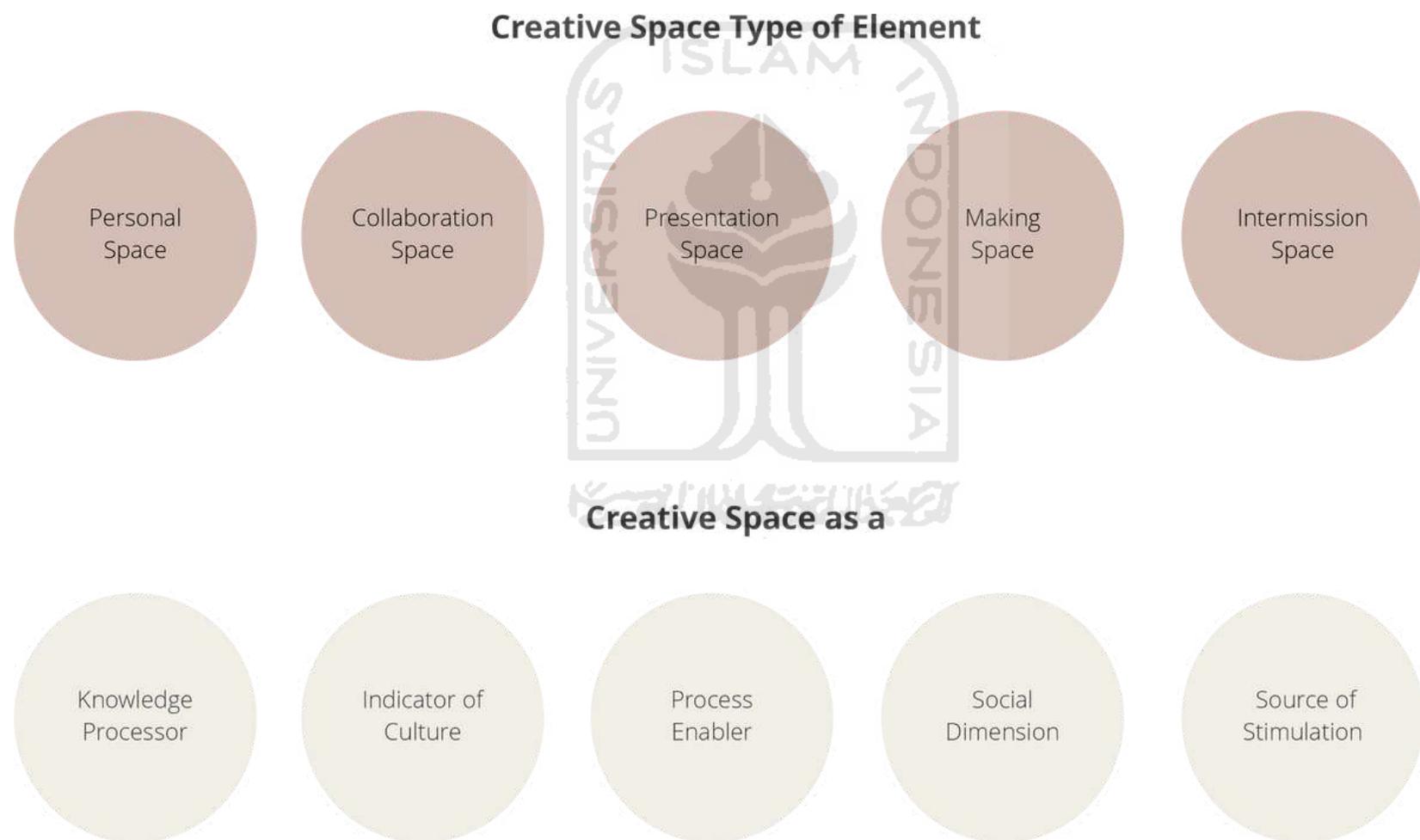


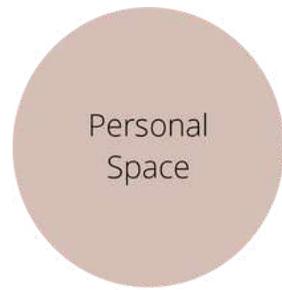
Picture 3.1.1 COVID Occupancy Assessment Score

Source: Cove.tool

# 22 : Blessing in Disguise

## Space and Circulation Patterns are The Main Key



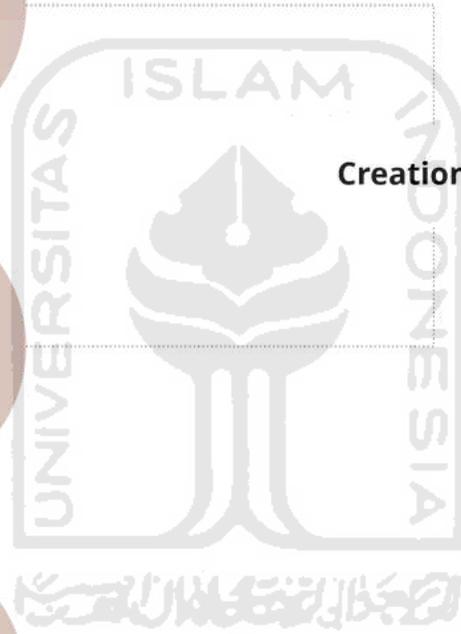


Personal  
Space

**Self - Study Space**



Collaboration  
Space



**Creation Space**



Making  
Space



Presentation  
Space

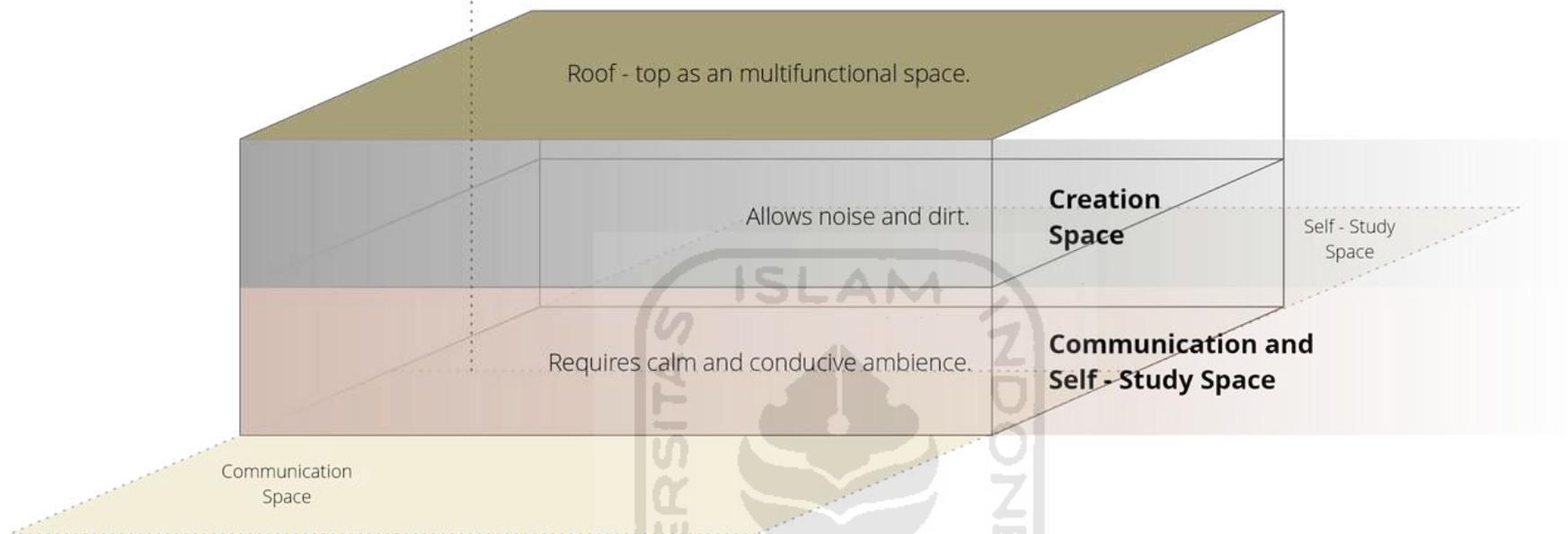
**Communication Space**



Intermission  
Space

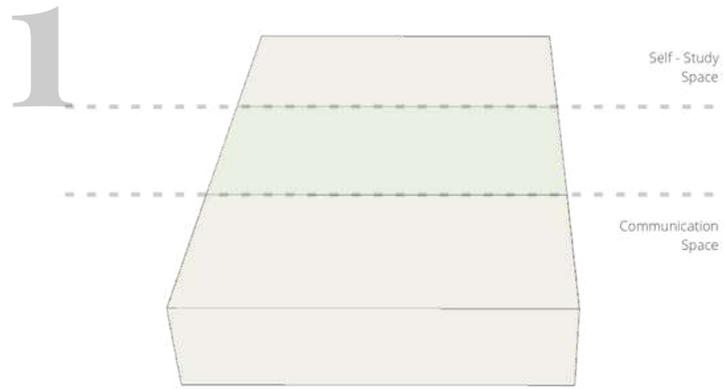
Adding **internal garden** as an intermission space, connecting space to the nature.

Oxygen supply yet taking consideration into visual comfortability.  
Researchers has been proves that natural element could enhance people's productivity.

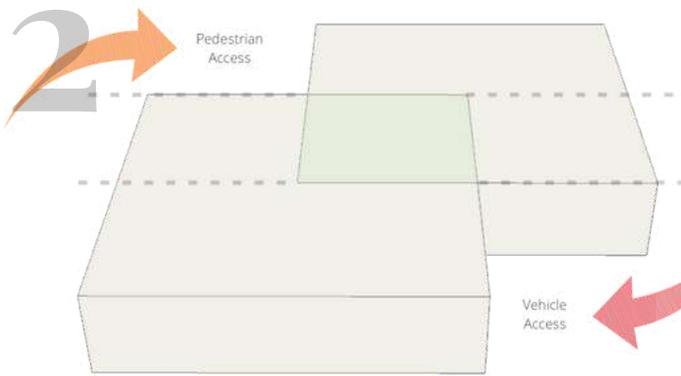


First floor as a personal, presentation, yet intermission space as.

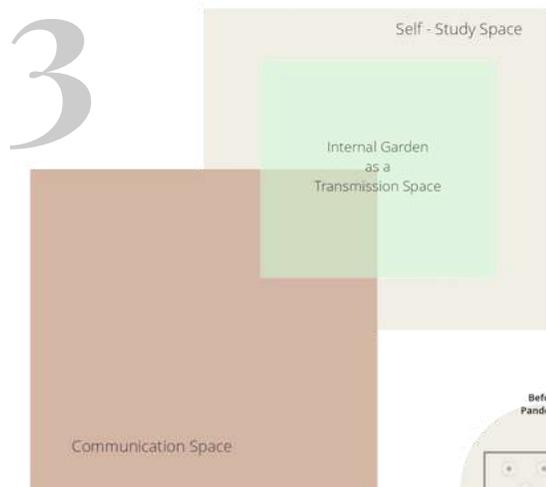
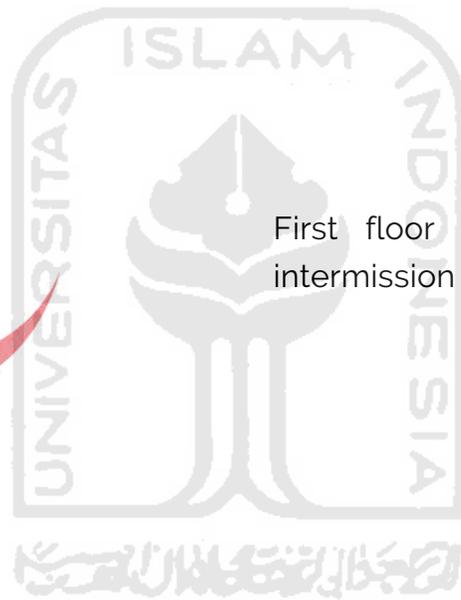
Second floor as a collaboration and making space. More free to expressing idea. A place where people could gather also these space allow for experimentation and noise.



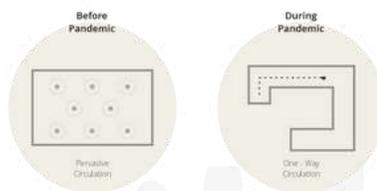
Separating yet zoning the area based on the creative space typology principle. Putting the self-study and communication space at the first floor and creation space at the second floor considering each requirements since the creation space allows dirt and noise.



First floor as a personal, presentation, yet intermission space.

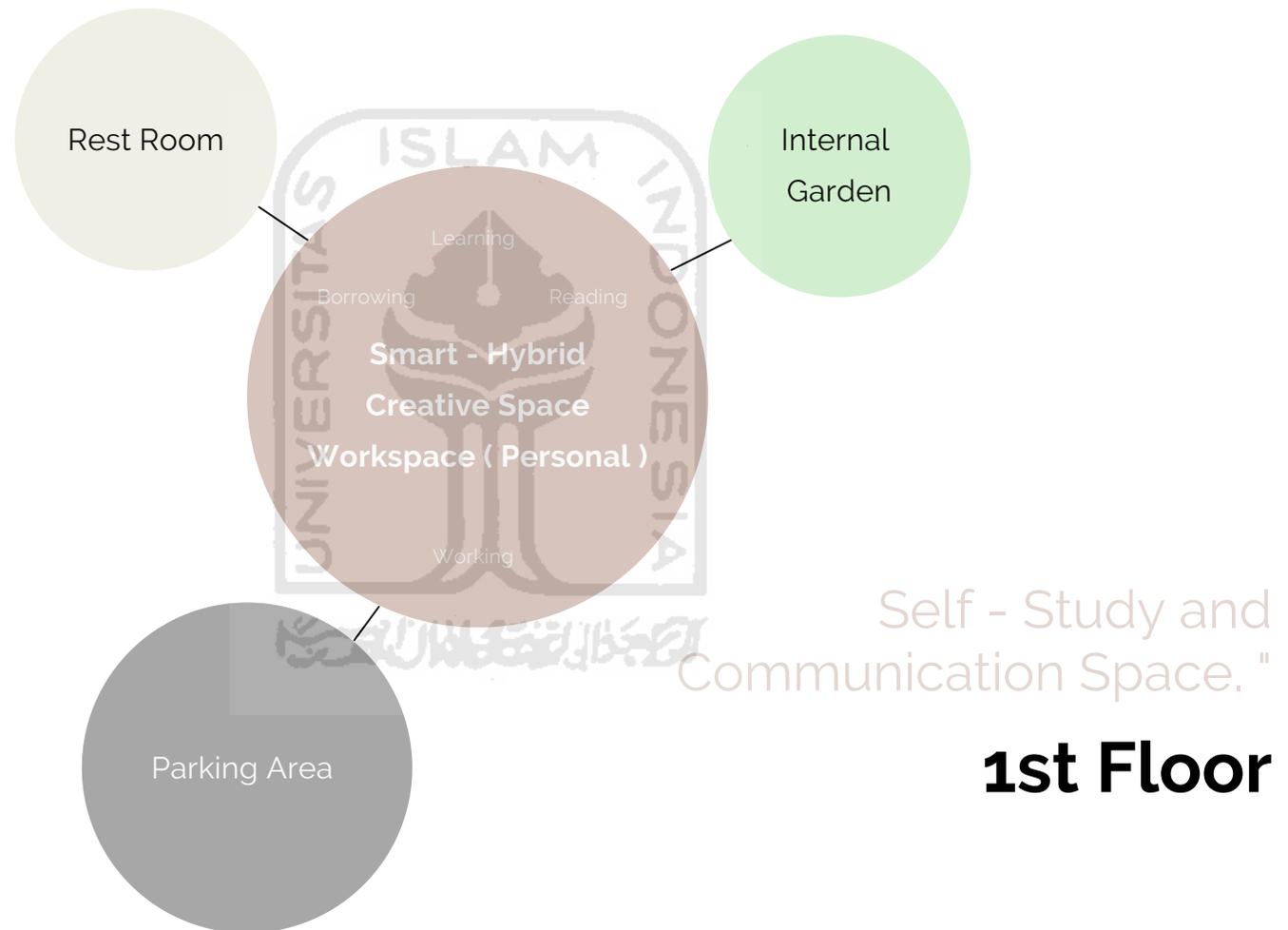


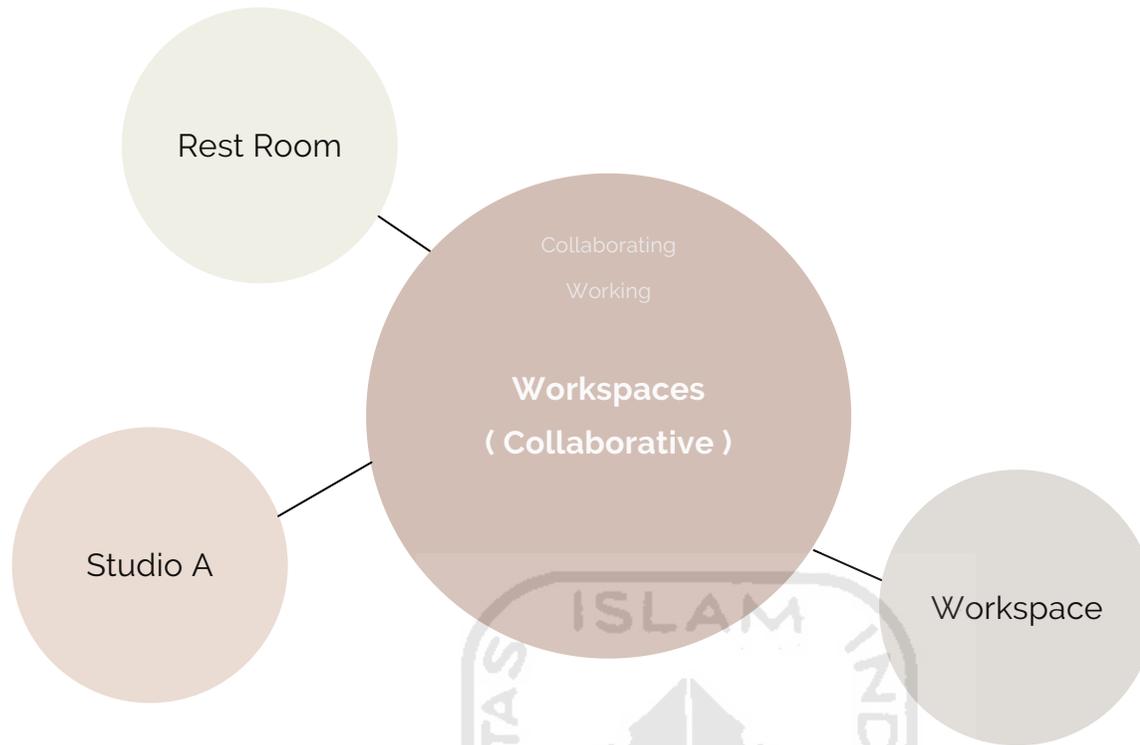
Adjusting to the conditions before and after a pandemic, there must be spatial changes. Changing the layout of a room that normally has a pervasive circulation to one-way circulation with the aim of reducing the number of transmission of the Covid-19 virus.



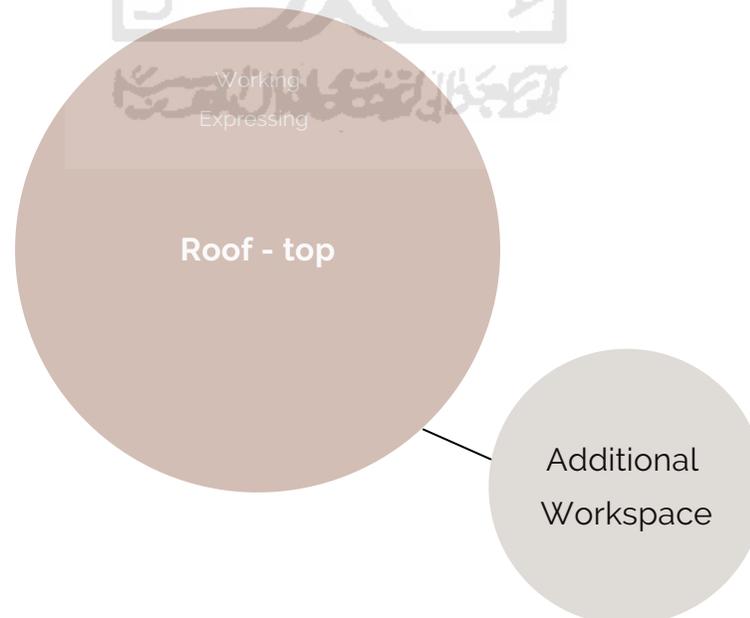
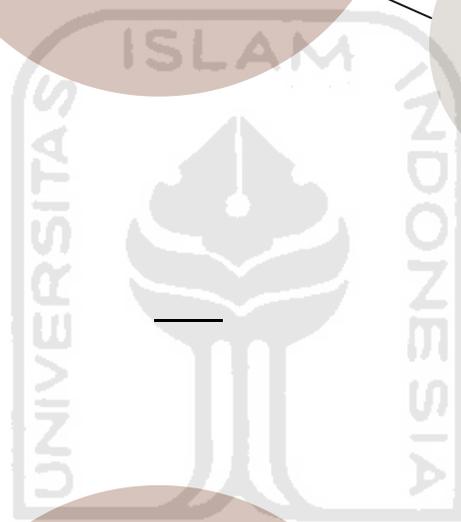
# Bubble Diagram

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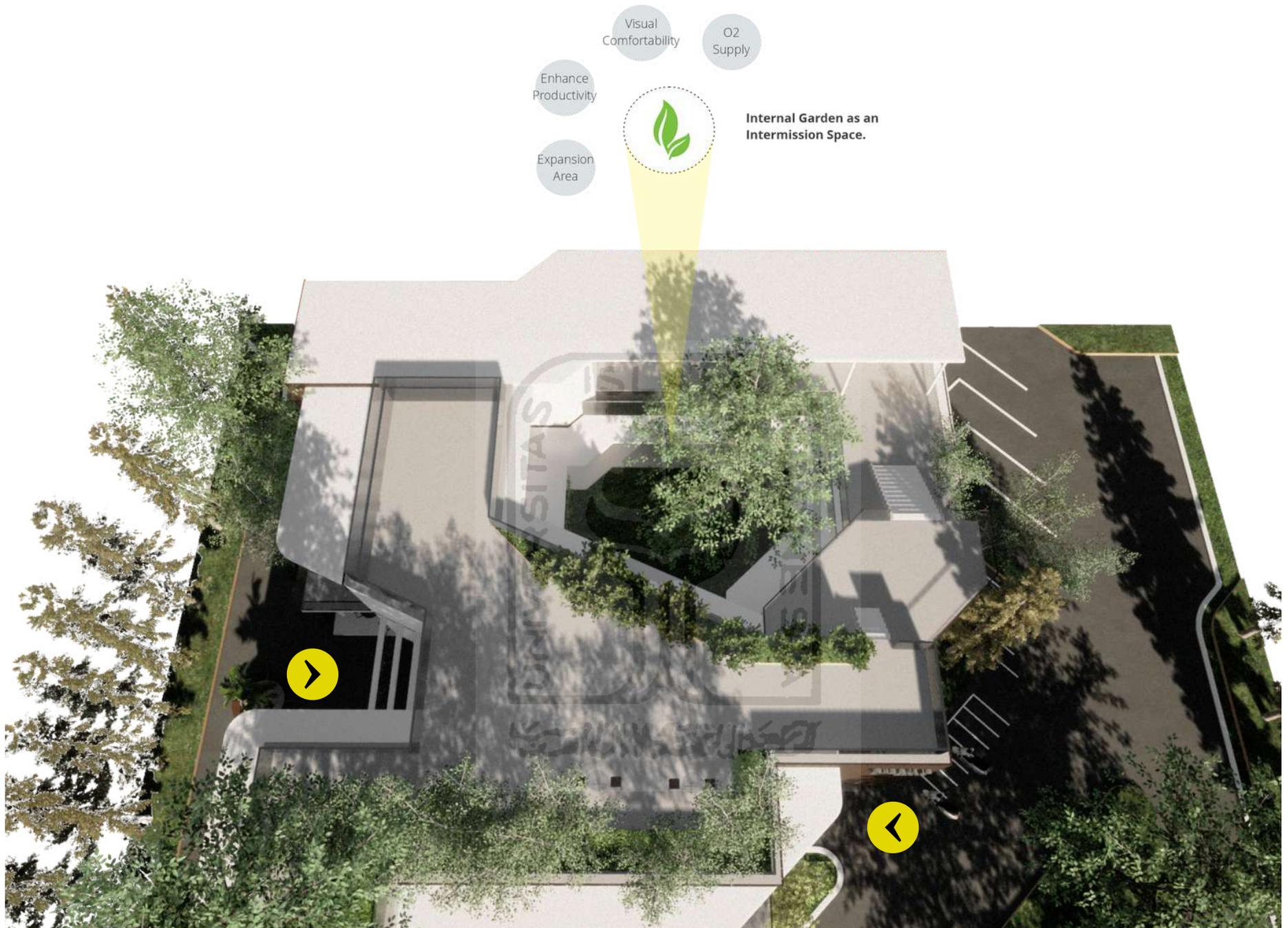




Creation  
Space. "  
**2nd Floor**



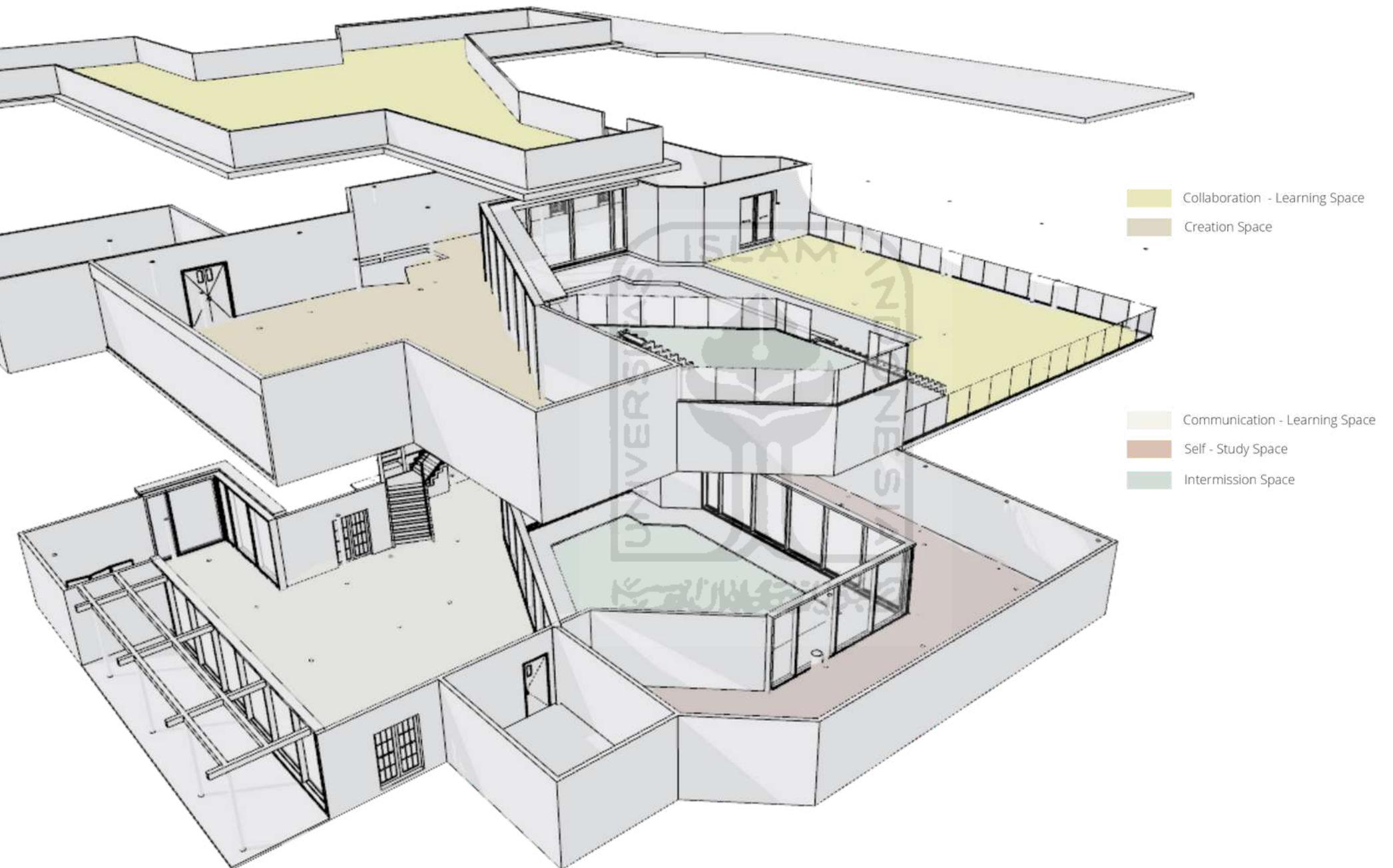
**Rooftop**



Picture 3.1.2 Initial Building Plan Idea

Source: Author (2021)

The building mass is created based on the circulation responding to the covid-19 pandemic which avoid the crowd as could as possible by seperating the pedestrian and vehicle access yet for the safety aspect, and also from the workspaces - one way circulation. Creating conducive atmosphere by its plotting with internal garden as a focal point.



Picture 3.1.3 Building Explode

Source: Author (2021)



Picture 3.1.4 Pedestrian Access

Source: Author (2021)

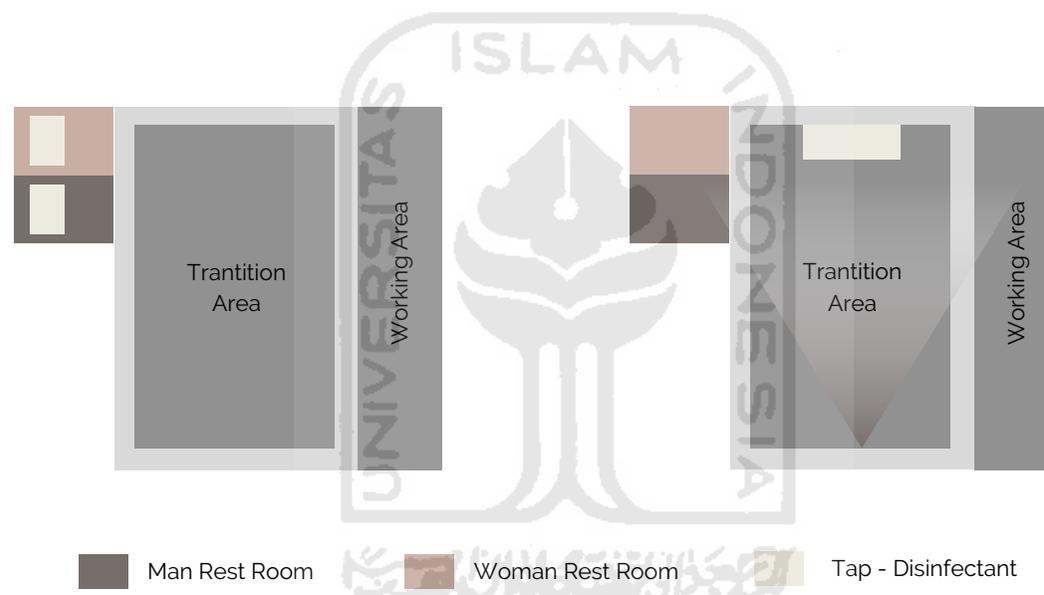


Picture 3.1.5 Vehicle Access

Source: Author (2021)

## 32 : Parameter Changes

“Changing certain parameters to minimize the spread of the Covid-19 virus.”



Picture 3.2.1 Parameter Changes Design Exploration

Source: Author

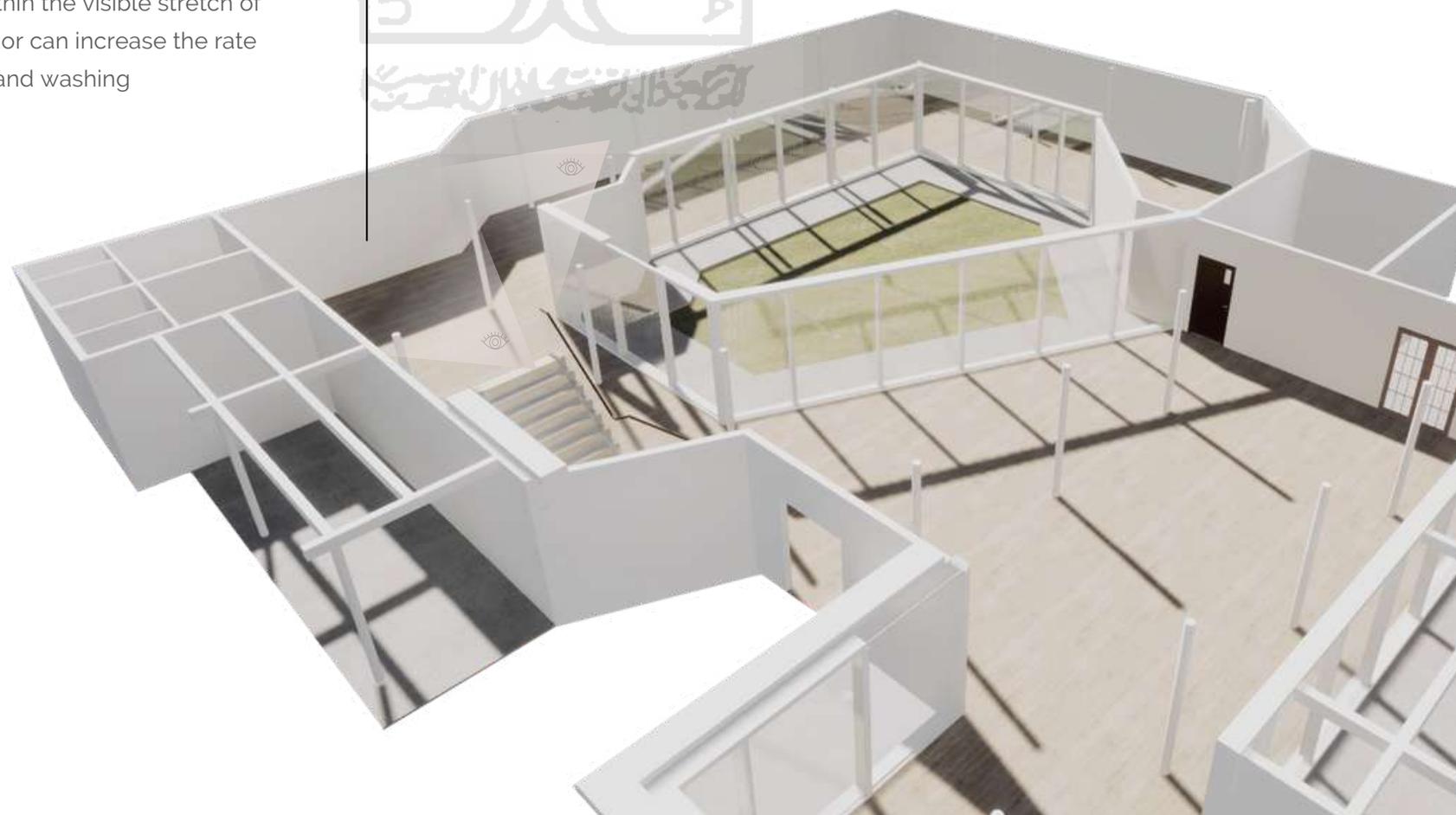
The basic parameter of the placement of the tap is located inside each rest room but in respond to the current pandemic situation, the tap placement are located only at the front of the restroom, with the aim of reducing the duration of mirror users, especially females who like to spend more time in front of the mirror. And also by locating the tap within the visible stretch of a building corridor can increase the rate of hand washing. (Nalina Moses, AIA)



Picture 3.2.2 Design Implementation  
Source: Author (2021)

### Located here.

Locating sink within the visible stretch of a building corridor can increase the rate of hand washing



## 32 : Parameter Changes

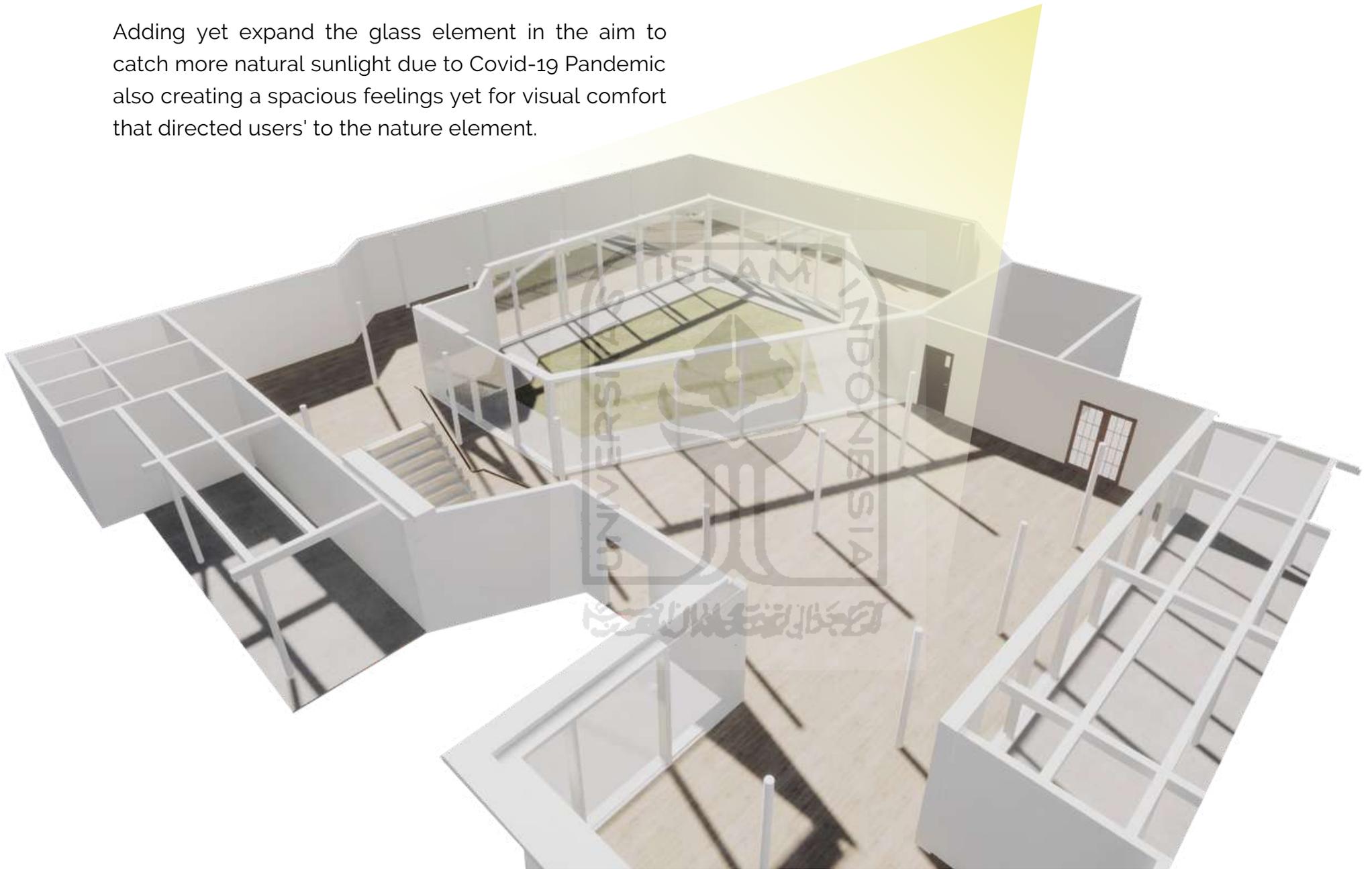
# Basic Walls - Glass Walls



Space Expansion    Space Inside

Focal point located at the center - nature element. The walls around the internal garden are made of glass with the aim of giving a spacious impression yet atmosphere and supporting the visual comfort aspect where the view is outward.

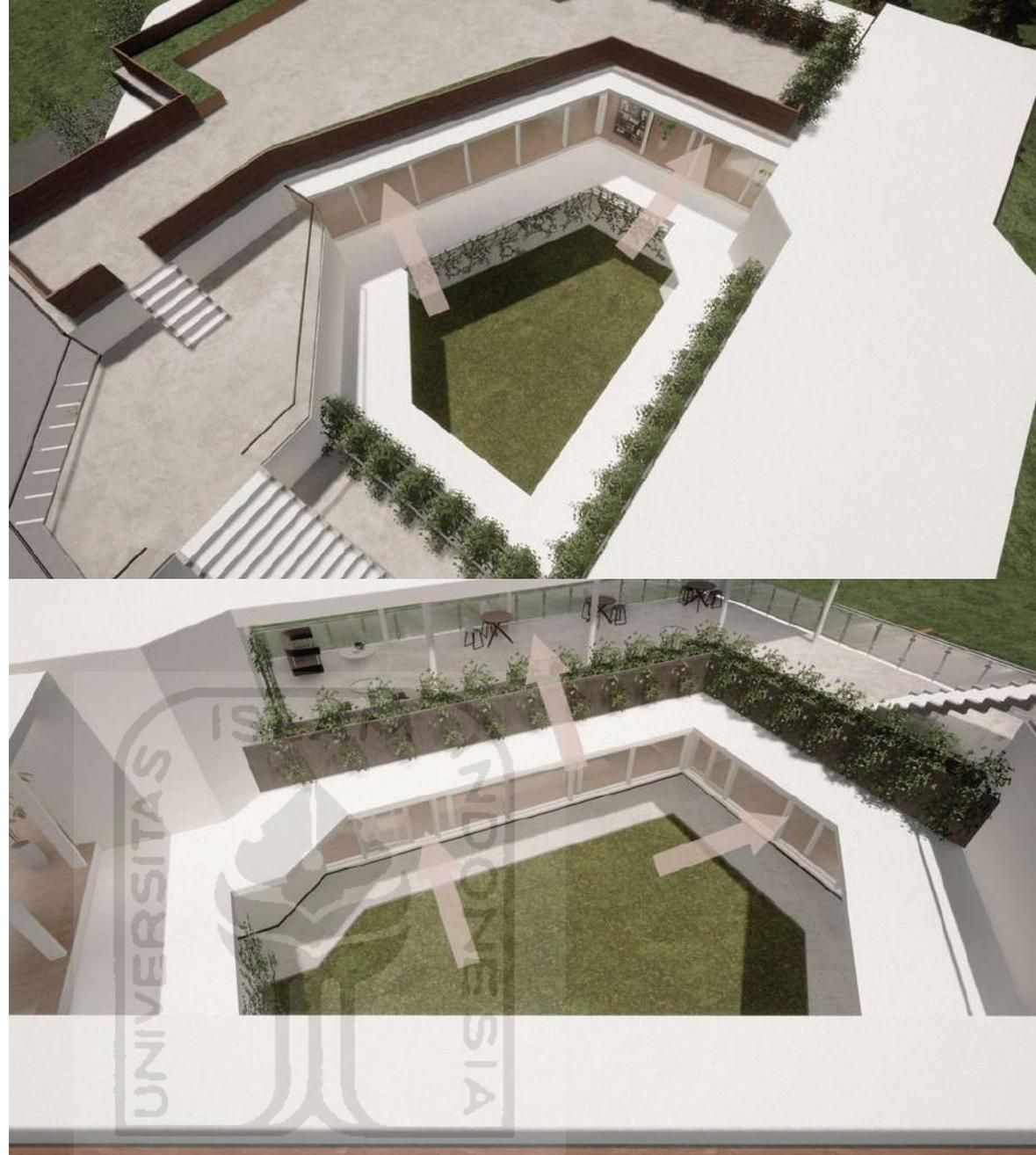
Adding yet expand the glass element in the aim to catch more natural sunlight due to Covid-19 Pandemic also creating a spacious feelings yet for visual comfort that directed users' to the nature element.



Picture 3.3.1 Parameter Changes Design Exploration

Source: Author

The placement of the internal garden in the middle of the building is not only as a focal point but also could be as an access for natural light and air to enter through the building.

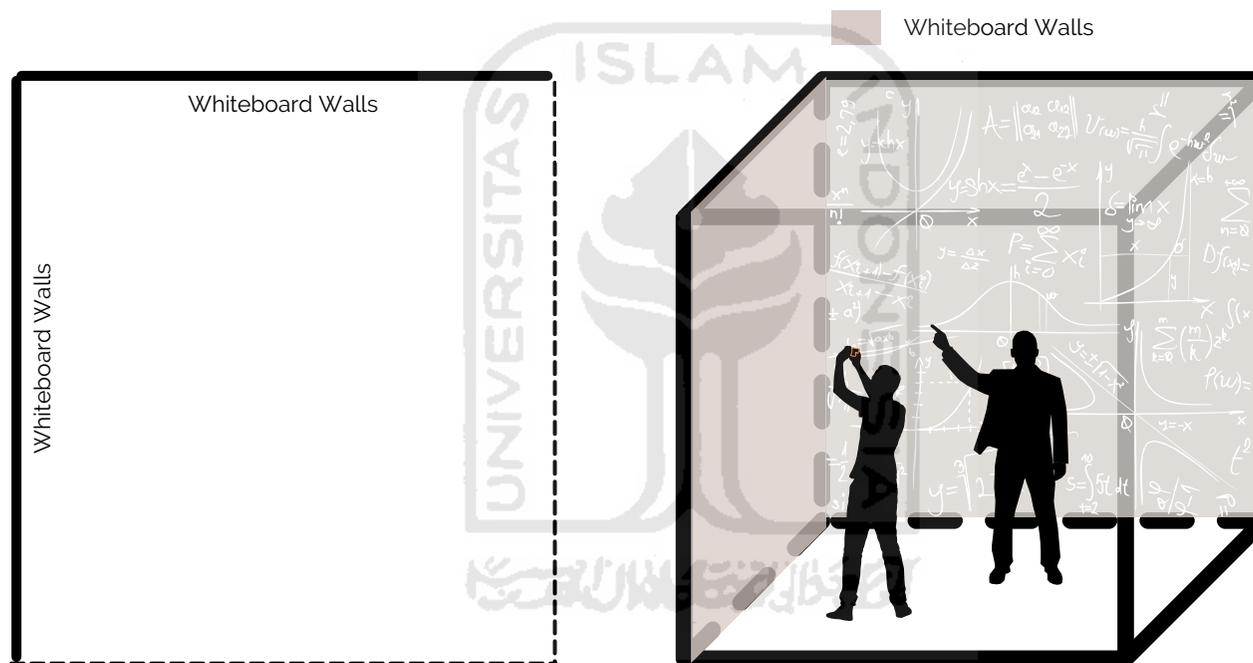


Picture 3.3.1 Natural Air and Lighting Access Through The Building

Source: Author

## 32 : Parameter Changes

# Basic Walls - Whiteboard Walls



Picture 3.3.2 Collaborative - Flexible Space Box

Source: Author

Changing several basic walls into whiteboard in the aim of space savings. This space functions could be really flexible based on users' need. It could be as a collaborative space yet display area if the community want to held some exhibitions or for startups if they want to show off their product.

Creation Space - Multifunction cube  
Turning the basic walls into whiteboard, could save more space instead using real cupboard and other stuff. Space to express and collaborate.



Picture 3.3.3 Parameter Changes Design Implementation Idea

Source: Author (2021)



Creation space - whiteboard walls could be used for creation purposes yet presentation for those who want to present or express their idea into a drawing or writing.



Picture 3.3.4 Parameter Changes Design Implementation  
Source: Author (2021)

## 32 : Parameter Changes

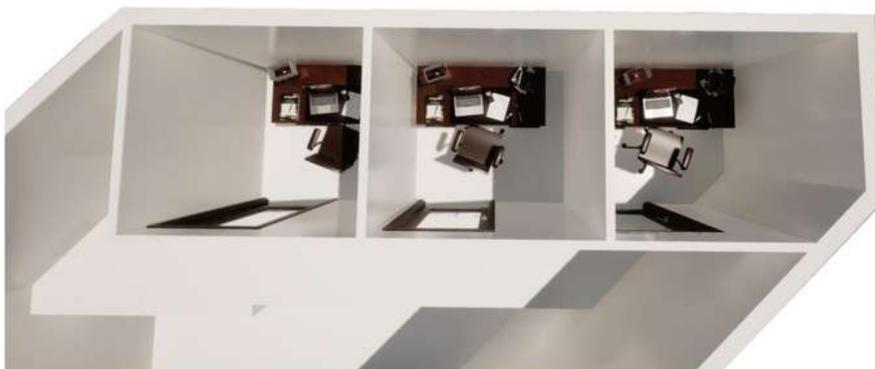
# Remote Collaboration



Adding new kind of space : Remote Collaboration Space. Used for virtual communication - using for those people who held meeting online using zoom, google meet, etc.

**Remote Collaboration**

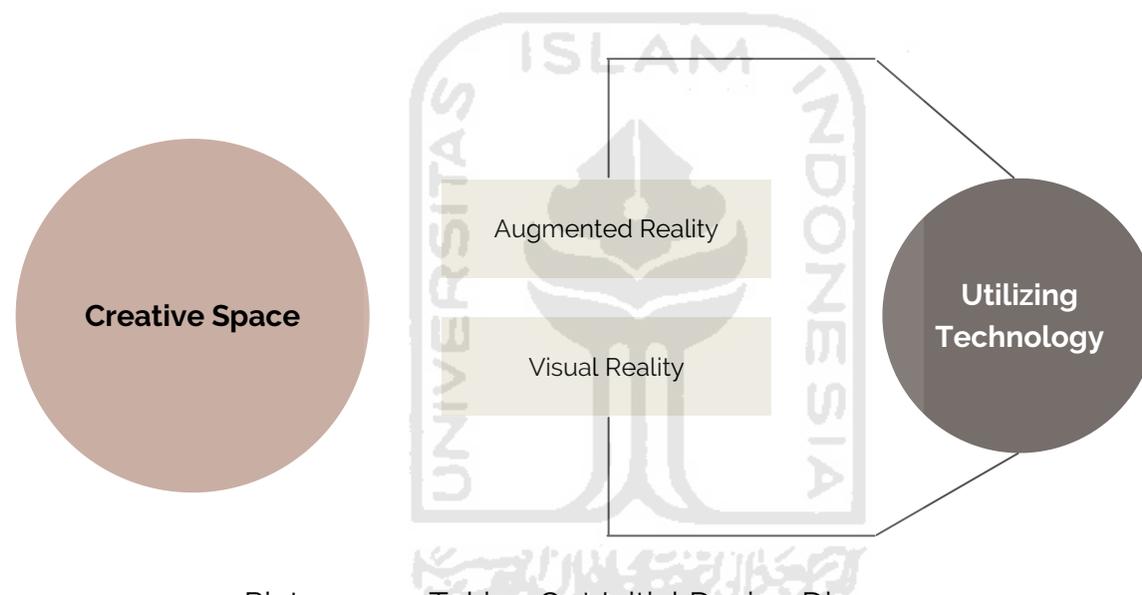
Indoor with Air Conditioning



**Remote  
Collaboration**

## 2 : Taking Out

“Changing or diverting some physical items to digital - space savings.”



Picture 3.4.1 Taking Out Initial Design Diagram

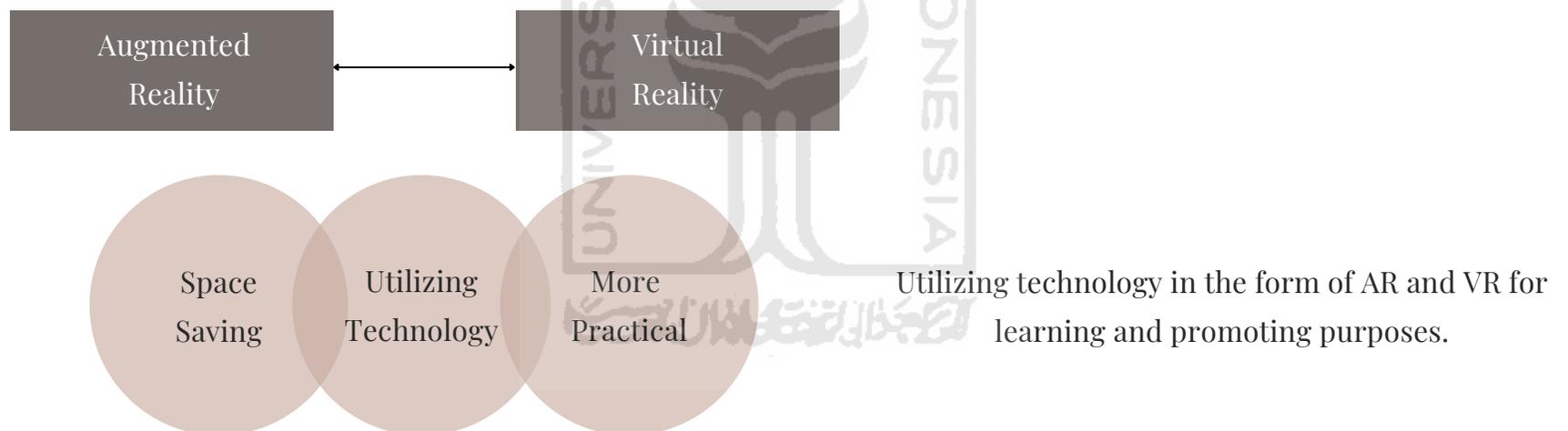
Source: Author

Utilizing technology in today's building may be an alternative choice. In addition to saving space also creating more interactive yet unique experience to the users in the aim to attract more people to come in. Augmented reality yet visual reality could be implemented and use in a learning also promoting purposes.

## 2 : Taking Out

# Smart Hybrid Creative Space

" Focusing on both online and onsite services."



" The expansion of digital services is unlimited and full of possibilities."

## Pontianak Creative Communities:

IdeKita

Apps Design - IT

Urbaistreet

Musicians, Merchandise,  
Distro

Pontianak  
Creative  
Association

Startups - IT

LIPArt

Art, Visual

KUWAS

Travelling, Culture

POTION

Animation, Videography

<http://pontinesia.com/komunitas/>

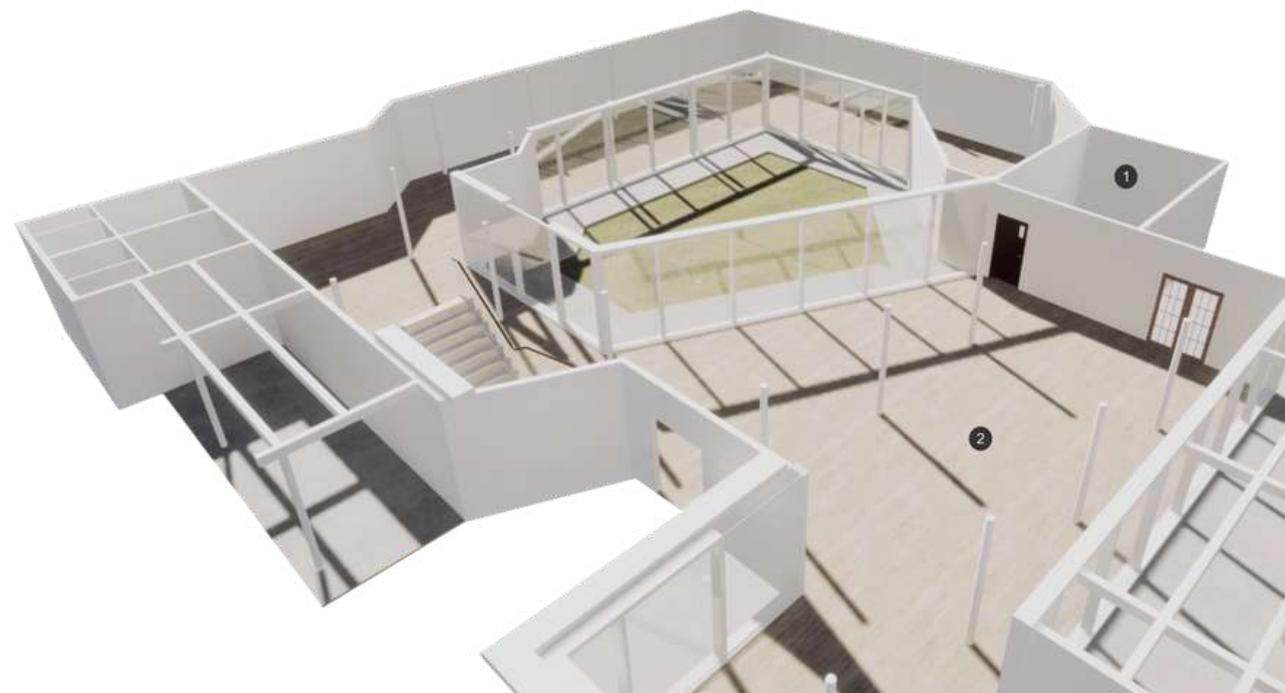


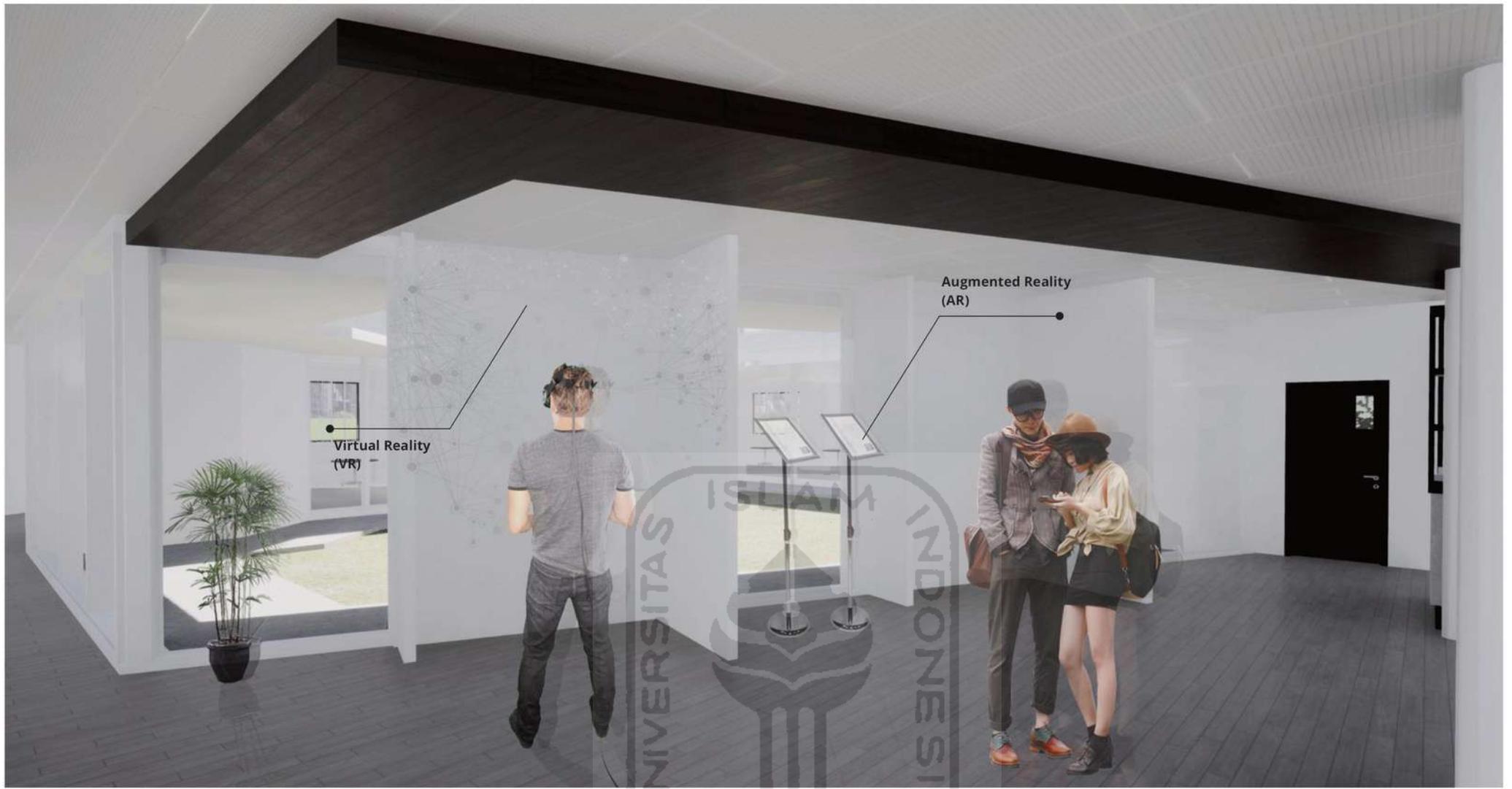
AR Learning and Promoting Space

**Creative Hall as Learning yet Promoting Space**

Provide a space for startups and beginner to learn also promoting their products, utilizing technologies such as AR and VR in the aim to attract more people also more effective in respond to the pandemic.

- 1 VR Production Space
- 2 Creative Hall - Space to Learn and Promote





### Travelling & Cultural

KUWAS Community that engaged in traveling and cultural things. With VR technology, allowed people to go to some places such as the equator monument or another city landmark to learn and add new insights.



### Art & Photography

LIPart and POTION Community that engaged in visual, art, animation, photography, and videography. With VR technology, allowed them to held an art exhibition with a minimum amount of space.





Using AR technology, allows people to try the product just using their phone camera. For the example, just direct their camera after they scanning the QR Code to their hand if they want to try bracelet product.



**AR Application**

**Specific Barcode**

**Try it on**

**Order**

**Home Delivery**



## 39 : Inert Atmosphere

"Creating a safe atmosphere by reducing the transmission of the Covid-19 virus."



### Internal Garden as a View yet an Additional Space

Provide views for the surrounding and could be open up to extend the learning zone also bring the users closer to the nature - allows natural sunlight come through the building.

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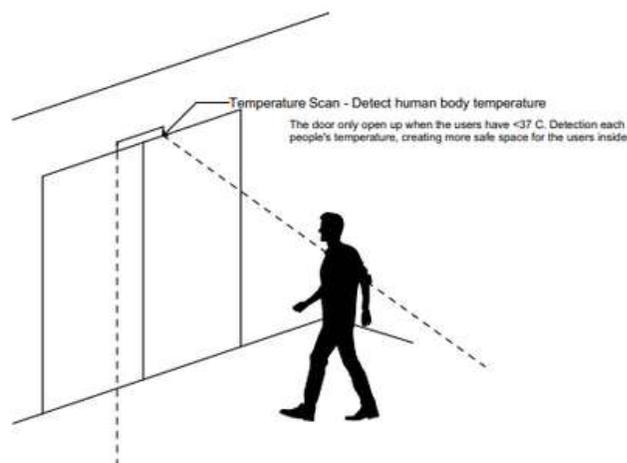
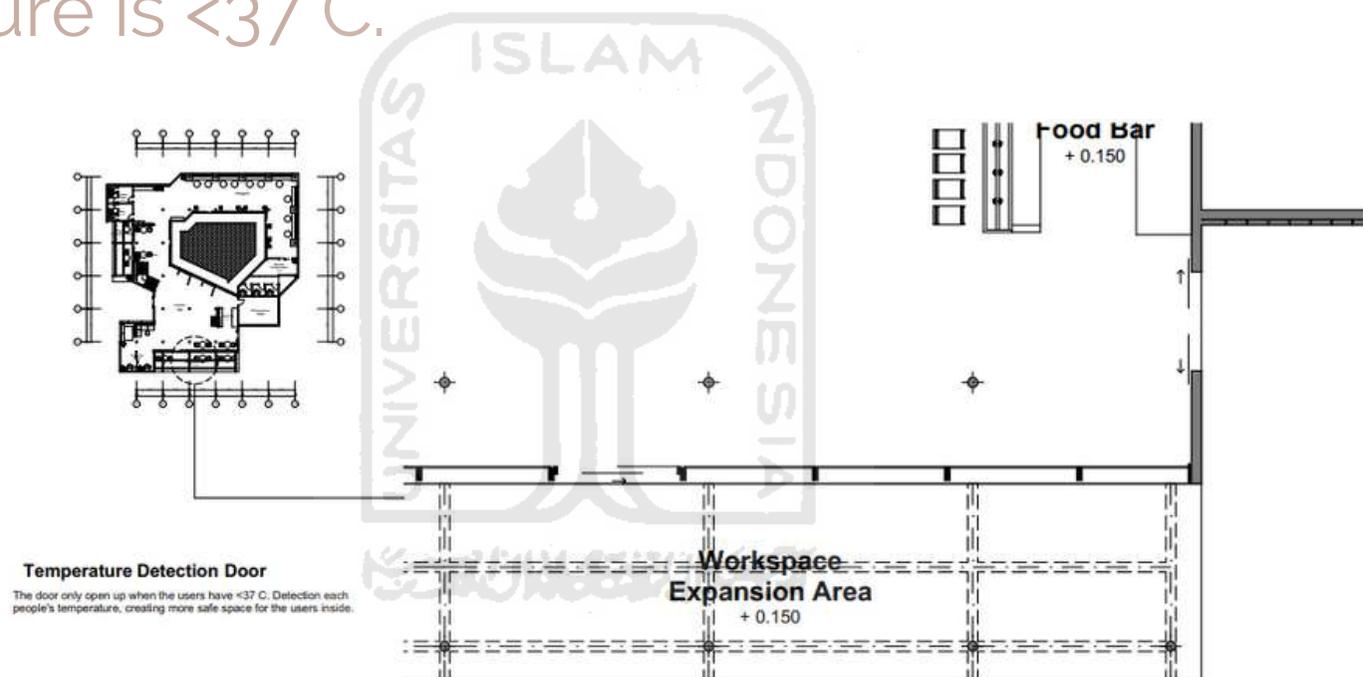
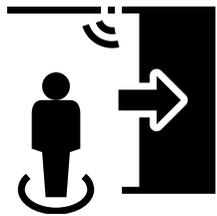
This internal garden was created because Pontianak city itself is quiet lack of green area. The area of public green open space in Pontianak City in 2018 was 13.48% of the city area (Pontianak City Spatial Planning and Public Works Office, 2018). Meanwhile, the standard for providing public green open space is based on Permen PU No. 5 of 2008 concerning Guidelines and Provision of RTH Utilization in Urban Areas, namely 20% of the total area of the city.

Other purposes of this internal garden besides of provide more green area in Pontianak also it could be as an oxygen supply for the surroundings and cooling the area since Pontianak itself is located on the equator. It also supporting the main function of the building: learning and working zone.



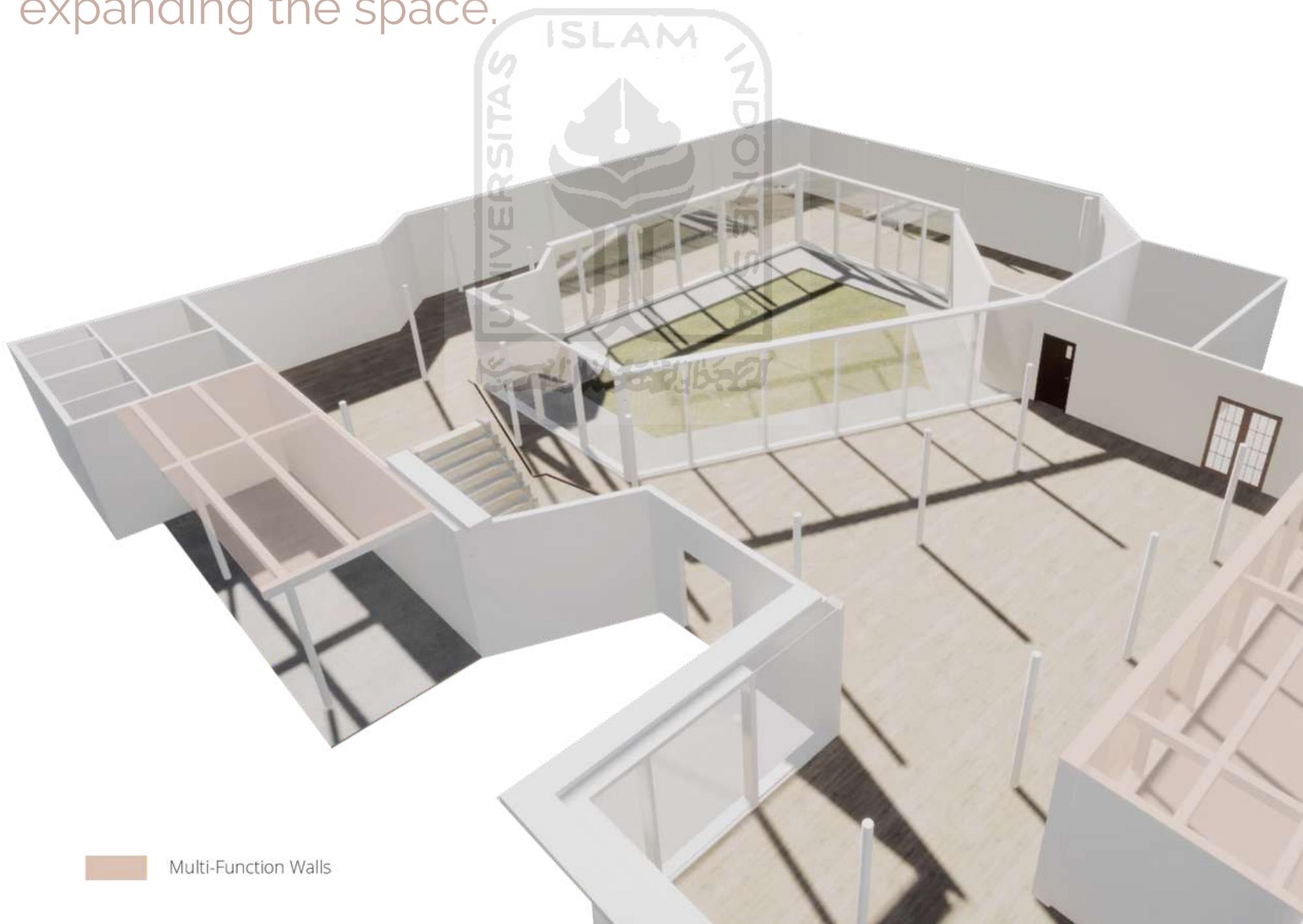
## 39 : Inert Atmosphere Smart Automatic Door

Equipped with temperature detection system, could only open when the temperature is  $<37$  C.



## 39 : Inert Atmosphere Multi-Function Walls

"Turn walls into floor yet roof in the aim for expanding the space."



**Before  
Expansion**



**After  
Expansion**



Could be expanded during the Pandemic in the aim to get more space - physical distancing purposes. Creating more space to work both on the first floor and the second floor.

**Before  
Expansion**



**After  
Expansion**

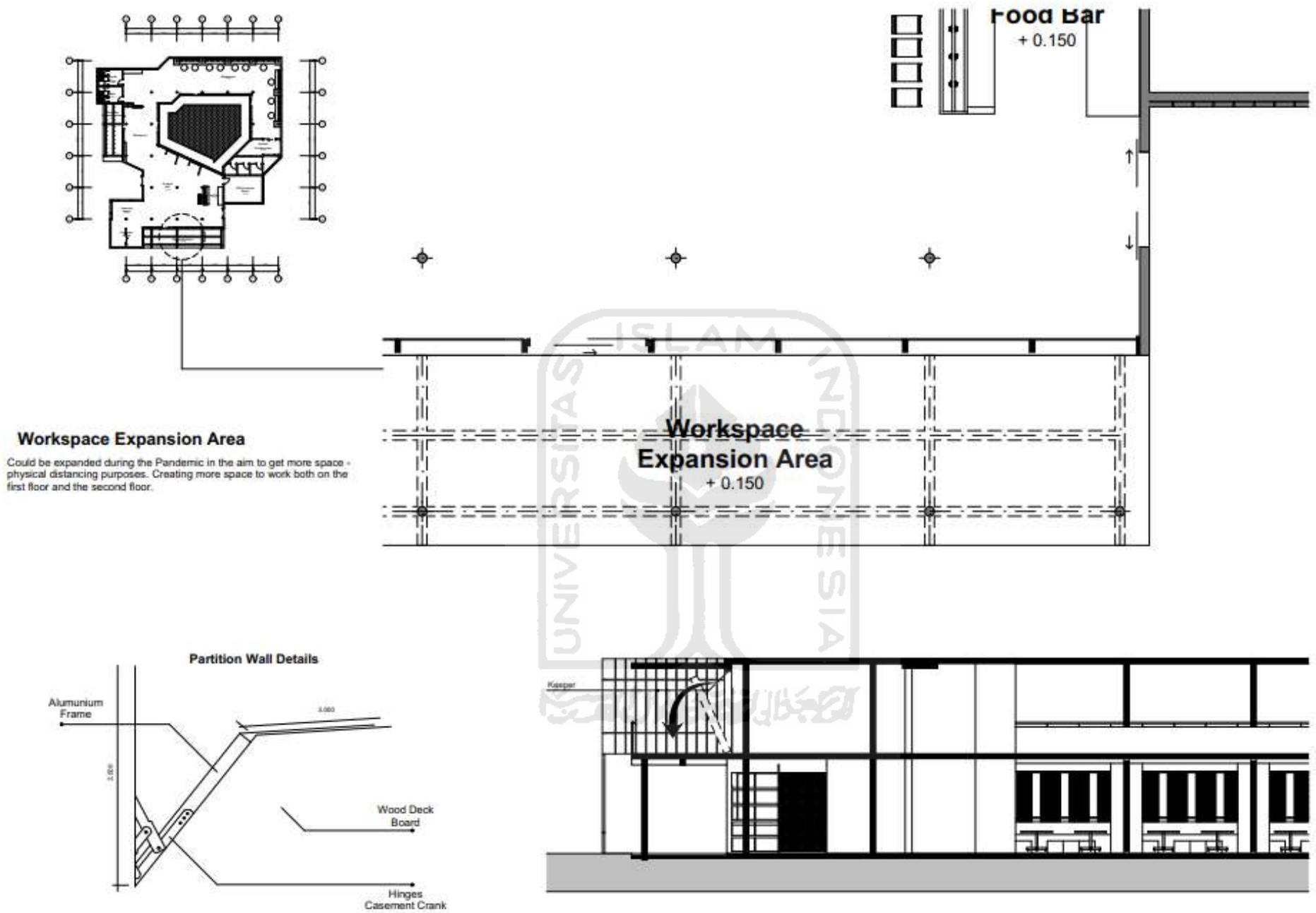


Could be expanded during the Pandemic in the aim to get more space - physical distancing purposes. Creating more space to work both on the first floor and the second floor.

**Smoking Area**

2nd floor - studio A





Picture 3.4.1 Partition Walls Details

Source: Author (2021)

# 39 : Inert Atmosphere Initial Workspace Idea

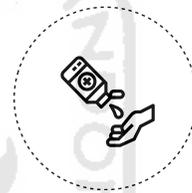
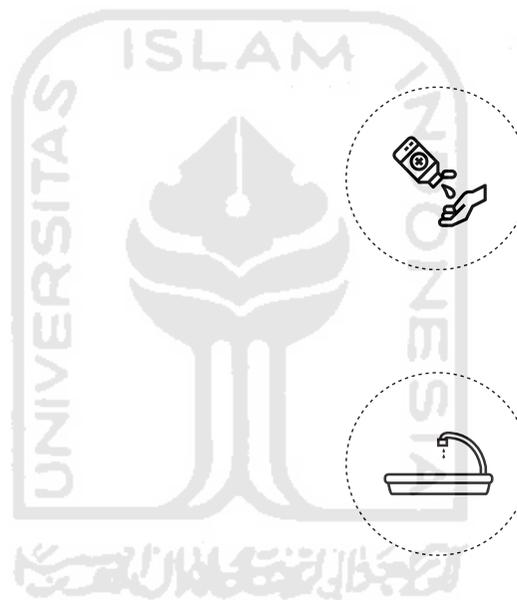


## Meet in The Open

Hold meetings in open,  
well-ventilated space



## Remote Collaboration

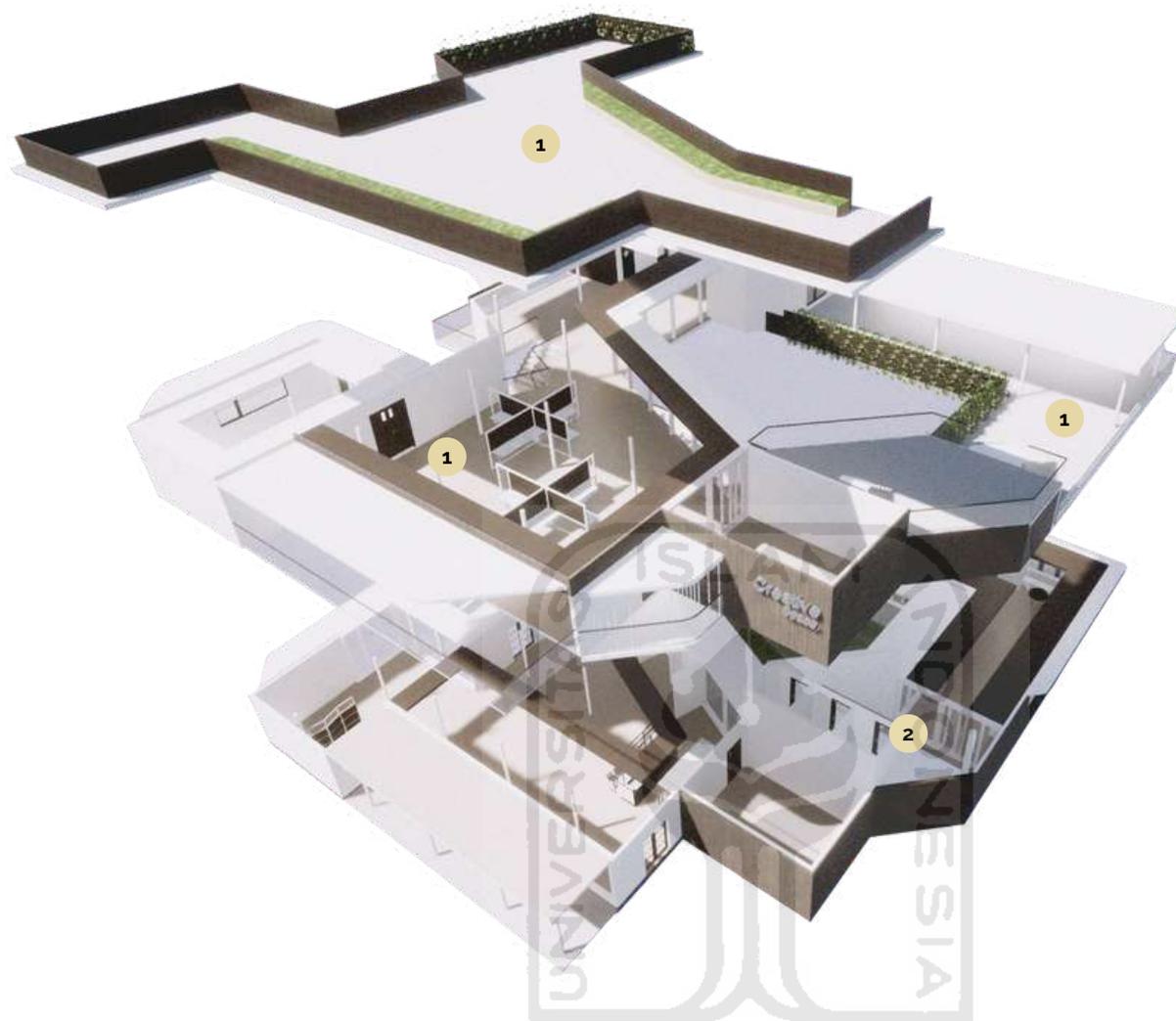


## Provision of Hand Sanitizers



## Provision of Sink

Locating sink within the visible stretch of  
a building corridor can increase the rate  
of hand washing



Picture 3.5.2 Building Explode  
Source: Author (2021)

**1**

### **Meet in the Open**

Hold meetings in open, well-ventilated space, could reducing yet avoid the covid - 19 virus transmission rather than using one closed room.

**2**

### **Remote Collaboration**

Used for those who want to do virtual meetings e.g. zoom, gmeet, and other application. Each table using portable panel in the aim for covid-19 transmit prevention yet for conducive space.



# Approach: Environmental Psychology

" Creating atmosphere that could affect users' behaviour yet psychology. "



# Approach: Environmental Psychology

## Mingle with Nature

---

"We are naturally drawn to nature."

After 10 years of researching the problem, psychologists from Exeter University found employees were **15 percent more productive** when even just a couple of house plants were brought in the office. They found that looking at **some greenery could boost brainpower**, improves mood and makes employees more attentive.

And in another study, students who took tests in outside-facing windows with a natural view did better than students in windowless classrooms.

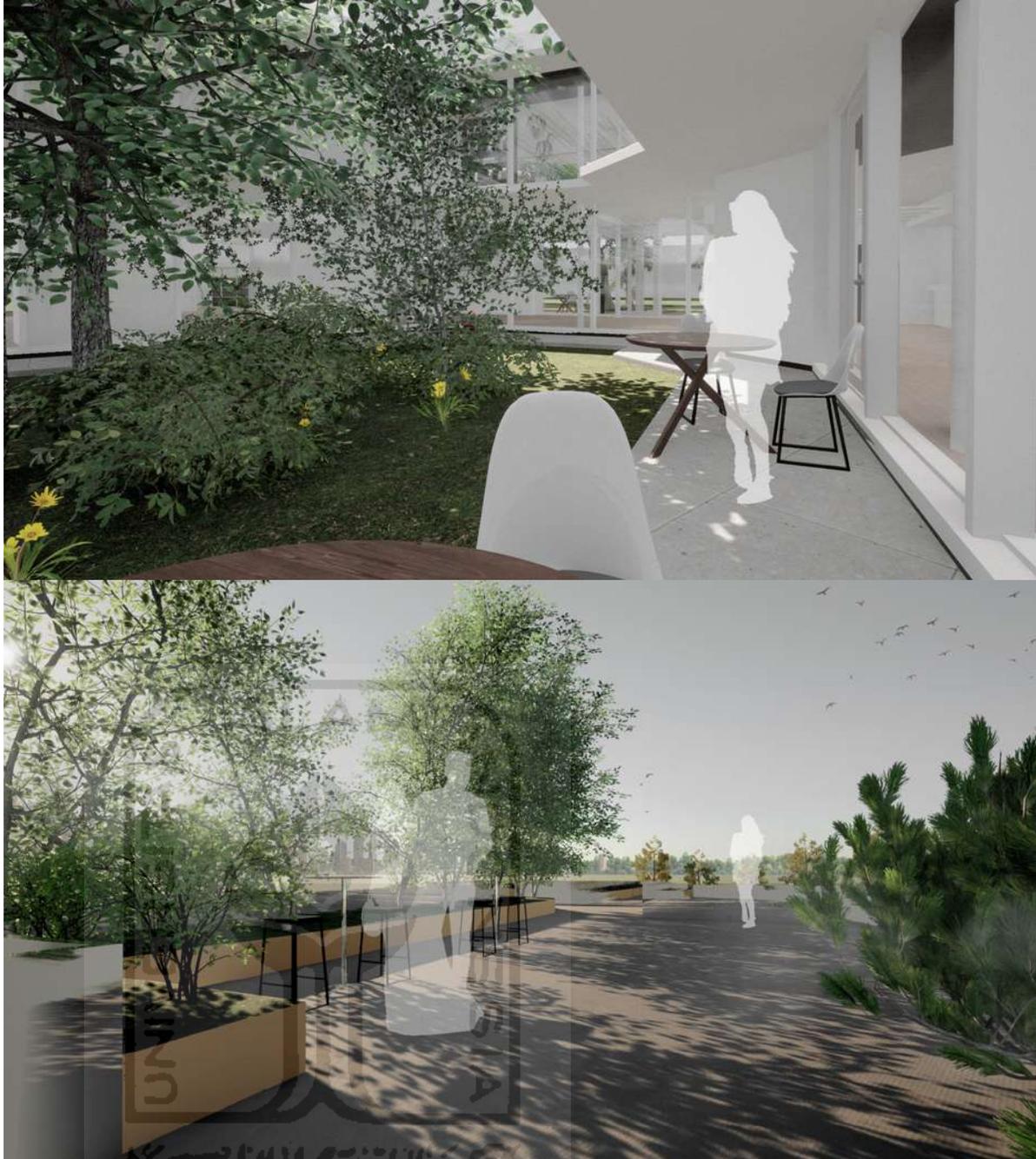
There are several reasons why this makes sense. One of them is the theory that humans have evolved an instinctual, genetic attraction to life and nature, also known as "**biophilia**," so that looking at or hearing sounds of nature reduces stress, allowing us to think more clearly, be more resilient, and come up with creative solutions for problems.

Productivity

Visual Comfort

O<sub>2</sub> Supply

The placement of the internal garden in the middle of the building is not only as a focal point but also could be as an access for natural light and air to enter through the building.



Picture 3.5.2 Environmental Approach Implementation

Source: Author (2021)

# Approach: Environmental Psychology Sink Placement

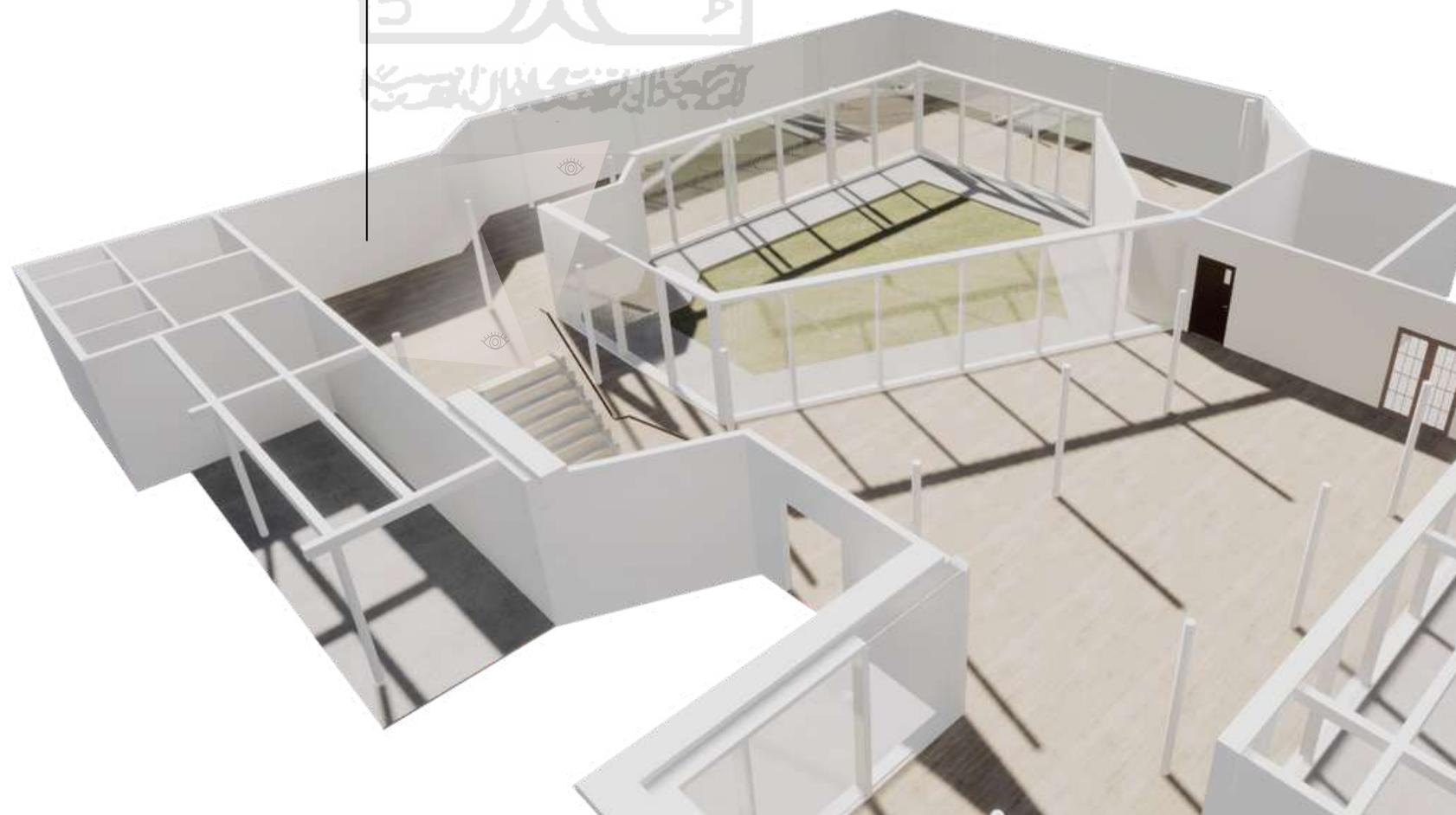
" Locating sink within the visible stretch of a building corridor can increase the rate of hand washing. "



Picture 3.3.1 Design Implementation

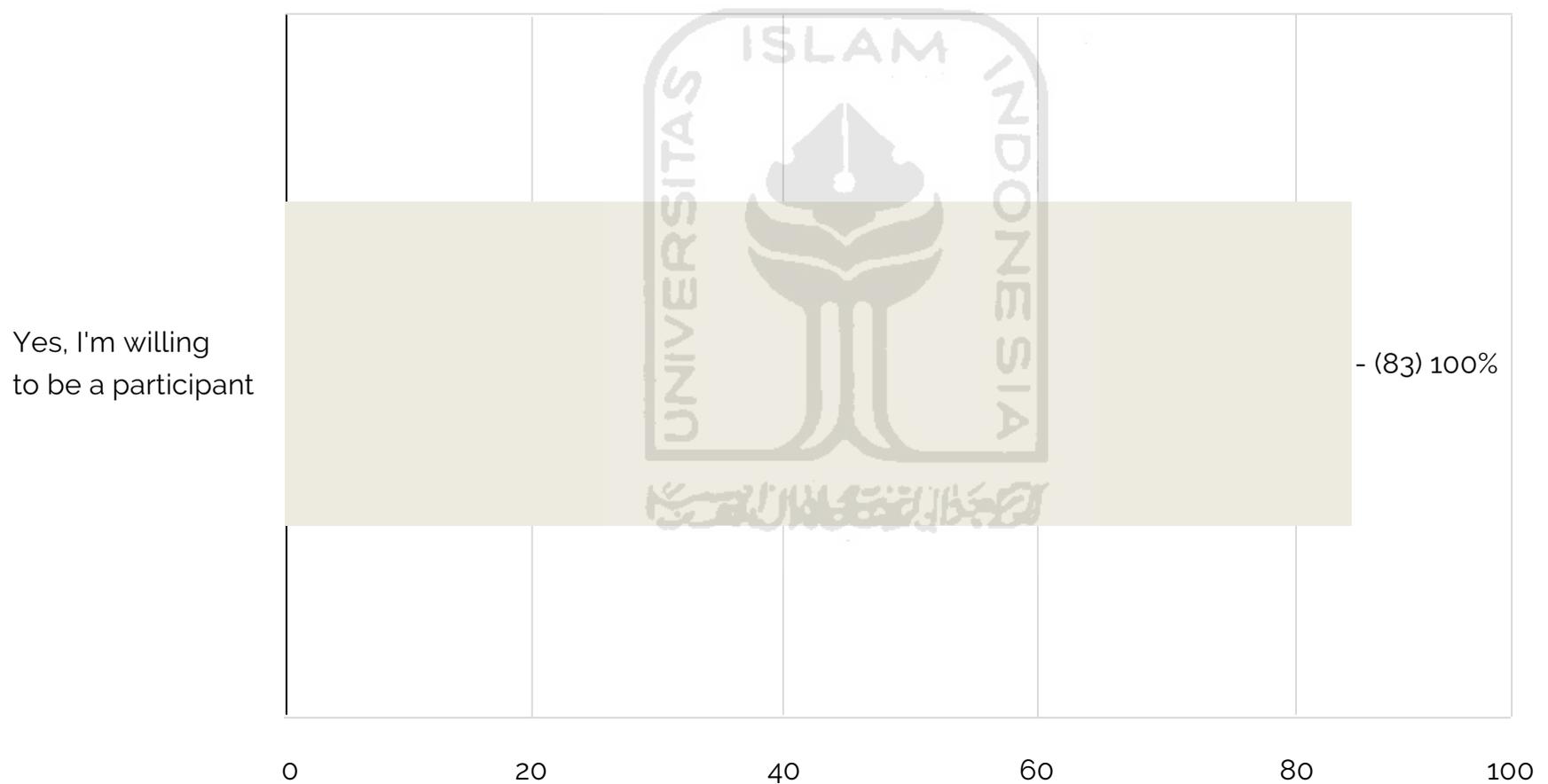
Source: Author (2021)

**Located here.**



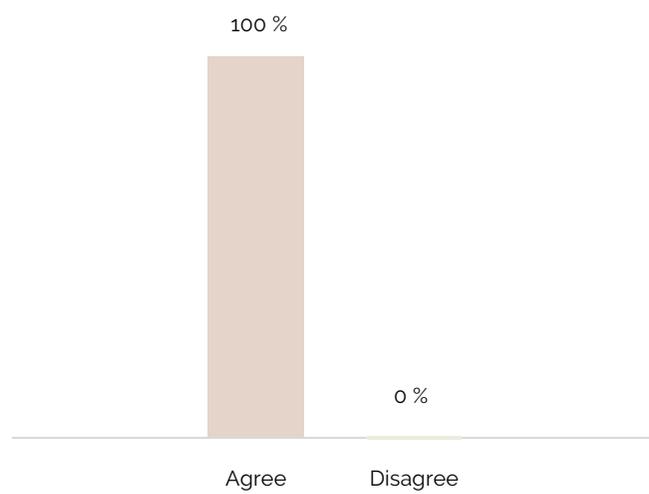


# Design Testing: Questionnaire

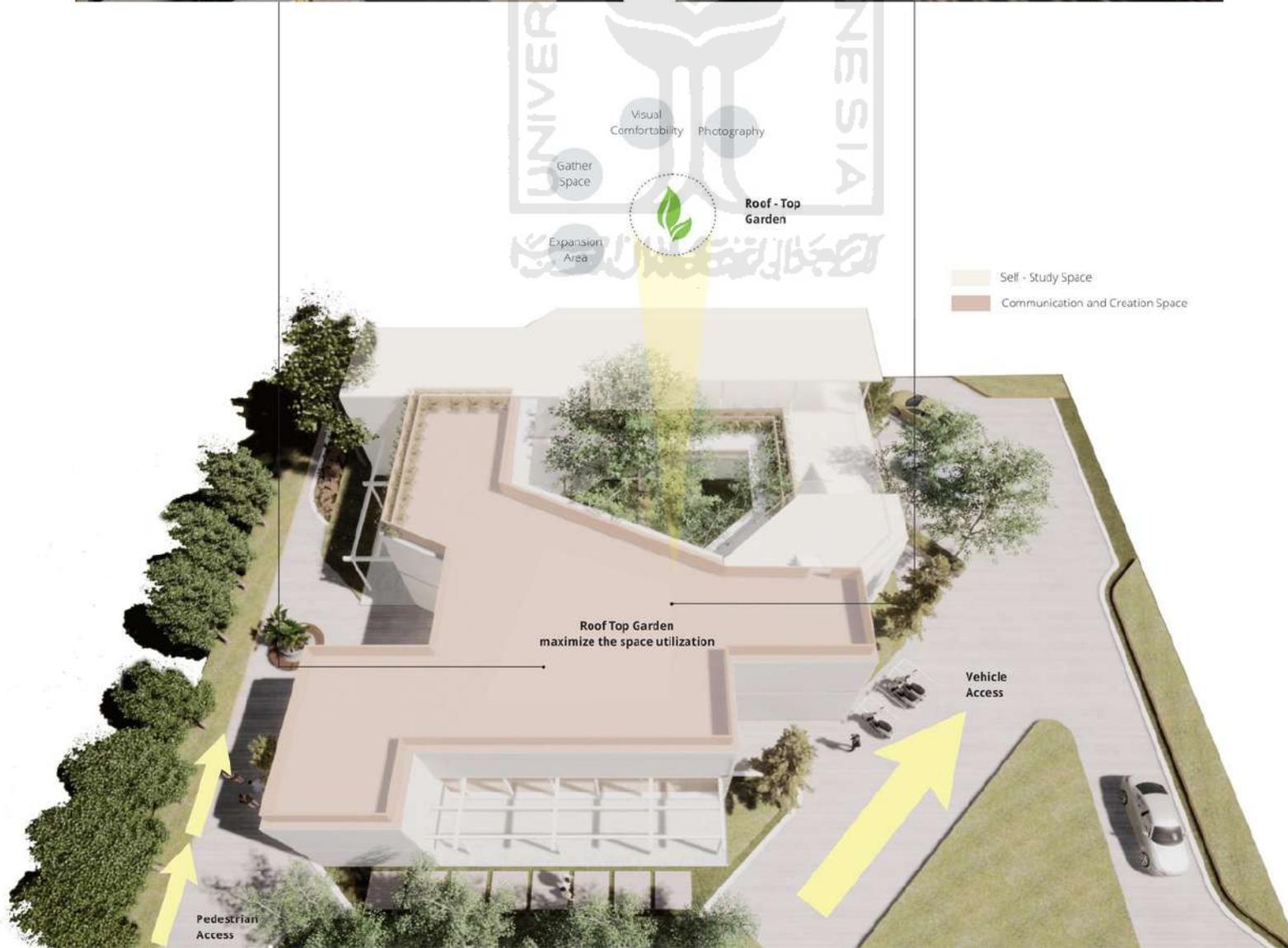
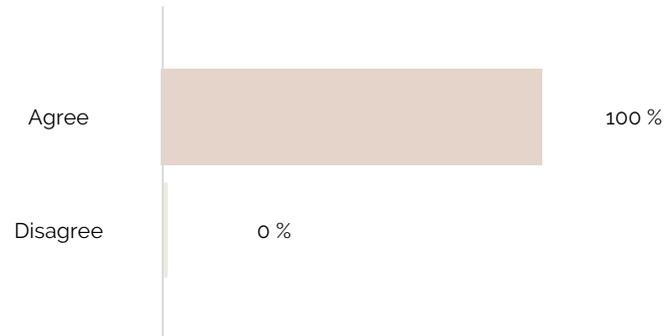


Access Here:  
<https://forms.gle/iuzgBwyhhRgXXjJ46>

Creative space with an approach to nature and open space has a good influence on the level of productivity.



The existence of a rooftop garden as a space for creativity and mind-refreshing





Before Expansion

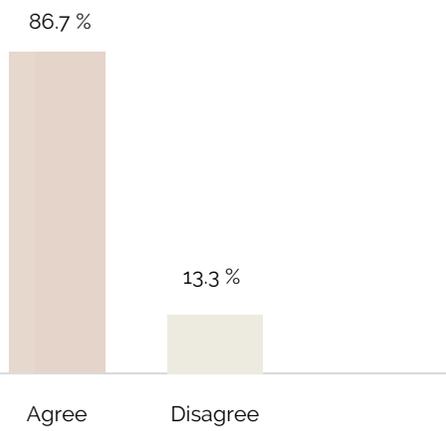


After Expansion

Could be expanded during the Pandemic in the aim to get more space - physical distancing purposes. Creating more space to work both on the first floor and the second floor.

Smoking Area  
2nd floor - studio A

The use of partition walls as walls as well as floors and roofs is quite efficient in responding to the pandemic era by considering the addition of space requirements.



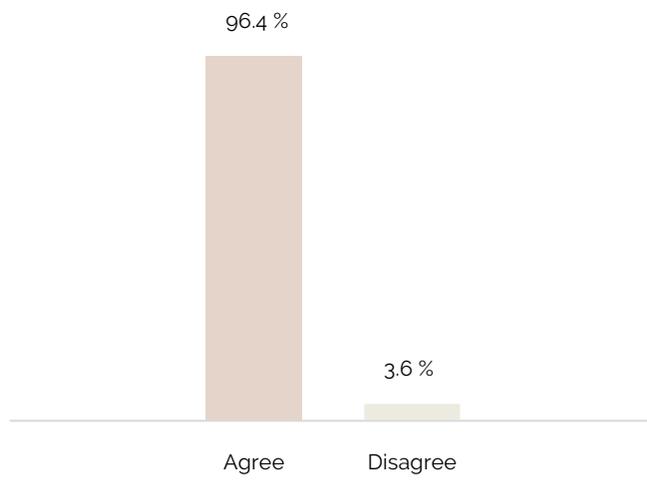
Before Expansion



After Expansion

Could be expanded during the Pandemic in the aim to get more space - physical distancing purposes. Creating more space to work both on the first floor and the second floor.

Utilization of VR and AR technology with the aim of saving space usage can be said to be quite efficient and has its own uniqueness that could attract people to comes in.



**Travelling & Cultural**

KUWAS Community that engaged in traveling and cultural things. With VR technology, allowed people to go to some places such as the equator monument or another city landmark to learn and add new insights.

VR SIMULATION

**Art & Photography**

LIPart and POTION Community that engaged in visual, art, animation, photography, and videography. With VR technology, allowed them to held an art exhibition with a minimum amount of space.

VR SIMULATION

**Product Information**

**AR Barcode Scan**

Using AR technology, allows people to try the product just using their phone camera. For the example, just direct their camera after they scanning the QR Code to their hand if they want to try bracelet product.

**AR Application**

- Specific Barcode
- Try it on
- Order
- Home Delivery

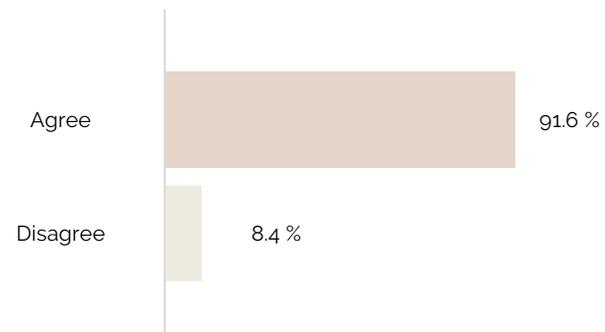
AR SIMULATION



Creation space - whiteboard walls could be used for creation purposes yet presentation for those who want to present or express their idea into a drawing or writing.



The use of whiteboard walls is considered quite efficient and practical.





Meet in  
The Open

Provision  
of Panel

Vending Machine - Food and Drink

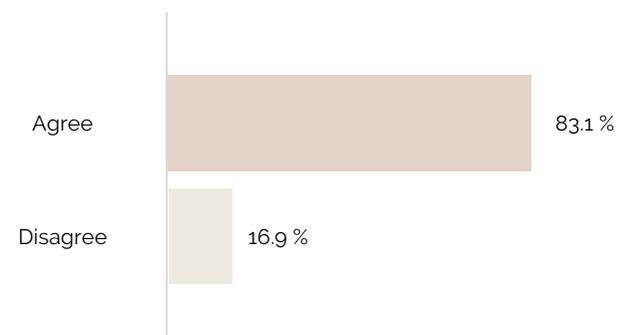
Provision  
of Hand  
Sanitizer

Provision  
of Sink



Panel - Reducing COVID 19 Transmission.

The provision and use of portable panels with the meet in the open concept can help prevent the spread of viruses.





Adding new kind of space : Remote Collaboration Space. Used for virtual communication - using for those people who held meeting online using zoom, google meet, etc.

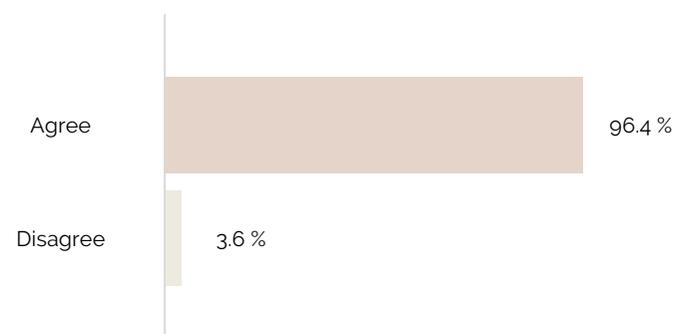
### Remote Collaboration

Indoor with Air Conditioning

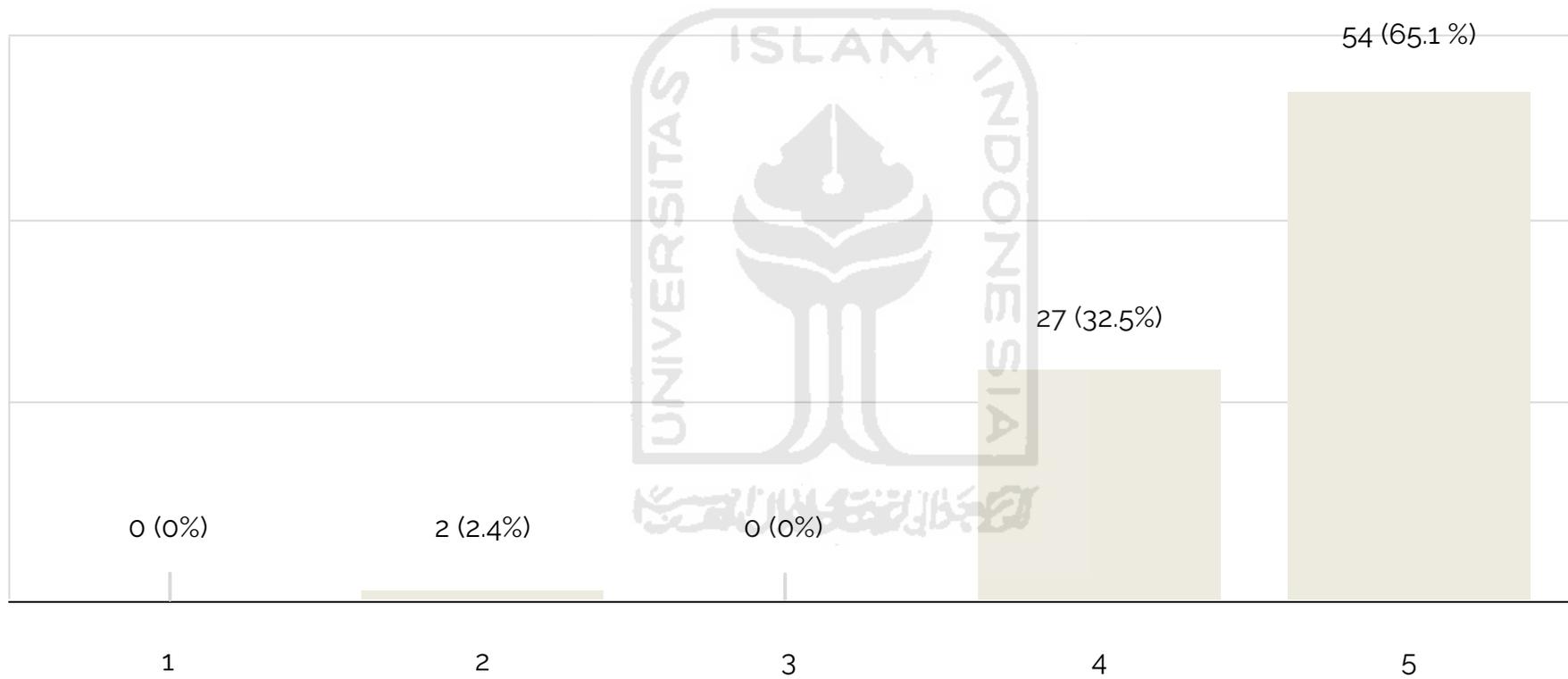


### Remote Collaboration

The provision of a new space function in the form of "Remote Collaboration Space" is considered quite effective in responding to the current pandemic era.

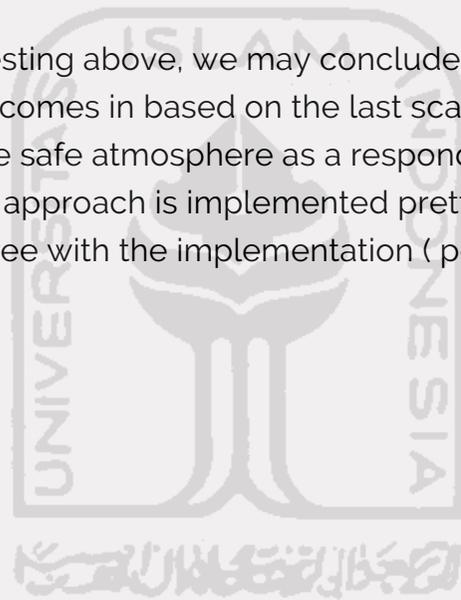


# How interested are you in visiting this creative space?



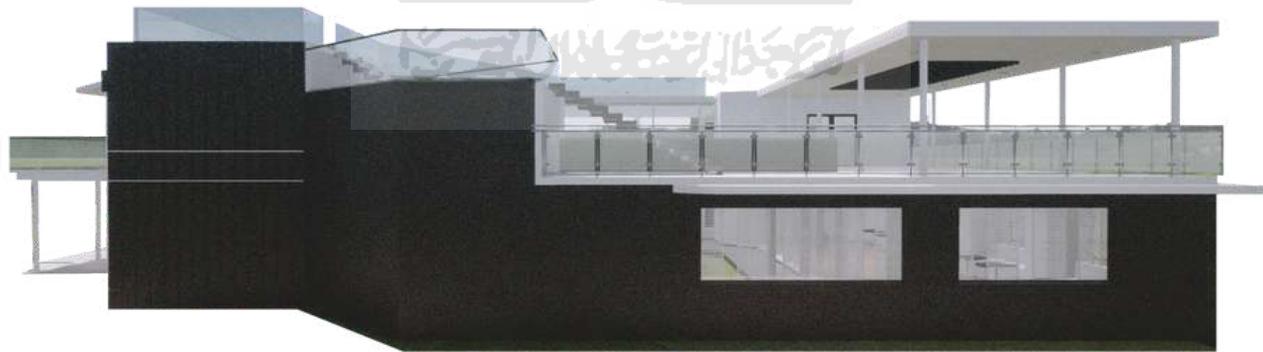
## Conclusion :

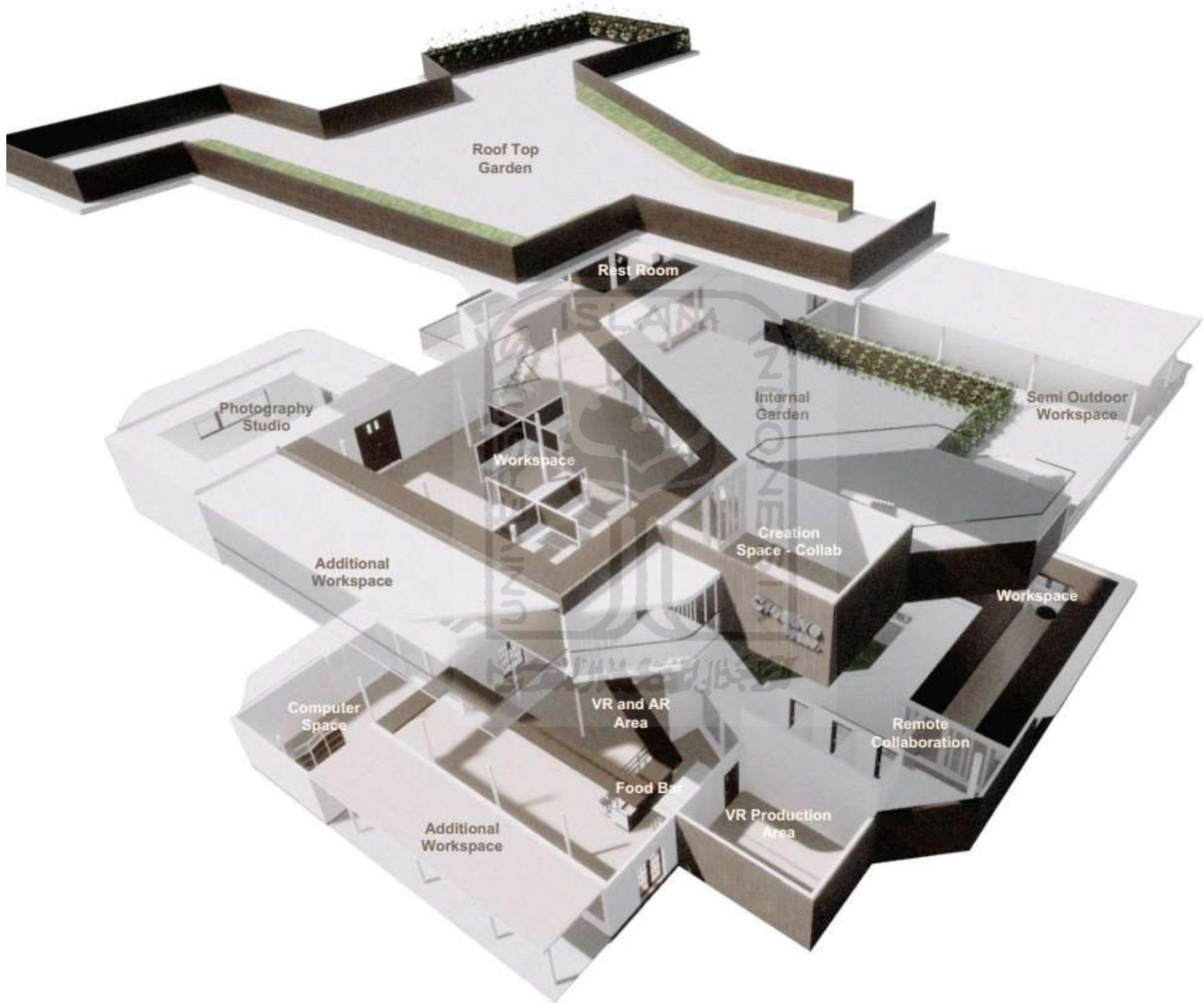
Based on the design result testing above, we may conclude that this design is quiet good yet attract people to comes in based on the last scale rating with utilizing technologies also it has more safe atmosphere as a respond to this pandemic. The environmental psychology approach is implemented pretty good at this design since all the respondent agree with the implementation ( point number 1 and 2 ).

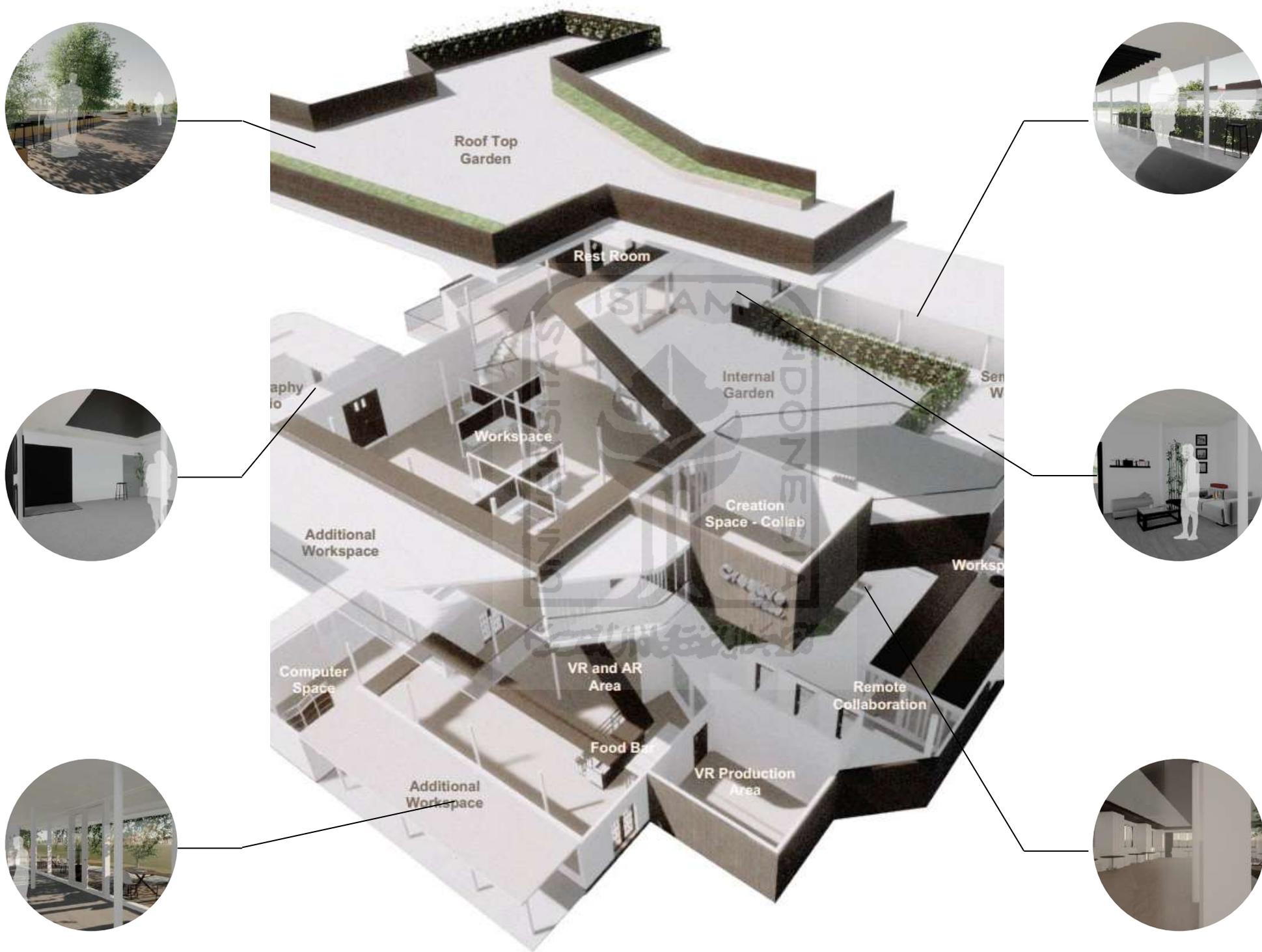


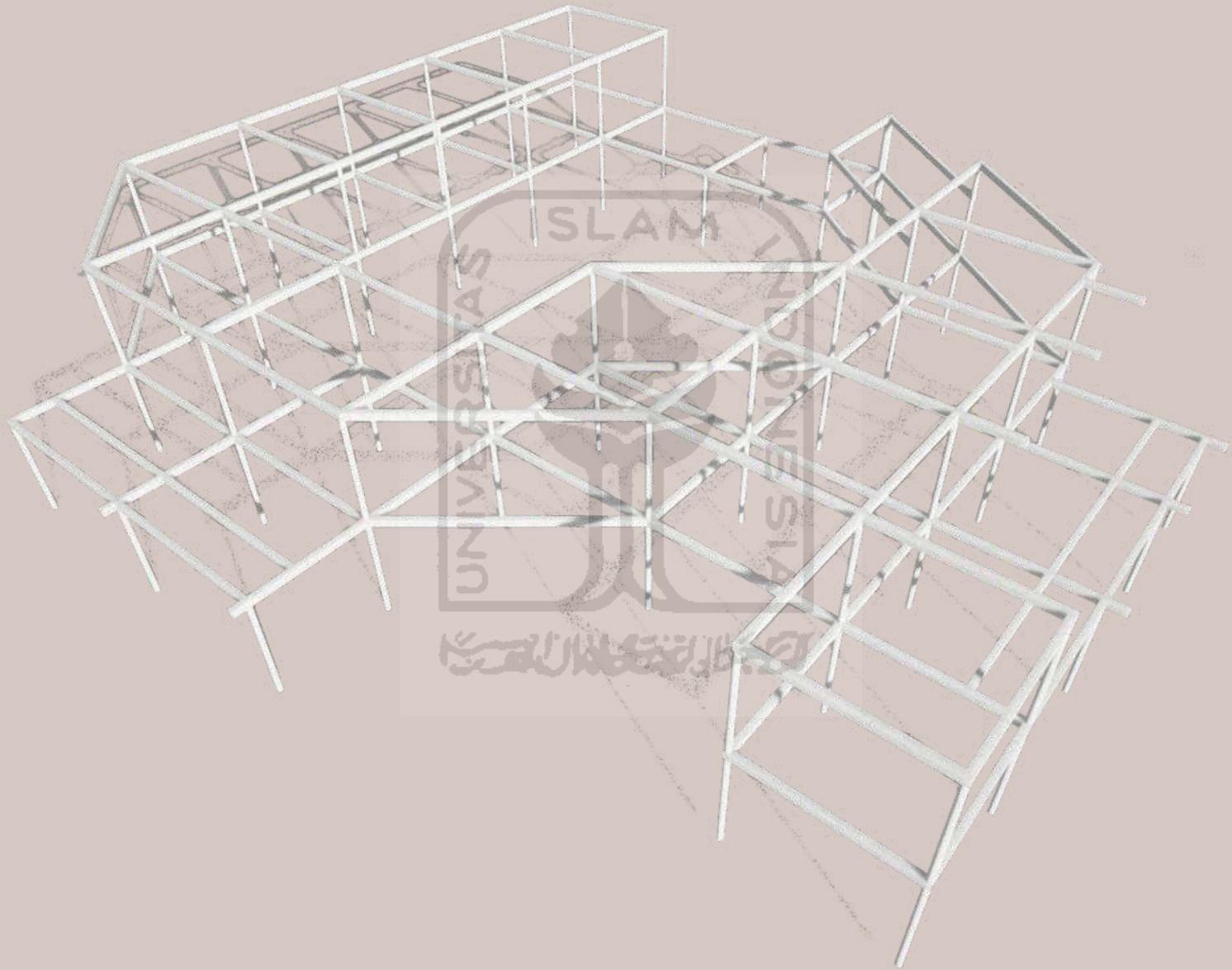






















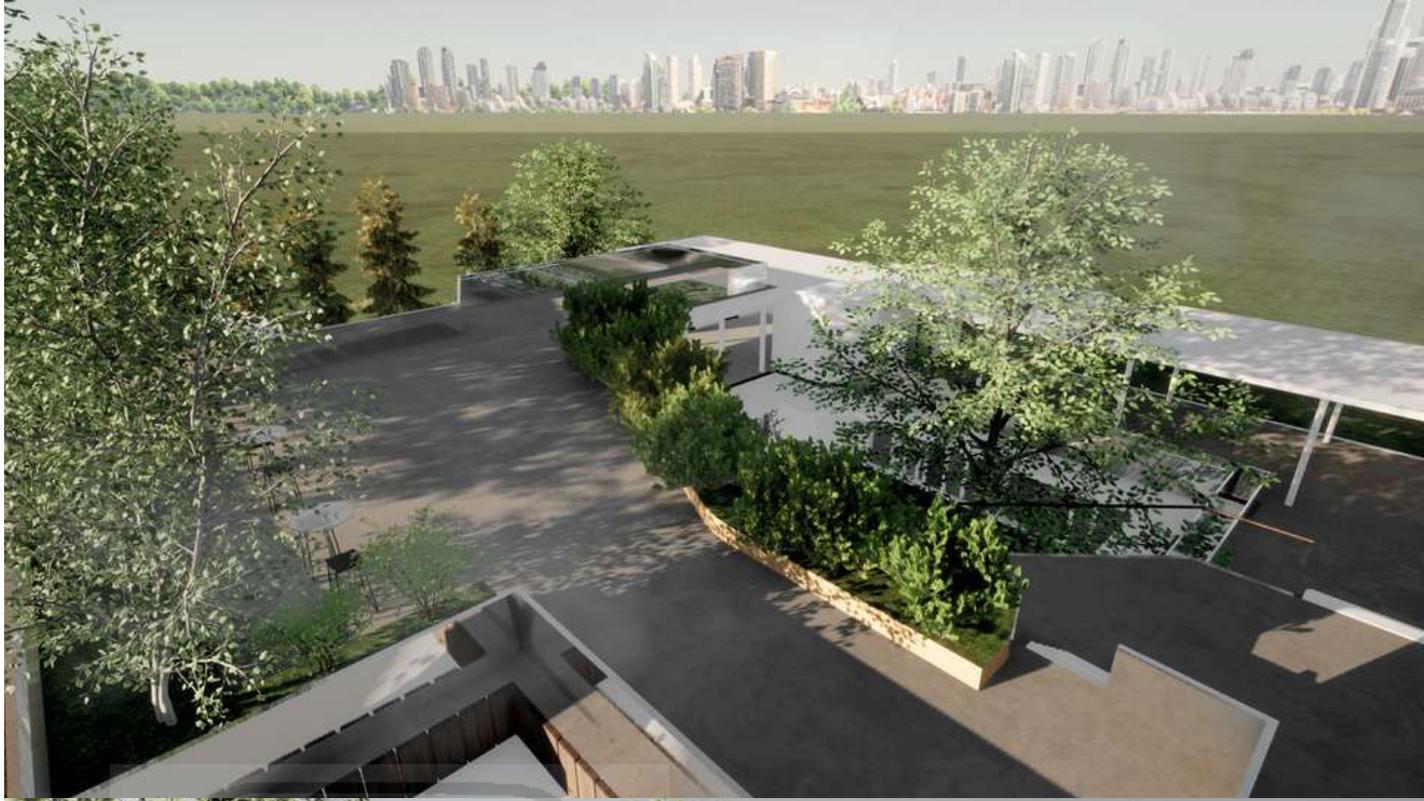














**1**

Technical error in technical drawing:

The absence of stairs, there is an error in the layer. Already fixed.

**2**

No furniture on each floor:

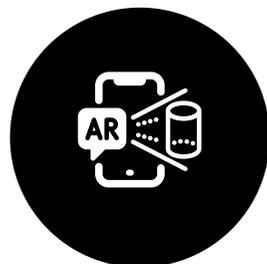
The addition of furniture on each floor. Already did.

**3**

"Smart" building:

The implementation of "smart" building itself in my building:

- Utilizing technologies such as AR and VR in the aim to attract more people also more effective in respond to the pandemic - space savings.
- Smart Automatic Door: equipped with temperature detection system sistem, could only open when the temperature is  $<37$  C.



# 4

## Creative space architectural element:

Creative space is really attached to the level of productivity of each users.

" After 10 years of researching the problem, **psychologists from Exeter University** found employees were **15 percent more productive** when even just a couple of house plants were brought in the office. They found that **looking at some greenery** could **boosts brainpower, improves mood and makes employees more attentive.** "





## SMART HYBRID CREATIVE SPACE

With Environmental Psychology Approach

"Creating social platform for learning and studying, welcoming all levels of participant."



**LOCATION** Perdana Street, Bansir Laut, Pontianak Tenggara Sub-district, Pontianak City, West Kalimantan 78115, Indonesia.

A new concept of creative space design by utilizing more into technologies yet responding to the current pandemic situation and is expected to be able to follow the next changes or be as flexible as possible welcoming all levels of participants. This new design unfortunately may lead into a several contradictions. TRIZ will be a design method that will solve the problem with 40 inventive principles. After the study and analysis was found 4 main solutions, namely: Bleeding in Design, Parameter Changes, Taking Out, and Inert Atmosphere.



### Map of The Issues

Pontianak was chosen as the city to fulfill the requirement of 1000 startups, but still lack of creative platform.

Pontianak was chosen as the city to hold the movement of 1000 startups, but still lack of creative platform.

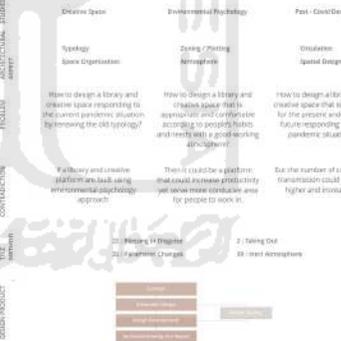
Practical Creative Platform

Applying environmental psychology approach yet keep paying attention to the Covid-19 health protocols

Creative space design located in Pontianak that could enhance people's productivity yet as a platform for creative actors but must respond to the current pandemic situation by reduce the transmission of infectious diseases.

### Design Thinking

Creative Space Design in Pontianak City with Environmental Psychology Approach



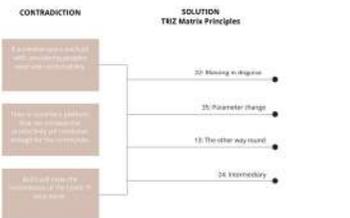
### About Location



**LOCATION** Perdana Street, Bansir Laut, Pontianak Tenggara Sub-district, Pontianak City, West Kalimantan 78115, Indonesia.



### TRIZ Method



Creating a space as flexible as possible responding to the current situation.

During - After Effects of Covid-19 Pandemic

# Architectural Presentation Board

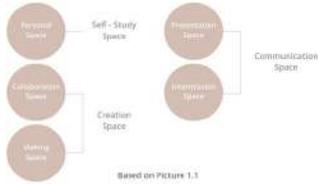


Picture 1.1 Building Explode

TRIZ METHOD : 22

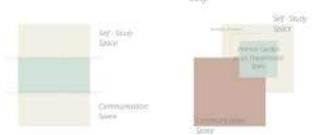
Blessing in Disguise

"Physical distancing as one of the pandemic effects creates a conducive and productive atmosphere for the users."



Based on Picture 1.1

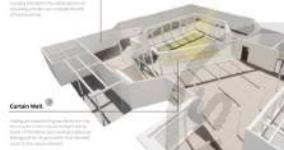
1. Communication and Self Study Space  
Requires calm and conducive ambience.
2. Creation Space  
Allows noise and air - spiciness colors.
3. Roof Top as an Additional Space  
let as an multifunctional space.
4. Internal Garden as an Intermision  
Researchers has been proved that natural element could enhance person's productivity.



Parameter Changes

TRIZ METHOD : 32

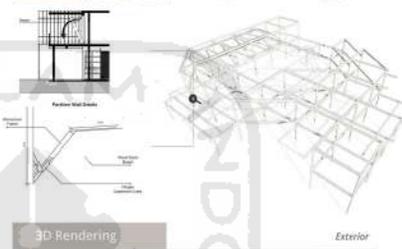
"Changing certain parameters to minimize the spread of the Covid-19 virus."



Expansion Area  
Could be expanded during the Pandemic in the aim to get more space - physical distancing purposes. Creating more space to work both on the first floor and the second floor.



Portable Panel



3D Rendering

Exterior



Front View

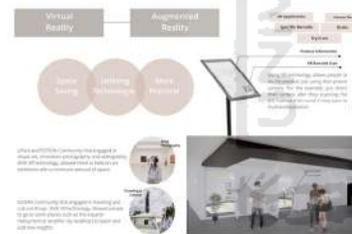
Right - Sided View

Left - Sided View

Taking Out

TRIZ METHOD : 2

"Changing or diverting some physical items to digital - space savings."



Inert Atmosphere

TRIZ METHOD : 39

"Creating a safe atmosphere by reducing the transmission of the Covid-19 virus."



Interior

3D Rendering



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