ENHANCING GEN Z'S SENSORY EXPERIENCE THROUGH MULTI-SENSORY SOCIAL SPACE DESIGN

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Abstract

Human existence has long been intertwined with nature and its elements. Before modernization and technology became part of our daily lives, our five senses (sight, hearing, smell, touch, and taste) helped us perceive and interact with the world. However, in today's digital era, we are increasingly disconnected from our environment. Our attention is consumed by screens, dominated by all things digital leading to a diminished awareness of the world around us. This disconnection is especially evident among Generation Z, who were "born to be digital". They may not fully appreciate the value of sensory experiences, relying on technology as a substitute. This impacts their well-being through cognitive, affective, and psychomotor aspects. Recognizing this, author proposes the design of a social space that is intended on rebuilding and reestablishing human sensory connections, especially for Generation Z, with their environment through three aspects: humans with nature and environment, with each other, and with themselves. The design of a multi-sensory social space serving as a third place for Generation Z is identified through theoretical studies, precedent studies, and questionnaires. The research results were implemented into the design through activities and programs to enhance specific sensory experiences. Consequently, design strategies include site design, access & circulation, space program & activity zoning, building massing, facade & opening, interior planning, and open space & green pattern planning.Additionally, site identification of Pondok Ranji, Bintaro was undertaken in hopes to restore the holistic relationship between humans and their environment.
Keywords: Gen Z, Sensory Experience, Third Place, Multi-senses Social Space

INTRODUCTION

Generation Z, often referred to as Gen Z, encompasses individuals born from the mid-1990s to the early 2010s. This generation is marked by rapid technological advancement and a culture of early digital device usage. The adoption of technology and digital tools has significantly influenced their mindset, work approach, and behavior. According to the 2023 Global Gen Stats by Earth Web, Gen Z constitutes 26% of the global population, roughly 2 billion individuals. In Indonesia, Gen Z represents the largest demographic, comprising 74.93 million people, or 27.94% of the total population. Millennials, on the other hand, are the second largest

generation in Indonesia, making up 25.87% of the population, as reported in the 2022 Gen Z IDN report. Despite developing after Millennials, Gen Z exhibits distinct characteristics and behaviors compared to their predecessors.

According to the Ministry of Education, Culture, Research, and Technology, there are five distinguishing features that set Gen Z apart from Millennials: (1) a global mindset due to easy access to information worldwide; (2) open-mindedness fostered by the vast array of global information, leading them to be more inclusive and open to diverse opinions; (3) proficiency with technology, growing up alongside its advancements, making technology almost a second nature to them; (4) a preference for limited physical interaction, as much can be done online; and (5) less firm beliefs and a less stable self-identity, influenced by their open-mindedness and receptiveness to differing views and information.

Gen Z is often referred to as the "born to be digital" generation. According to a Pew Research Center report, 95% of teenagers in the United States have access to smartphones, which have become central to their daily lives. The pervasive role of technology in the lives of Gen Z exposes them to both the positive and negative aspects of technology. They often face cognitive challenges such as excessive screen time, difficulty with focus and attention span, emotional challenges related to mental health issues and stress, and psychomotor challenges due to prolonged use of digital screens. The prevalence of smartphones among Gen Z has led to reduced outdoor activities, decreased face-to-face social interactions, and a potential disconnect from nature, phenomena often referred to as being a "homebody."

The concept of a homebody, as described in L.A. Porter's journal "Homebody During/In Crisis," portrays individuals who prefer spending more time at home, finding comfort and satisfaction in domestic activities and conditions. Urban dictionary defines a homebody as someone who enjoys the "warmth and simple pleasures of being at home." While the concept of a homebody has existed for some time, the pandemic and the rise of new media platforms have reinforced this lifestyle, as people have been forced to stay indoors and learn to find comfort in home based activities.

It's important to understand that this digital immersion also means that among the five senses, Gen Z relies heavily on their sense of sight. They are often glued to screens, from smartphones to laptops, and this visually-focused interaction has significant implications for their sensory experience. Excessive screen time and prolonged use of digital devices can cause eye strain, fatigue, and visual discomfort. Moreover, increasing dependence on gadgets and digital interfaces may diminish their experience of the real-world visual environment and potentially affect their overall well-being.

Humans tend to think, reflect, and imagine visually, as we are inherently visual creatures. In Juhani Pallasmaa's book "The Eyes of the Skin," modern technology's role in architecture is criticized for creating a sense of detachment from the physical environment. While traditional architectural practice has been dominated by vision, Pallasmaa argues that we should engage all our senses, including touch, smell, hearing, and even taste, to fully understand and appreciate

a space. Therefore, the roles of the other four senses must also be enhanced, not solely relying on visual activities.

The phenomenon of visual dominance emphasizes the importance of attention to all senses to create a healthy visual experience. Excessive reliance on vision can disconnect us from other senses, such as touch, which allows us to physically feel our surroundings; hearing, which influences our spatial interpretation and encourages designers to consider sound aspects; smell, which triggers memories and emotions and enriches our understanding of the world; and taste, which allows us to detect and distinguish various flavors and plays a role in spatial perception (Pallasmaa, 2012).

While vision provides crucial spatial information and aesthetic appreciation, it is essential to recognize the complementary roles of touch, hearing, smell, and taste in shaping our sensory experiences. Touch, for instance, enables us to physically engage with our environment, fostering a deeper connection and grounding us in the present moment. The tactile qualities of materials, textures, and surfaces convey information that cannot be fully grasped through sight alone. (Erwine, 2016)

Similarly, hearing plays a vital role in spatial perception and environmental awareness. The soundscape of a place—whether bustling city streets or serene natural settings—not only influences our mood but also provides cues about proximity, directionality, and ambiance. Designers who integrate auditory elements into their spaces can enhance user experience by creating environments that resonate with emotional and functional significance. (Lupton & Lipps, 2018),

Furthermore, smell serves as a powerful trigger for memory and emotion, profoundly influencing our perception of space. The olfactory system connects directly to the limbic system in the brain, which is responsible for emotions and memory. By incorporating scents into architectural design, such as the aroma of fresh flowers or aromatic wood, designers can evoke specific feelings and associations, enriching the overall sensory narrative of a place. (Erwine, 2016) (Lupton & Lipps, 2018) .

Moreover, taste, though less commonly integrated into architectural discourse, contributes to our spatial perception through culinary experiences and environmental context. The flavors and textures of food not only satisfy physical hunger but also shape our social interactions and cultural identities within a space. Restaurants, for example, often leverage taste as a central element in their ambiance, offering patrons a multi-sensory journey that extends beyond visual aesthetics. (Erwine, 2016) (Lupton & Lipps, 2018),

For Gen Z, the benefits of multi-sensory experiences extend across cognitive, affective, and psychomotor domains, addressing unique challenges they face in the digital era. A multi sensory environment can enhance cognitive function; an environment that includes touch, sound, and visual elements can improve retention, engagement, and critical thinking skills. Gen Z, who also confront emotional challenges, can cultivate deeper emotional connections with their environment and others, whether through shared comforting aromas or other elements. Furthermore, for individuals with disabilities, a multi-sensory

environment offers inclusive benefits, enhancing psychomotor skills by providing opportunities for tactile exploration and movement, suited to various physical abilities (Pallasmaa, 2012).

Architecture, as an intermediary art form between humans and the world through the senses (Bohme, 2013), plays a significant role in promoting the use of all five senses in shaping our environment. This is achieved through spatial planning and intentionally designed environments that activate all our senses, ultimately creating sensory interactions through building elements such as material selection, texture, lighting, and acoustics. By prioritizing sensory experience in the design process, architecture opens up opportunities for us to explore, appreciate, and connect more deeply with the world in a profound and multidimensional way.

The growing interest in third places among Gen Z as social spaces opens up opportunities for architecture to inject multi-sensory design concepts and strategies into the present era. The concept of third place was first introduced by sociologist Ray Oldenburg in his book "The Great Good Place" (1989), referring to informal gathering places outside of home (first place) and work (second place) where people come together to socialize, relax, and build community. These third places are recognized for their ability to offer comfortable and engaging environments that are highly relevant to this generation.

The pandemic conditions have emphasized the importance and need for third places; although some have grown accustomed to staying at home, the majority still crave connections and interactions outside. The pandemic has made people realize the importance of separating work from home, contributing to the development of third places in urban areas. One popular example of a third place for Gen Z is cafes and co-working spaces. Cafes, once merely coffee-selling establishments, have now transformed into third places for Gen Z.

The expanding influence of social media has also led people not only to seek culinary offerings such as delicious food at affordable prices but also the visual aesthetics of places or spaces. Although third places heavily rely on visual elements, it must be acknowledged that modern day third places present a range of sensory experiences more intriguing than what meets the eye.

The aroma of fresh coffee, the background sounds of visitors' conversations and clinking cups, and the tactile experience of table and chair materials all contribute to the charm of a cafe. As a result, cafes have evolved into creative hubs, offering visitors a compelling combination of sensory pleasures, enabling them to build interactions within that environment. However, Gen Z and subsequent generations may not consciously realize that it is the sensory experience they seek when choosing a cafe as a third place. This demonstrates how architecture influences our senses and underscores the importance of sensory experience in the design of spaces.

LITERATURE REVIEW

This research focuses on exploring design strategies for social spaces that can enhance the sensory experiences of Gen Z. The study begins with an exploration

of four aspects: Gen Z, sensory experience, third place, and multi-sensory social spaces. Through this exploration, elements and types of spaces that can enhance sensory experiences were identified. Nine architectural elements (form, light, color, material, size, pattern, distance, nature, temperature) become the design strategies for multi-sensory social spaces.

Gen Z & Its Challenges

Generation Z, the largest group in Indonesia (27.94% of the population), is characterized by a global mindset, openness, technological proficiency, a preference for online interaction, and unstable self-confidence. Merriman highlights self-awareness and an entrepreneurial spirit in this generation.

As "born to be digital," Generation Z has extensive access to technology, with 95% of American teenagers using smartphones as a central activity. Their challenges include the negative impacts of technology, such as increased depression. Technology also affects behavior, especially excessive gadget use and a decline in face-to-face social interactions, leading to the "homebody" phenomenon among Gen Z.

Sensory Experience

Sensory experience refers to the ability to capture and interpret stimuli through the senses. This occurs continuously while interacting with the environment, aiming to create deep experiences that enrich the connection with the world and contribute to self-understanding and reality.

Spatial experience, as described by Lupton & Lipps (2018), involves all senses and occurs while exploring the surrounding environment, including seeing, hearing, feeling, smelling, and touching. The five senses work together to provide a comprehensive understanding of the environment and play a crucial role in perception, emotions, and overall well-being (Drake, 2014). Through these five senses, a collection of perceptions is obtained.

Image 1 Perception of the Five Senses. (Source: Edgar processed from Erwine (2016) and Lupton & Lipps (2018), 2024)

Third Place

The concept of the third place was introduced by sociologist Ray Oldenburg in his book "The Great Good Place" (1989). According to Oldenburg, third places are informal gathering spots outside the home (first place) and workplace (second place) where people socialize, relax, and build a sense of community.

In third places, individuals gather to participate in communal activities, exchange ideas, and build social connections. These spaces are often found in the form of cafes, libraries, parks, and community centers. Four categories of activities favored by Gen Z were identified:
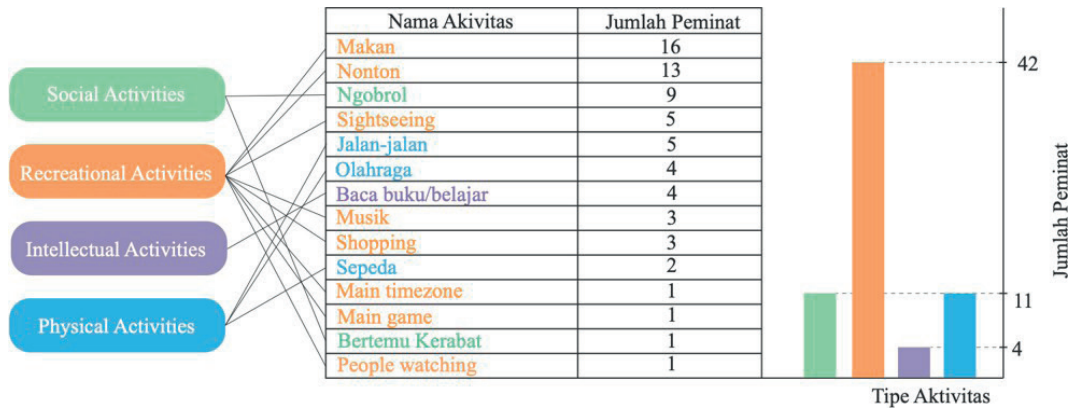
Image 2 Gen Z's Questioner Activity Answer. (Source: Edgar, 2024)

Multi-Sensory Social Spaces

Claude Levi-Strauss introduced the concept of social space as a place of social interaction and the relationship between social and physical structures, considered the basis of identifiable structures through observation of interactions. The concept of multi-sensory social space emphasizes the importance of sensory experiences and opens opportunities to create inclusive spaces.

In architecture, sensory experiences play a key role, influencing the understanding and interaction with the environment and social places. Juhani Pallasmaa asserts the central role of sensory experiences in forming deep connections with places and social interactions, through the senses that can enliven imagination and shape profound relationships with the environment and individuals (Pallasmaa, 2012).

By designing architectural and social spaces that consider the unique characteristics of a location, we can form deeper connections with the environment and between individuals in society (Spence, 2020).

Architectural Elements and Requirements

Based on the data obtained previously, a collection of elements for each sense can be compiled, and how these elements can affect each sense. These elements can be synthesized into nine architectural elements:

Table 1 Multi-sensory Architectural Elements and Requirements. (Source: Edgar, 2024)

METHODOLOGY

This research began with identifying the main issue, which serves as the starting point for developing the idea: the importance of educational needs for the younger generation and the existence of museums as interactive areas for preserving history and culture. The theoretical study used to address this issue relates to Gen Z, Sensory Experience, Third Place, and Multi Social Space. The study draws from various sources, including journals such as "Senses of place: Architectural design for the multisensory mind | Cognitive Research: Principles and Implications" and "Generation Homebody." Additionally, various books such as "Senses of place: Architectural design for the multisensory mind," "Cognitive Research: Principles and Implications," "The Eyes of the Skin," "The Elements of Architecture," and "The Third Place. Qualitative Sociology" were consulted.

After establishing the problem background and theoretical study, the research continued with the creation of questionnaires aimed at gathering preferences and sensory experience needs from 90 respondents. This process also identified the types and activities of multi-sensory experiences to be integrated into the design. Subsequently, an in-depth precedent study was conducted to learn about the integration of multi-sensory architectural elements and requirements in design strategies. This was explored through precedents such as the Shanfeng Academy and O-POWER Culture and Art Centre.

Finally, the research results were applied to the design process through the implementation of obtained design strategies, including site design strategies, access and circulation strategies, space program and activity zoning strategies, building massing strategies, facade and opening strategies, interior planning strategies, and open space and green pattern planning strategies. These strategies

were integrated into the Pondok Ranji, Bintaro, to create a multi-sensory design aimed at forming a holistic relationship between humans and their surroundings.

RESULT&DISCUSSION

A. Site Plan Design
The site plan is designed based on zoning obtained through the design intention to create a multi-sensory space that enhances sensory experiences and reconnects humans with three realms: nature, others, and themselves.

Consequently, three major zones have been formed, which will then be developed and integrated with space activity programs. Through these three site zones, the site features a more dominant open space compared to enclosed building space. This aligns with the intention to engage with the outside world. The zoning can be seen in the image below:

Image 3 Block Plan Design. (Source: Edgar, 2024)

In this zoning, activity spaces are integrated both indoors and outdoors, which then define the massing on the site. Through the block plan above, we can also discuss the journey and movement flow on the site that guides visitors from the dominance of visual sense towards a site designed to encourage the use of other senses.

Additionally, in the self-connection zone, four buildings are formed to support and create multi-sensory experiences for activities like library use, yoga, and workshop-exhibitions. The site plan also includes a food area that serves as the meeting point for the three zones and creates a multi-sensory experience. Below is the shape and description of the food area:

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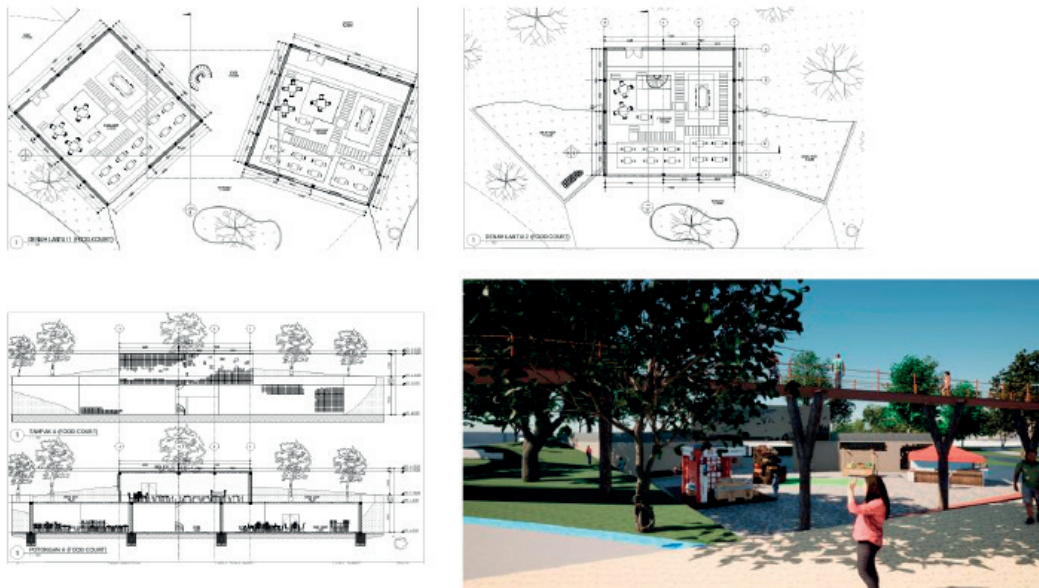
Image 4 Food Area Intervention. (Source: Edgar, 2024)

B. Entrance and Flow

The design of the entrance and flow is intended to guide visitors from their everyday experience of low sensory engagement and visual dominance towards the intended experience of the site. Therefore, the entrance journey is crucial. The site features four entrances, with two primary entrances: one from the main lobby and the other from the station extension. The movement and spatial experience of these entrances are illustrated in the diagram.

Image 5 Entrance and Transition Space Sequence. (Source: Edgar, 2024)

One of the strategies identified in the research is the facade strategy, which leverages material elements. All four site entrances are designed us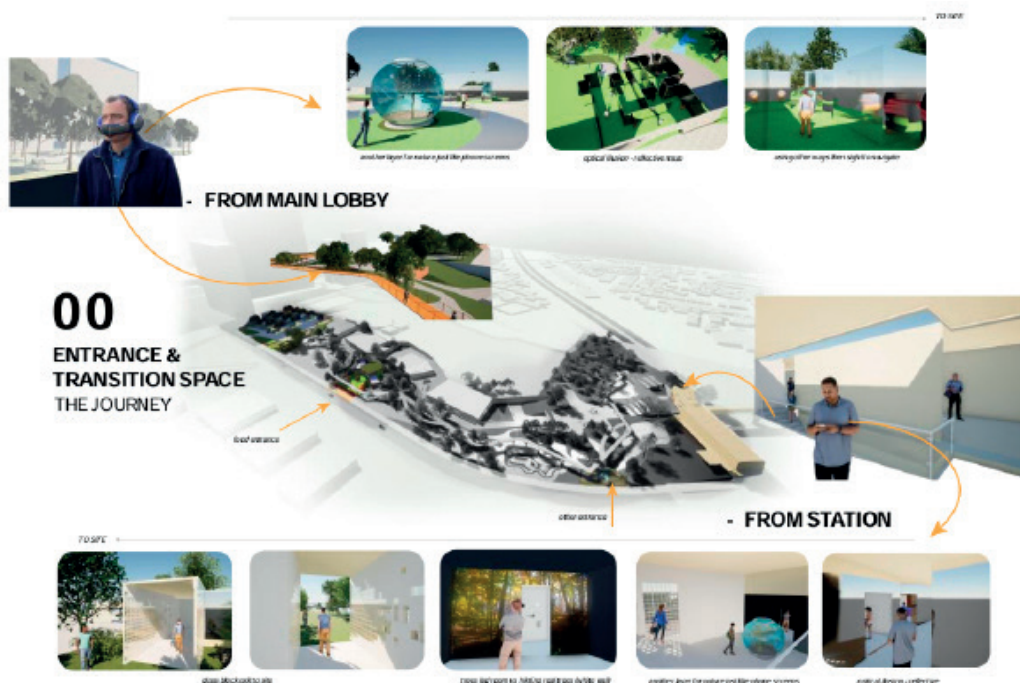ing the same material language, employing reflective materials to create optical illusions. These optical illusions serve as a method to challenge the dominance of visual perception. At the main entrance, a reflective maze creates a sense of confusion, encouraging the use of other senses for navigation, along with a ramp that leads visitors into the site via a bridge connected to the station.

Image 6 Reflective Maze Entrance Interior. (Source: Edgar, 2024)

At the station entrance, the circulation is designed to guide visitors from the bustling station into the site. The journey begins in the station's retail area, featuring a reflective facade that creates a sense of confusion. Visitors are then led into an LED room displaying images of greenery on screens, mimicking the provocation of gadget screens throughout the day. Gradually, the path transitions to the site using glass blocks arranged in patterns that symbolize openness to nature.

Image 7 Station Entrance with Glass block Design. (Source: Edgar, 2024)

C. Sensory Zoning with Nature

The human-to-nature zone is elevated on the site through a bridge that also functions as a walkway connected to the station, making it a raised pathway immersed in nature. The human to-human zone, on the other hand, is designed to encourage public activities such as skateboarding, playing, and relaxing, fostering real-world connections outside of the virtual realm.

Image 8 Zoning with Nature. (Source: Edgar, 2024)

D. Sensory Zoning with Self

This zone includes three activities housed in buildings whose forms are derived from the site's axes and lines, situated 4 meters below ground level to ensure privacy. This zone occupies 20% of the total site area.

The buildings for the library, yoga, and workshop-exhibition have monotonous facades and are not immediately visible from above the site. The library room is intended to enhance the olfactory experience while reading. It features four types of reading spaces with different themes centered on the quality of aromas created. This area incorporates materials and their relationships with the senses. The images below illustrate the four themed rooms: old vintage library, beach reading, garden reading, and a regular reading area.
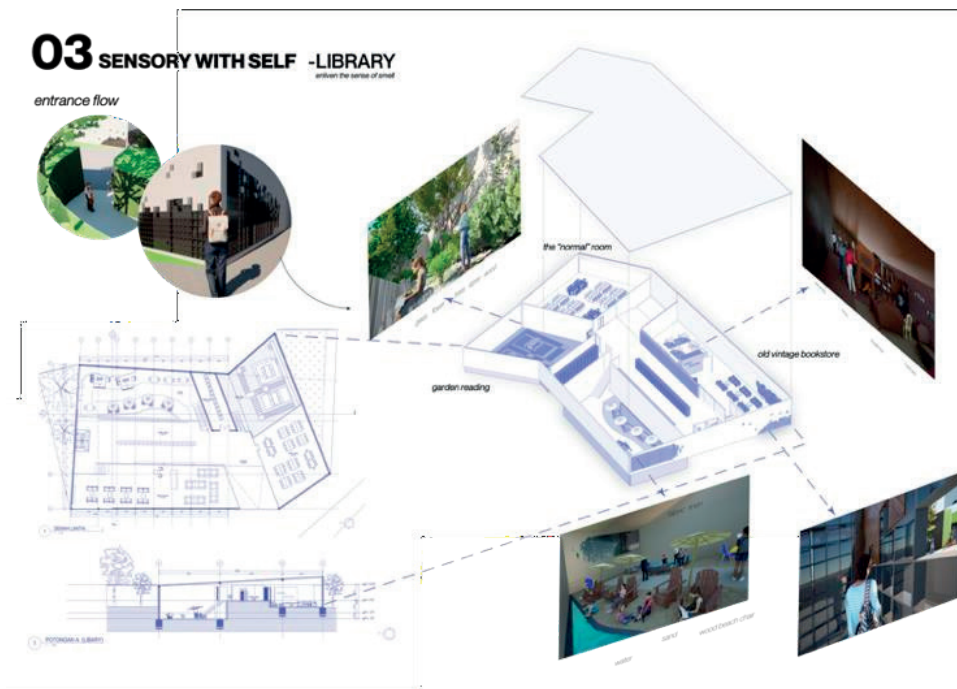
Image 9 Library Interior Intervention. (Source: Edgar, 2024)

For the yoga space, the design intention is to enhance the auditory experience, so the yoga area is designed using materials and room shapes that provide excellent sound quality. The entrance area also features a transition space with noise-reducing materials. Further details can be seen in the interior images of the Yoga program space.
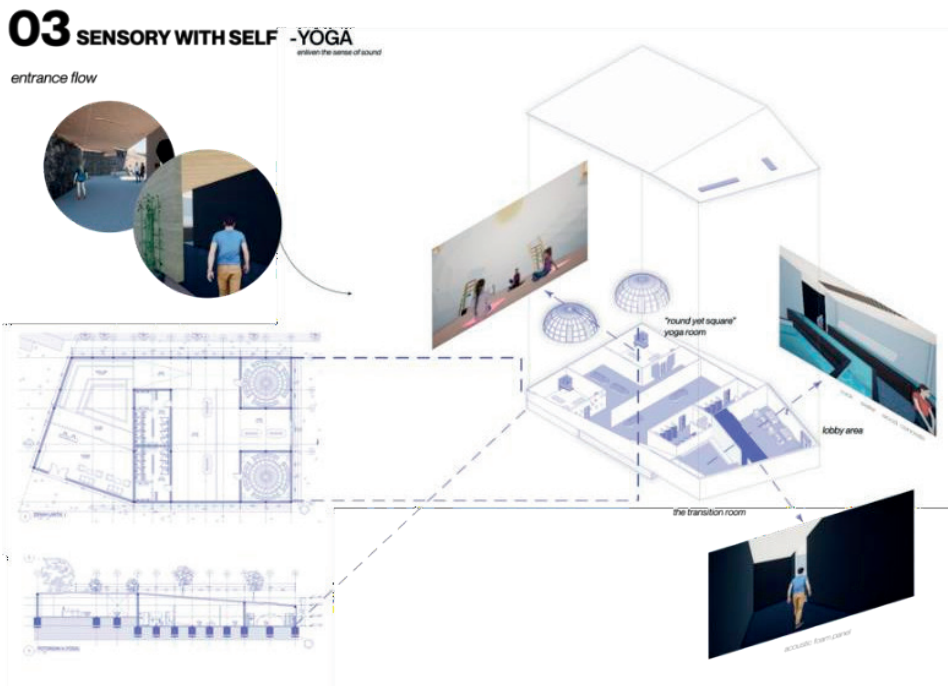

Image 10 Yoga Interior Intervention. (Source: Edgar, 2024)

For the workshop space, the design intention is to enhance the tactile experience, incorporating varied room shapes, diverse materials, material qualities, and exploratory space sizes. The workshop offers two programs: a soft crafts class for activities like sewing and tufting, and a sturdy and rough crafts class for activities like pottery making. These themes are also reflected in the exhibition area, which utilizes building elements to showcase the works.
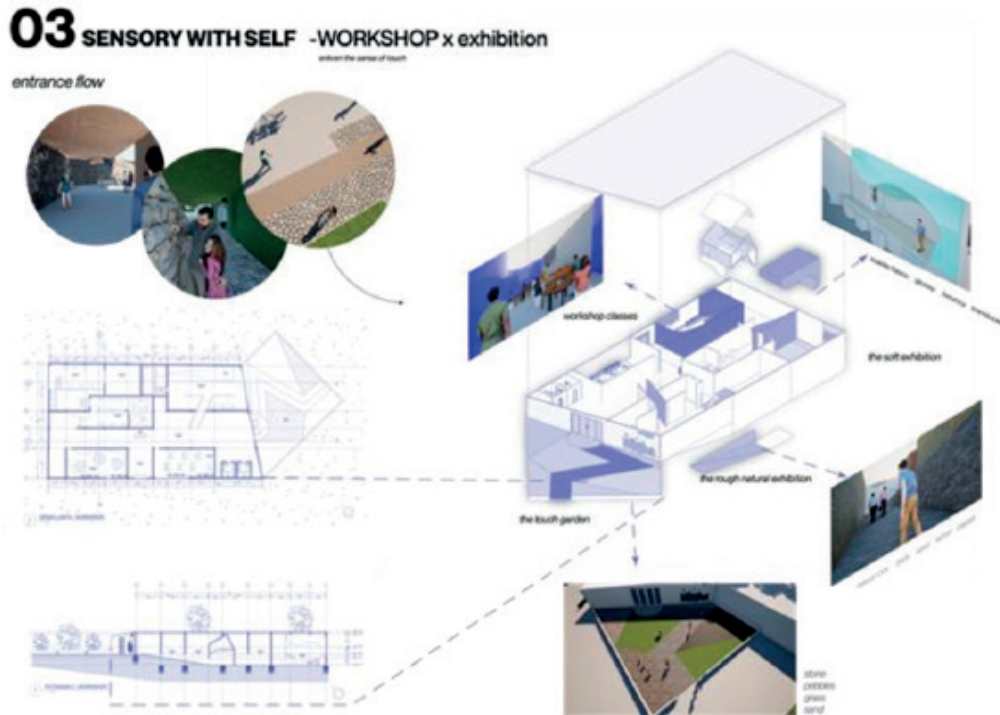

Image 11 Workshop and Exhibition Interior Intervention. (Source: Edgar, 2024)

CONCLUSION

As the phenomenon of third places grows among Gen Z and other groups, the design of social spaces has greater potential. In today's digital era, Gen Z and other generations face the dominance of the visual world. Technology, seemingly becoming a new human sense, has led to a disconnection from the surrounding multi-sensory world. This technological dominance impacts life and interactions, causing disconnection from nature, other people, and even oneself.

Based on these issues, this research poses several questions: (1) How can zoning and spatial division enhance Gen Z's sensory connection with their surroundings?; (2) What spatial programs and multi-sensory social activities as a third place can enhance Gen Z's sensory sensitivity?; (3) How can design elements and strategies be implemented in the site and plan?; and (4) How can a multi-sensory social space for Gen Z be designed in the Pondok Ranji, Bintaro area? Addressing the phenomenon of disconnection, the three impacts (nature, others, and self) form the zoning concept for site layout.

The research analysis was obtained through literature review, precedents, and

a questionnaire targeted at 88 respondents. Social space types and activities collected for the design are categorized based on the senses to be enhanced during activities. For example, library activities were found to have weak olfactory sensory experiences; therefore, the design focuses on enhancing the olfactory experience while considering other senses. Other activities include yoga (enhancing auditory experiences), workshop-exhibitions (enhancing tactile experiences), and a dining area as a taste sense uniting the three zones.

Using the above analysis methods, nine elements and their requirements for multi-sensory design were identified: form, light, color, texture & material, size & scale, pattern, distance & connectivity, natural elements, and temperature. These elements were also found in the precedent studies conducted. From these elements and analyses, seven design strategies for multi-sensory social spaces were developed: site planning strategy, access & circulation strategy, space program & activity zoning strategy, building massing strategy, facade & openings strategy, interior planning strategy, and open space & green pattern strategy.

By compiling activity types, elements and requirements, and design strategies, the issues of low sensory experiences and disconnection are addressed through the integration into the social space design. Additionally, the design development responds to site conditions, considering surrounding elements and the existing site form. Located near Pondok Ranji station, the site becomes a third place that attracts visitors to experience an exploratory, recreational, journey-filled, and interactive multi-sensory social space.

This research acknowledges its limitations. The focus was on Gen Z demographics, but it is hoped that the findings can be developed to be more inclusive of previous and future generations. The design focus is on social spaces, but it does not preclude the possibility of applying these findings to other design areas. With the conclusion of this research, the author hopes it contributes to society and serves as a reference and inspiration for further design development.

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