

# Healing Architecture for the Blind (Totally Blind) Case: Bekasi City Patriot Extraordinary School

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**Abstract:-** Statistical data indicates that the number of blind people in Bekasi fluctuated between 2018 and 2023, with a total of 76.67% or around 961 people. The condition of existing facilities does not match the presence of difference ability in Bekasi City, as stated in the percentage value above. To make Bekasi City accessible to people with difference ability, the Mayor of Bekasi established the first special school for people with difference ability in the city. Healing architecture has a definitional approach that aims to restore or heal both physically and emotionally, so that its application is aimed at users who are in the process of physical and mental recovery. The focus of the research is on implementing healing architecture for the blind, case in SLB Patriot Bekasi City. It is hoped that the elements contained in the healing architecture will achieve well-being in reaching facilities easily through sensory stimulation. If other senses are not functioning optimally, they can be strengthened by other senses without facing physical limitations.

The research aims are: 1. Therapeutic architecture and life-enhancing experience methods are used to achieve healing architecture as a form of tactile sensory response. Well-adapted in the school environment. This research method uses qualitative to understand blind users in using tactile, sensory, involving 1 student and 1 female student. The results of this research are architectural elements that serve as a reference in the design of school buildings for the blind or visually impaired through the application of healing architecture using 2 methods, namely therapeutic architecture, and life-enhancing experience.

**Keywords:-** Healing Architecture , Totally Blind Person.

## I. INTRODUCTION

Statistical data shows that Bekasi City saw changes in the number of blind individuals between 2018 and 2023, with an average of 76.67% or approximately 961 people. The percentage value above indicates that the condition of existing facilities does not match the presence of people with different abilities in Bekasi City. The city of Bekasi is considered not yet friendly to people with disabilities, the provision of special facilities in many sectors is considered not optimal, such as infrastructure, economy, employment, sports, and education.

According to Paini, who leads the Bekasi Association of Indonesian Women with Disabilities (HWDI), the government has failed to provide the best attention to disabled people in Bekasi City. It is concerning to realize that the affordability of facilities that aid in the mobilization of people with different abilities individuals is not optimal. Accessibility is defined as the convenience provided for people with different abilities in realizing equal opportunities as stated in Article 1 paragraph 8 of Law No. 8 of 2016.

To create a city that is friendly for people with disabilities, the Mayor of Bekasi established the first special school for people with disabilities in Bekasi City. Built in early 2020 in one of the South Bekasi Districts, it is known as the SDLB/SMPLB Integrated Disability School (Physical and Visual Sensory Disability) under the auspices of the Bekasi City Education Office. In 2023, the name was changed to SLB (Special School) Patriot Bekasi City, and the management was altered to Bekasi Patriot Dharma Wanita Foundation. This school is for children with special needs, specifically blind, deaf, speech impaired, double impaired, physically impaired, and mentally different.

The school is adapted for people with different abilities, adaptations in the building include the use of stair access as an inclined plane or a ramp adapted for wheelchair users, hand railings on the access ramp to the second floor and the use of guiding blocks/tactics. Has the Bekasi City Patriot SLB school building's facilities and accessibility been optimized by these adjustments?

The cause of blindness or visual impairment can be accidents that affect vision, and it can occur from or after the baby's birth. For the blind, accidents are more difficult to accept, in this case it affects the mental and psychological condition of those who were previously able to see easily but, on the other hand, found it difficult or even unable to see. A rehabilitation process is needed for this transition. This condition can present challenges such as difficulty and limitations in seeing, recognizing, and reaching objects around them. Therefore, in its implementation, using healing architecture as a basic principle in reaching facilities that are accessible, easy, ergonomic, comfortable, and safe can be achieved.

Healing architecture defines an approach that leads to recovery or healing, both physical and emotional, so that its application is aimed at users who are in the process of physical and mental recovery. The definition can be interpreted more broadly, not limited to healing, recovery, or alleviating stress, but rather the close relationship between space and humans in gaining environmental and spatial recognition through stimulation of applicable parameters.

The research's background emphasizes the use of healing architecture for the blind. Cases: SLB Patriot Bekasi City. The healing architecture's elements will help achieve well-being by facilitating easy access to facilities through sensory stimulation. If other senses are unable to function optimally, they can be strengthened by other senses without any difficulties due to their physical limitations. To control the environment and encourage independence for all people with different abilities.

Based on the research background, the problem formulation is as follows: 1. How to prove the application of healing architecture elements through the therapeutic architecture and the life-enhancing experience method for the blind (totally blind).

The aims of this research that will be achieved are as follows: 1. Achieving healing architecture using therapeutic architecture and life-enhancing experience methods as a form of tactile sensory response; 2. Achieving the blind is well-adapted to the school environment.

## II. LITERATURE REVIEW

### A. *The Blind Person*

Children with special needs (ABK) can be called (different abilities), children who have different characteristics in general that can be seen through physical and non-physical. One of the many people with disabilities, in this research involves the blind or visually impaired in the totally blind category as users in the field of architectural science. Total blindness is a condition where a person cannot see light, color, and objects. Blind people consisting of 1 student and 1 female student are caused by Retinopathy of Prematurity (ROP), an eye disorder that causes blindness, caused by premature birth. So that blindness has been experienced by students since they were babies.

### B. *Healing Architecture*

Healing architecture is an architectural approach with principles that have resulted or impacts for users, quality of experience, increased effectiveness, and significant change. Through the principles above, it requires an understanding of social psychology as expressed in the design and spatial planning. The healing architecture theory by Bryan R Lawson from the University of Sheffield, UK consists of 6 main principles, namely: Comfort and Control; Interior Appearance; Legibility of space; Nature and Outdoors; Privacy; Views [1]. However, in this research, those that are relevant and will be used for blind users (completely blind) include: Comfort & control; Interior Appearance; Legibility of Space; Nature & Outdoors [3]. Described as follows:

- The comfort & Control, the comfort of blind users pays attention to ease of access, as well as the range of supervision of other people and individuals.
- Interior Appearance, the interior appearance can be adjusted to the function, character of the space, scale, and shape of the space for visually impaired users.
- Legibility of place, a space or place that can be read has a clear pattern, shape, flow, composition, and structure. This makes it easier for the visually impaired to understand space based on perception using the sense of touch.
- Nature & Outdoor, the use of outdoor spaces such as parks can stimulate hearing and touch simultaneously.

### C. *Therapeutic Architecture*

Therapeutic Architecture is a description of the discipline of the Built Environment that focuses on humans and is evidence-based, aiming to identify and support the physiological and psychological interactions of society which are applied to the design of spatial elements. In therapeutic architecture, applying a therapeutic space approach it has a definition of the concept of space which aims to support the welfare of users, such as people with special needs so that they can be empowered without needing help from other people [2]. The condition of someone who cannot see objects, colors and the light completely are categorized as blindness. Blind people not only have different physiological conditions, but psychological conditions can influence them, including feeling helpless regarding their physical condition. Therefore, physiological, and psychological both have a relationship and influence on the visually impaired.

Due to these conditions, people with disabilities have physical limitations, so to meet their needs to support their activities, architecture is one solution in achieving accessibility and facilities. Therapeutic architecture as a method is used to support the needs of the blind which can produce better therapy and a higher quality of life for users, so that they can adapt and be independent inside and outside the school environment. To achieve the therapeutic space concept in therapeutic architecture, there are 4 methods [6], namely:

- Care in community, this method must be able to support social interaction between users in the design. The design basis accommodates and encourages interaction, in application by adapting a centralized circulation pattern to create user-meeting interactions, uniting spaces that have the same function by minimizing massive boundaries in space unless the space is private. Then, in the arrangement of the mass of the building and the composition of the spatial layout in the form of socio-petal, the aim is to build interaction and increase the number of openings so that sunlight sources can enter the entire building.
- Design for domesticity, the second basic design method that creates and gives the impression of a 'home', a design that gives the impression of comfort and safety. By applying warm and friendly colors and avoiding straight and too long corridors to achieve good psychology for users.
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- Social valorization, the third method focuses on user privacy. In the design, paying attention to protection from inside and outside, this is implemented by providing barriers (boundaries) using solid or transparent materials.
- Integrated with nature, this method is a design basis that integrates with the environment by utilizing and optimizing natural elements from the surrounding environment conditions.

From 4 methods that are relevant to use for blind users, only 3 are, care in the community, design for domesticity and integrated with nature.

#### *D. Life-Enhancing Experience*

Materiality architecture in material applications is the basis for achieving design goals. Materials can provide impact and sensory perception through stimulation of the user's five senses [4]. Blind people can reach objects and the environment, through sensory responses produced through the sense of touch. The application of textured materials not only responds to the sense of touch but also hearing, because when the user touches there is friction between the skin and the object which can produce sound, as well as when walking when the blind person walks using footwear or vice versa, it can also produce sound. For the visually impaired in reaching out, way finding and recognizing the environment, materiality methods can be used as guides and markers.

Materiality is one of the elements explained by Pallasmaa through the concept of Life-enhancing experience, apart from materiality there are other elements including texture (texture), touch (hapticity), density of space (density of space), weight (weight) and the manifestation of light (materialized light) [8]. Of the 6 elements that have a relationship and influence on the visually impaired (totally blind), only 5 will be used in this research, namely materiality, texture, touch, weight, and density of space.

### **III. RESEARCH METHODE**

This research uses a qualitative approach, in general, qualitative research is used to find out and understand people's lives, behaviour, social activities and so on. The aim of qualitative research is to understand social reality and the psychological world, apart from that it has a small sample and there is no significance test [5].

Through a qualitative approach to understand individuals and groups of visually impaired (totally blind) in relation to building and psychological facilities. This can be known based on a thesis entitled "Healing Architecture for the Visually Impaired (Totally Blind) Case: SLB Patriot Bekasi City".

The data collection process is carried out through the following 4 stages:

#### *A. Interviews*

Interviews were conducted through the involvement of blind students (completely blind), teaching staff and student guardians to obtain credible information, so that the data obtained was accurate.

#### *B. Observations*

Observations were carried out to get a factual picture of events to see the activities, atmosphere, and conditions of the school and to answer research questions in the problem formulation.

#### *C. Findings Test*

This third method is a stage to determine the sensory sensitivity of touch and hearing by using relevant media, namely objects found at school. At this stage you can create an assessment form to write down the results of the findings that have been made previously. This process involves 1 student and 1 female student who represents the visually impaired (totally blind).

#### *D. Documentations*

To obtain supporting data documenting the process of observation, interviews, and testing findings at the research location. Media for documentation using telecommunications in the form of audio recordings, videos, and photos.

**IV. RESULT AND DISCUSSION**

*A. Healing Architecture to Therapeutic Architecture Methods*

The table below is the relationship and influence of the application of healing architecture on therapeutic architecture as a method used by the blind for optimizing the sense of touch.

	<i>therapeutic architecture</i>	<i>Care in community</i>	<i>Design for domesticity</i>	<i>Integrated with nature</i>
<i>Healing Architecture</i>	<i>Comfort dan Control</i>	✓	✓	✓
	<i>Interior Appearance dan Legibility of Place</i>	✓	✓	✓
	<i>Nature dan Outdoor</i>	✓	✓	✓

Table 1. The Relation and Impact between Therapeutic Architecture Methods on Healing Architecture

Based on table 1 to encourage, comfort in interaction for the blind, by paying attention to ease of accessibility. Then the link between supervision of user interactions within the school environment aims to facilitate supervision for teaching staff and control awareness in each blind individual. Build and accommodate comfort and interaction control for the blind by implementing circulation with a radial system centered on one point. Design for 'domestic' relates to household architecture and interior design which involves space configuration, the application of domestic space patterns can influence perception, cognition, memory, and spatial boundaries [7] that are useful for users (totally blind people). The relationship of comfort and control is formed through a friendly and accessible domesticity. Based on the blind mobility orientation involving one male student and one female student, while in the school environment there is quite a lot of break time playing outside the classroom, so that the reach of students is not limited to the classroom but also outside the classroom. Connectedness to the natural environment for blind people so that they can understand and adapt to outdoor spaces by recognizing what is around them, through landscapes which can be divided into softscapes and hardscapes.

The legibility of a place in its interior appearance is based on its physical form and clear spatial structure. This principle of convenience is useful for the blind to adapt to the social environment. The application of polar domestic space design is related to the comfort and safety of users to read places through perception relying on the sense of touch. The legibility of a place is not only applied to indoor spaces but can also be applied to outdoor spaces. In its application, it uses the landscape as a way finding navigation for the blind, such as vegetation, textured road pavement so that they can perceive the location clearly.

Social interaction activities for the blind are not limited to indoor spaces but can be carried out in corridors, parks, and public spaces in outdoor school areas. In domestic applications, the design focuses on creating a warm, friendly impression and is accessible to people with visual impairments (totally blind), of course, with integration into the natural environment and surroundings.

*B. Healing Architecture to Life-Enhancing Experience Methods*

The following is a table of the relationship and influence of the application of healing architecture on experiences to improve life as a method used by the blind by optimizing tactile sensory.

	<i>life - enhancing experience</i>	<i>materiality</i>	<i>texture</i>	<i>hapticity</i>	<i>weight</i>	<i>density of space</i>
<i>Healing Architecture</i>	<i>Comfort dan Control</i>	✓	✓	✓	✓	✓
	<i>Interior Appearance dan Legibility of Place</i>	✓	✓	✓	✓	✓
	<i>Nature dan Outdoor</i>	✓	✓	✓	✓	✓

Table 2. The Relation and Impact between Life-Enhancing Experience Methods on Healing Architecture

Students who are visually impaired (completely blind) use their sense of touch to perceive objects and the environment. Through sensory touch, blind students can make direct contact through the material they touch. The application of the material can act as a directional guide, which is applied to walls and floors. So that it is comfortable for the blind to reach and gain perception through texture by optimizing the sense of touch. The nature of the material to be used must prioritize convenience and ergonomics for its use, to minimize accidents. Therefore, the nature of the material is not heavy and hinders and makes it difficult for the orientation and mobility of the blind. Density of space has a relationship and influence on the behavior of the blind when walking, composition, large scale of space and the number of blind people must be considered, because blind people have wider movements where they stretch their arms when looking for a way, entering a room and using a cane to detect objects in front of him. So, they can carry out their activities comfortably and control what is in front of them.

The interior appearance is a physical implementation so that a place is easy for the blind to read through perception, cognition, and memory through sensory touch. The application can use materials that have varying surfaces and textures so that the blind can differentiate. Space density can be viewed through the number of room ratios, so that users feel comfortable in their activities and movements.

Social interactions, activities, and space for the blind to move do not only occur indoors but also outside, so that the spectrum of orientation and mobility for the blind is wider. In understanding and recognizing objects and the environment, media or tools are needed through materials that have a texture that can be applied to guiding blocks, the application of various types of vegetation to differentiate certain areas in the outdoor environment.

**V. CONCLUSIONS**

From the table of the relationship and influence of the application of healing architecture elements through the therapeutic architecture method and life-enhancing experience for the visually impaired (totally blind), it is evident that the three are interrelated in achieving accessibility and facilities that are friendly and easy to access. So that the visually impaired (totally blind) can adapt inside and outside the school environment, the research objectives can be achieved well.

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