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# Blind orphanage with blind space approach in Jakarta

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**Abstract.** There are still people with disabilities in society who consider them a burden. However, in fact, every child with special needs such as a blind people has the right to have a decent life like any other community. So, we need an orphanage for the blind people with a blind space approach that aims to provide social services to blind children by helping and guiding them towards reasonable personal development and having work skills, so that they can be independent, live properly and have responsibility, both for himself, his family, and society. This research used a qualitative descriptive method by collecting literature studies from national and international journal articles regarding the blind orphanage, collecting data related to the research location and conducting a comparative study of similar buildings in Central Jakarta. This research resulted in a blind orphanage design with a blind space in Jakarta approach that provides disability facilities for visually impaired people, educational facilities, and activity facilities for visually impaired people. It is hoped that the design of the Blind Orphanage can accommodate the activities of the Blind people in Jakarta.

## 1. Introduction

People with disabilities are people with limitation and disadvantage both physically, mentally, having difficulty interacting with others and resulting in the person experiencing limitations in living daily life both personally and in society [1]. People with disabilities including the visually impaired need a place or business institution to meet physical, mental and other needs called an Orphanage [2]. Orphanage is a social welfare enterprise that has a responsibility to provide social welfare services by providing suitable personality development, alleviation and services especially for those with special needs including the visually impaired so as to have the opportunity to have the appropriate personality development [3]. People with visual impairments have visual limitations [4]. They have problems obtaining knowledge or information about matters in the surrounding space [5]. There are two categories of the visually impaired who are completely blind and visually impaired who can only see a portion (low vision) so that it is necessary to utilize the other five senses such as the auditory sense (ear), sense of taste or sense of smell [6]. So that we need a research related to the design of the orphanage that is needed by blind people. Previous research has shown that the information obtained by blind people is very limited and seek other information by describing it from their teachers or their parents' [7]. It should be studied more deeply in relation to the opinions, opinions, and views of by blind people. Curtin and Clarke say that listening to people visually impaired disability is one way to support and educate people with disabilities as best as possible [8]. People judge the quality of space, matter, and scale using not only the sense of sight but also other senses [9]. Blind perception can be a essence into the field of Architecture where blind people pay more attention to other senses that can feel space in a different way [10]. Looking at the above issues, so it is necessary to accommodate the provision of disability facilities



for the visually impaired, along with educational facilities and infrastructure activities for the visually impaired and expected Blind Orphanage in Jakarta, especially in Central Jakarta has facilities that can accommodate the activities of the visually impaired in Central Jakarta with blind perception and search information by blind people that provide a sense of comfort and the concept of design is able to adjust the mobility of the visually impaired.

## 2. Methods

The method used in this research is descriptive qualitative method by performing several stages. The first stage is to collect literature studies from national and international journal articles taken from the internet. The second stage is conducting observations at the research location by obtaining data related to location analysis, analysis of surrounding building conditions, building orientation analysis, material analysis and lighting analysis. The third stage was to conduct a comparative study of similar buildings in Central Jakarta, namely the PSBN Wyata Guna and the UPT for Blind Disabilities Rehabilitation by interviewing several blind people in these locations.

## 3. Results and discussions

The Researchers conducted comparative studies into several orphanage buildings in Indonesia including:

### 3.1. PSBN Wyata Guna

The first comparative study in this research, which is at PSBN Wyata Guna is a technical implementation unit in the field of rehabilitation and social services in the ministry of social affairs, under and directly responsible to the Director General of Social Rehabilitation of the Ministry of Social Affairs located at Jl. Pajajaran No.52, Pasir Kaliki, Cicendo, Bandung City, West Java.



Figure 1. Map location.



Figure 2. PSBN Wyata Guna building.

### 3.2. UPT Rehabilitasi Cacat Netra

The second comparative study is UPT Rehabilitasi Cacat Netra, Malang is the Regional Device Organization of East Java Province Social Service which has the main task of carrying out some of the duties of East Java Provincial Social Service in the field of service, rehabilitation, assistance, guidance, development and resocialization of people with visual disabilities, by providing physical, mental and social guidance and skills training, to develop the social skills of people with visual disabilities in order to become capable and useful citizens. Netra Disability Rehabilitation UPT is located at Jl. Pajajaran No.52, Pasir Kaliki, Cicendo, Bandung City, West Java.



**Figure 3.** Location mockup.



**Figure 4.** Site Plan UPT Rehabilitasi Cacat Netra.

By conducting a review of the two comparative studies above is expected to obtain ideas and an overview of the basics of planning and designing the Blind Orphanage in Central Jakarta as a social means. The planning and design of blind orphanages in Central Jakarta is expected to provide good infrastructure based on the profession of social workers to visually impaired children by helping and guiding them towards reasonable personal development and working skills, so that they become members of the community who can live decent and responsible lives, both towards themselves, families, and communities so that the formation of people with mature personality and foster a sense of self-reliance in the fulfilment of daily needs. The planning and design of blind orphanages in Central Jakarta is also expected to facilitate visitors such as providing facilitation for the public, communities, institutions, institutions, and schools. Researchers put restrictions on research entitled Blind Space Orphanage with Blind Space Approach in Jakarta by discussing the architectural aspects of Blind Orphanage in Central Jakarta only. Then the contextual aspect of the selected site about its potential, constraints, and prospects for the establishment of a means of service to blind children is done by designing by observing the friendly concepts of the blind children, from the interior and its achievements and designing innovative buildings by looking at the needs and comforts of visually impaired children.

### 3.3. Research site data and conditions (site)

The location of the site is on Jalan Gunung Sahari, Kemayoran Central Jakarta. The North is bordered by MP Strada Mardi Utama, the east bordering people housing, the west bordering the Ministry of Defence of the Republic of Indonesia, the south bordering BPK Penabur 3 Christian High School. The area of KDB 40 5 is 6,600 m<sup>2</sup>, the area of kLB 2.4 is 26,400 m<sup>2</sup>, the maximum building height is 4 layers, the minimum KDH is 30% which is 3,300 m<sup>2</sup>, KTB 55% is 6,050 m<sup>2</sup>, and GSB 7 meters.



**Figure 5.** Site space rules location.



**Figure 6.** Tread shape.

The site is located on Jl. Gn Sahari precisely in kemayoran area. Reviewed by its position on various activity centres in Jakarta, the location of the site is considered as a strategic point because of it is relatively close location to Social Services Office, Police Station and Education Office.



**Figure 7.** Condition of research site.



**Figure 8.** Nearby facilities.

### 3.4. Mass custom

The initial idea of designing the mass layout of buildings in the site took the concept of the shape of blocks and paths in the form of horizontal and vertical straight lines which to make it easier for visually impaired students to be oriented around the site. The mass blocks of buildings in the design are focused to make it easier to control the visually impaired students. The Final Idea in designing the mass layout of buildings in the footprint takes the concept of beams and paths in the form of horizontal and vertical straight lines, broken paths, and curved paths where blind students can learn various paths and be well oriented. The mass blocks of buildings in the design are focused to make it easier to control the visually impaired students. The existing paths also affect the direction of the building's position and form a synergistic pattern.



**Figure 9.** Early mass custom.



**Figure 10.** Final mass custom.

### 3.5. Theme implementation

The design planning of this orphanage building refers to its users, namely visually impaired students. The mass laying of this building is closed from the outside view inwards to maintain the safety of the visually impaired students. Facilities provided at this Blind Orphanage include Parking Area (car : 20 cars, 30 motorcycles & 2 buses), Reception Building (clinic, office & rehabilitation), Management Building (library, computer room & prayer room, Kitchen, Dining Room, Education Building (braille class, skills room & massage room), Hall and Dormitory [5].







**Figure 14.** Material concept 1.



**Figure 15.** Material Concept 2.

### 3.8. Light concept

The use of the opening shape varieties will make the shape of light that enters each room varies. This can make it easier for low-vision people to identify rooms. The opening shapes used are square, circle, and rectangle openings in the form of Voids.



**Figure 16.** Light concept 1.



**Figure 17.** Light concept 2.

## 4. Conclusion

The Indonesian Visually Impaired Community Centre is a design that can address the problem of the visually impaired in Indonesia which often faces the perception of people who think that the visually impaired do not have the ability due to limited facilities provided by the government or private sector. The Sensory approach applied to the design of the Blind Orphanage is the most effective way to present a design that can facilitate the visually impaired in accessing and using buildings. The design also applies several concepts that refer to beauty according to the visually impaired person.

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