

Analysis of Visual Impairment for Designing a Revival Center

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Abstract: *The inability to see, a medical condition that over 37 million people in the world suffer from, out of which 15 million are from India. There is a sequence of phenomenon established by WHO (World Health Org.) that is associated with blindness, which goes: Disease-Impairment- Disability- Handicap. There is always an aura of negativity surrounding blindness or visually impaired, over the years the gap between the blind community and the rest of the world has never been wider. Blindness has created a toxic cycle of illiteracy which leads to poverty and ultimately low social standings. With their loss of vision, blind people lose visual perception which accounts for 80-85% of the complete perception that a normal person has. Although it is hard to find a silver- lining amidst this darkness, blind people have heightened senses which vary from person to person depending on their intelligence. This to examine the relationship between non visual context, and civil engineering perspectives together.*

Keywords: Revival, Impairment, Visual impairment, Disease, Disability, Handicap

1. Introduction

Have you ever imagined a life in darkness? A whole life, where you can only guess what seems to be around you. We are very blessed that we own the power of vision. Eye sight is the supreme of all the human senses. Vision does the majority part of the sensing at the first glimpse. Other senses just are like a secondary option, for a detailed analysis. Its high time we realise how blessed we are to have eye sight unlike some unlucky people.

It is very hard to imagine life from the perspective of a blind. If vision, the most prominent of all the senses is taken away then your life is made much more miserable indeed. In my thesis, I am going to implement a conventional space where the visually impaired would be treated and entertained. A human capable of eye sight is also a part of the space.

1.1. Aim

The aim of this thesis is to design a centre of education for the visually impaired that is functionally sound and incorporated with strong essence of phenomenological contexts for effective kinaesthetic learning.

2. Research

2.1. Defining Blindness

Oxford defines blindness as a condition where a person is 'unable to see because of injury, disease, or a congenital condition'. Blindness is a term that has been revised on multiple occasions, currently there are 4 categories under which WHO defines visual functions, i.e.- 1) Normal Vision, 2) Moderate Visual Impairment, 3) Severe Visual Impairment, and 4) Blindness.

No	VA/Better Eye	Defenition	
0	6/6 - 6/18	Normal	Normal
1	<6/18 - 6/60	Visual Impairement	Low Vision
2	<6/60 - 3/60	Severe Visual Impairement	Low Vision
3	<3/60 - 1/60	Blind	Low Vision
4	<1/60 - PL	Blind	Low Vision
5	NPL	Blind	Total Blindness

2.2. Causes of Blindness

Blindness has been recognised as an important public health problem in India, The inception, implementation, and identification of appropriate strategies have always been guided by meticulously collected data. Recently, a nationwide survey was undertaken (1999–2001) to document the current situation, trends over the past three decades, and to evaluate the impact of the World Bank supported Cataract Blindness Control Project in the country. Results from the survey indicate that the country may now see a recession in blindness prevalence in the future.

- Cataract (62.6%)
- Uncorrected Refractive error (19.7%)
- Glaucoma (5.8%)
- Posterior segment pathology (4.7%)
- Corneal opacity (0.9%)
- Other causes (6.2%)

2.3. The Human Senses

People use four of their five senses - sight, sound, touch and smell - in varying degrees and sometimes subconsciously when interacting with the built environment. By looking at each sense independently we can distinguish how each sense is used. The consequence when one sense is removed or its effectiveness reduced is that the other senses are greater depended upon.

Table 1: Visual Impairment comparison

S.	Corrected	WHO Standard	Working
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2.3.1. Sight

Sight is the sense most relied upon. Our vision allows us to comprehend images that are far and near. We can see the nature of objects, whether they are smooth or rough, soft or hard. Our eyes reflect the environment back to us. Less than 10% of visually impaired people are totally blind. It is therefore important not to exclude the inclusion of visual elements in the way of bold forms, tonal contrasts and colour.

2.3.2. Sound

For a person without sight, the most informative and developed sense is hearing. Sound is omni-directional providing information about activities which are all around, far or near. Sound gives warning and offers direction. Buildings return sound to us, structuring and articulating our understanding of space.

2.3.3. Touch

Texture can only offer information at arm's length. Texture can be informative but cannot give information about something a long distance away, only that which is imminent.

2.3.4. Smell

Smell is rarely used as a directional clue. However it can be used as a source of information and guidance. A coffee shop, for example, emits an aroma of coffee disclosing its location to the visually impaired person.

3. Analysis

“India is now home to the world's largest number of blind people. Of the 37 million people across the globe who are blind, over 15 million are from India.” Blindness has been recognized as an important public health problem in India, a country that is now home to a billion inhabitants. India was the first country in the world to launch a 100% public funded programme for the control of blindness. This programme has the distinction of emphasizing evidence based practice for planning and policy formulation from its very inception. It has been found that 1.7 percent of India's population is disabled, out of which 0.22 per cent are visually disabled (both totally blind and low vision). The prevalence of visual disability found to be higher among female population (0.12 percent) compared to male population (0.10 per cent). Analysis of the prevalence of visual disability (both totally blind and low vision) in India and its major states found marked variations. In India, the prevalence of totally blind persons found to be 156 per lakh population and the prevalence of low vision found to be 61 per lakh population. Among the major states of India, the prevalence of blindness found to be highest in Andhra Pradesh (226 per lakh population) followed by Uttar Pradesh (204 per lakh population) and Orissa (190 per lakh population) where as it is least in Assam (88 per lakh population) followed by Jharkhand and Gujarat (98 and 99 per lakh population respectively). The prevalence of low vision is also found to be highest in Orissa (188 per lakh population) followed by Andhra Pradesh (96 per lakh population). Jharkhand (18 per lakh population), Haryana (24 per lakh population) and Gujarat (27 per lakh population) are some states which shows the lowest prevalence of low vision in the country.

4. Case Study

4.1 Kerala School for the Blind, Vallikkapatta, Malappuram

The case study has been conducted in Kerala School for the Blind, which is located at Vallikkappatta, Manjeri, Malappuram district. The data regarding blinds, their feel, their daily life etc. has been examined and experienced during the study well. Additional building services, specifications etc were explained by the headmaster in charge of the school. Building for school, hostel building, music library, open stage, braille book library etc are the feature of the school.



Figure 1: Kerala School for the Blind

India's first pedagogy park for blinds is located in this institution, which enable basic science and mathematics through the use of the sense touch. This is one of the most impressive space for those who are visually impaired since it easy to analyse and understand what it means.



Figure 2: Pedagogy Park view I



Figure 3: Pedagogy Park View II

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