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Psychology of Architecture for The Mentally Ill

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ABSTRACT: ***The door handle is the handshake of the building"- Juhani Pallassma***
Architecture today revolves around aesthetics and imageability, rather it should be more about the feeling that the user imbibes while using that space. A space should have the potential to attract more than just the vision. Scale, colour, natural light, textures, landscapes are the aids through which a space can have a dialogue with the emotions in a human body by creating mental images of it which we commonly call as perception. This study focusses on the factors which could lend experiential quality to spaces and also strives to answer this one question - can spaces heal? Diving in the psychology of architecture effort has been made to observe and document the mental asylums, their current flaws and their corresponding rectifications. This study will also throw light on the social stigmas that persist when it comes to mental illness and also tries to weave a relation between the psychology of patients and spaces. Sensory architecture can be a fresh take on the old notions. Buildings should not just respond to the physical needs of its users but also to their emotional needs. And this can well be understood by observing patients with mental illness. Healing is something I believe can happen through spaces also, and not just therapies which again does not give complete credibility to the quality of space but considers it as one of the aspects to a more sensible life.

Key words: senses, mental health, healing

I. INTRODUCTION

Architecture of the senses also known as Sensory architecture, is the sort of architecture which focusses on influencing more than one sense so as to create an experience rather than just an image.

Is it the geometry of a building that defines what a building is? Or is there more in the building than just its geometry? Masses of architecture are now designed solely on the geometry of buildings. The question is then, is this the right thing to do? Is modern architecture a positive step? In the "The Geometry of Feeling" Juhani Pallasmaa writes about the evermore popular style of modern architecture which circumferences around nature and light.

Why do so very few modern buildings appeal to our feelings, the buildings of our own time may arouse our curiosity with their daring or inventiveness, but they hardly give us any sense of the meaning of our world or our own existence. Architecture and neuroscience are no longer two discrete disciplines. Exploring the benefits of collaboration between neuroscience and perception, and architecture and the brain will yield a new dimension for design benchmarks, as human brains are continuously remolded by environmental forces and experiences. This collaboration does not only look at reducing patient stays, but also looks at providing a healthier, more productive way of living that may reduce people's need to go to a hospital in the first place. Humans' perception of the built environment is based on our ability to interpret adjacent environmental forces affecting bodily senses. Through our senses we form an image, and associate a memory with that image. As such, memories underlie much of our rich life; humans commonly associate dampness with smell, perceive dimension through echoes, and see light with shadow. Knowledge stored in our memory affects our behavior by way of predictions. Often, our perception of the environment relies as much on the knowledge stored in our memories as it does on fresh, incoming sensory information. Studying the mental ill in India, impact that this has on the society, the reason why it is a stigma and its repercussions in terms of adequate facilities in the form of hospitals and rehabilitation centres will help tie the knot between psychology of space and its potential to heal.

II. REFLECTIONS ON HEALTH

Health is not freedom from disease. It is a state of psychosomatic well being in which the individual human person has large reserves of bubbling energy, and an inner compulsion to use it in a creative expression and socially beneficient action.

It is a condition of the body being in touch with the self in aura of moral hygyiene such that it irresistibly spreads good cheer, camaraderie and general weal. Health is a spiritual extroversion. Sickness is emotional introversion.

III. STUDY AREA

Bangalore district is situated in the heart of the South-Deccan plateau in peninsular India to the South-Eastern corner of Karnataka. State between the latitudinal parallels of 12° 39' N & 13° 18' N and longitudinal meridians of 77° 22' E & 77° 52'E at an average elevation of about 900 meters covering an area of about 2,191 sq.kms (Bangalore rural and urban districts). Bangalore, capital city of Karnataka is the sixth largest metropolis in the country and a nerve center for the various cultural, social and religious activities, contributing to the growth of the city. Bangalore urban with a population of about five million consists of three taluks namely Anekal, Bangalore North, East and South. The city apart from being the political capital of the state is also a very important commercial center some of the major industrial establishments.The district supports about 9.41% of the state's total population and 27.41% of the total urban population of the state. The urban agglomeration is spread between North and South taluks of Bangalore covering an area of about 151 sq. km. with average population density of 16,399 individuals/sq.km (census,1991).

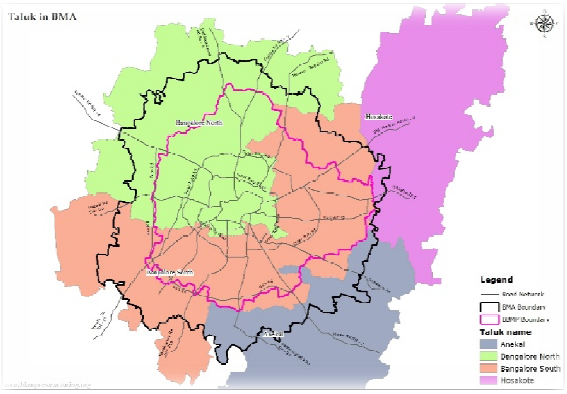

Fig. 1. Talukas of Banglore.

IV. LITERATURE REVIEW

In united states more than 5.5 lakh persons are in hospitals for mental diseases, another 1.3 lakh mental deficient are in institution, and a further one lakh under supervision making a rate in all of 5.2 persons per 1000 of the population with mental disorders. This can be compared with 5.6 persons per 1000 in U.K.

In India the figure may not differ much from the above estimate. Even if low they are bound to catch up with those of the west with the transition from bullock -cart age to that of atomic age and the increased and rapid industrialisation and urbanisation. Evident of the fact has already come to light that the incidence of mental disease in India is increasing rapidly. If the number of psychiatrist is taken as 2 per 1000 (the figure given by health survey and development comitteee 1946) there should be approximately 1.5 lakh persons suffering from certifiable mental diseases in uttar pradesh alone and 8.5 lakh in india. This number does not include the psychoneurotics and mental deficients, added to this we have problems of social pathology of about 1.75 lakh crimes each year and 15000 to 17000 suicides. All these when added up make mental health a major community health problem.

Existing facilities Psychiatric (Mental) hospitals in India. In all the hospitals run by government a total number of 12,785 beds, added to this about 2,200 beds in private sector, only 1500 beds in all are available for psychiatric patients, giving a ratio of one bed to about 30,000 population in India. While in England the corresponding ratio is approximately one bed to 300 of the population.

It is revealed from the survey carried out in "mental hospital- Bangalore" and published in "Journal of the all India Institute of Mental Health" that 25% of total psychiatric patients required full hospitalization and needs admission. Considering the same fact, we may require about 37000 beds in Uttar Pradesh, whereas we have only 1400 beds at present, which means only 3% facilities are available.

Not only this meagre strength of beds , there exists not a single institute for mental defectives to serve the general public. In addition to the admitted facts that the mental hospitals are very primitive and out of date, hospital buildings are poor and unsuitable with the advance of time and scientific method of treatment of psychiatric patients. It should now focus more on the mental healing rather than only just curing the disease.

Stigma, Discrimination, and Mental Health. Mental illness stigma is defined as the "devaluing, disgracing, and disfavouring by the general public of individuals with mental illnesses. In addition, stigma can prevent mentally ill individuals from seeking treatment, adhering to treatment regimens, finding employment, and living successfully in community settings. In 2001, the World Health Organization (WHO) identified stigma and discrimination towards mentally ill individuals as "the single most important barrier to overcome in the community", and the WHO's Mental Health Global Action Programme (MHGAP) cited advocacy against stigma and discrimination as one of its four core strategies for improving the state of global mental health.

V. CULTURAL PERSPECTIVES ON MENTAL HEALTH

'Budh Vidya' in Yajurveda speaks of the age old traditional belief in demoniacal possession. The strange behaviour and unpredictable reactions of the mentally ill were regarded with fear. A man afflicted with mental illness was looked upon to bear super Natural Power and .if it was a bengin power or spirit he was naturally admired and revered.

Admission of various Indian communities in mental hospital- Banglore for the calender year 1953.

Communities	Population in thousand	No. of admissions	Admission per 10,000 population
Muslims	485.2	64	1.3
Indian christians	98.5	31	3.2
Other christians	14.2	3	2.2
Parsees	0.4	-	-
Jains	32.8	4	1.2
Hindu bhramins	295.4	124	4.2
Kashatias (warrior caste)	45.2	7	1.6
Vyshias(merchant class)	55.8	31	5.6
Sudras(workers caste)	4869.8	232	0.5
Scheduled caste (un-touchables)	1405.0	78	0.7
Other hindus (not specific)	14.1	58	41.0

When an evil spirit had taken up in him, he was indulged to mollify the evil and to avoid its revengeful curse, this illness was kept a guarded secret. The mystery was never revealed to any other man except the priest it was believed that only the priest could cast away the evils. Treatment of these ill people was considered a sin and (adharma) and going against the wishes of god.

In the absence of regular hospitals or asylums, nobody ever cared to take note of these troubled souls, nobody looked after them, helped them or cured them. The ,more voilenyty patients were usually chained together and huddled in a place- where they met their end , unnoticed and unwept for.

During the middle age a few monasteries had owned lunatics, but it appears that first asylums were built by Muslims, whose idea of treatment of psychiatric patients was taken from eastern physicians.

In Europe, the Bethlem Hospital in London was first used as an asylum in 1403. Reform in England was initiated by the Quaker who, at the instigation of William Tuke and Lindley murrey, founded the York-Retreat in 1813, purposely avoiding the name "asylum" or "mad house". Here friends who were mentally damaged were received as guests and later mentally ill persons of any denomination were also admitted. The use of chains were abolished, and therby was consisted of work, exercise and cultivation of a good and healthy atmosphere. Hanwell asylum was the first public institution in England to liberate the insame from chains and admit the patients for it in proper treatment.

In our country the first positive step was taken towards the relief of this illness when Lunatiuc Asylum Act of 1858 was passesd , effecting into the formation of Lucknow asylum in about 1863 in Uttar Pradesh. In 1904 the Agra Lunatic Asylum was ultimately established and patients from Luchnow Asylum were transferred to this institution. The former at Lucknow was closed down. At abpout the same time district Asylums were opened at Bareilley and Varanasi and also at many other places throughout India. These asylums infact in the beginning were the place to confine dangerous and wandering psychiatric patients, rather than treating them to their full potential and rehabilitating them back into the society.

Later the change in this trend happened initially in Uttar Pradesh following which a properly qualified psychiatrist was posted to Agra Lunatic Asylum in 1911. The so called asylums were renamed into Mental Hospitals in 1925, better treatment facilities and more attention was extended to psychiatric patients. Post independence however maximum efforts were made that there patients develop the lost relationship with their environment.

VI. DISCUSSIONS

It may be too much to hope that the building in itself can cure , but clearly it can a place that is relaxing to the patient and provides him with a sense of security. The treatment can be aided with colour, harmony, texture, form, and relation to nature. The architecture of the place must be of domestic scale so that the patients develop a sense of familiarity with the institution.

VII. LIGHT AS HEALER

Exposure to bright morning light has been shown to reduce agitation among elderly patients with dementia. When elderly patients with dementia were exposed to 2,500 lux for 2 hours in the morning for two 10-day periods, their agitation reduced. Patients were significantly more agitated on non treatment days (Lovell, Ancoli-Israel, & Gevirtz, 1995). Generally, the more bright light one gets during the day (especially earlier in the day), the more likely one is to make more melatonin (sleep hormone) during the night, and the less sensitive one is to minor light exposure in the evening or night time. At least 11 strong studies suggest that bright light is effective in reducing depression among patients with bipolar disorder.

EASING PAIN

A recent randomized prospective study assessed whether the amount of sunlight in a hospital room modifies a patient's psychosocial health, quantity of analgesic medication used, and pain medication cost (Walch et al., 2005). Patients undergoing elective cervical and lumbar spinal surgeries were admitted to the bright or the dim side of the same hospital unit postoperatively.Patients staying on the bright side of the hospital unit were exposed to 46% higher-intensity sunlight on average. This study found that patients exposed to an increased intensity of sunlight experienced less perceived stress, marginally less pain, took 22% less analgesic medication per hour, and had 21% less pain medication costs (Walch et al., 2005).

COLOUR AS A THERAPY

Colour thought to have a direct influence on our thoughts moods and behaviour. Blind people also affected because they are able to sense the energy vibrations within the body. This is not a new concept. Colour therapy has been around for over 5,000 years the -Ancient Chinese concept FENG SHUI. The colours you select have a profound effect on you and can help reduce disease stress, give you more energy and help alleviate pain. Other analogous colours closely related on colour wheel and are used together to create a feeling of harmony. Yellows, Oranges and Red-oranges, Blues and violets are some of the suitable combinations.

Complementary Colours are the ones on the opposite sides of the colour wheel. These colours offer the greatest contrasts, so their effects are **bold and dramatic- Violet and yellow Blue and Orange Red and Green.**

Violet- calms highly-strung, excitable people

Indigo- soothing effect on the eyes, ears and the nervous system

Blue- peaceful and soothing Calming tired nerves, alleviating agony and pain

Green- helps alleviate anxiousness, nervous disorders, tension

Pink-soothing effect, relaxing muscles. tranquilizing effect on anxiety

Yellow- feel nervous or tired.

Orange- increase appetite, need joy and well-being, stomach disorders nervousness, skin problems allergies, vertical grooves in your nails

Red- stimulating power

VIII. CONCLUSIONS

- The creation of a supportive, stablized environment has a positive influence on schizophrenic patients. Such environments dereases the rate of patient violence and also helps in increasing patient-patient and patient-staff interaction and decrease in pathological behaviour, together with improved morale among both patient and staff.
- Mere changing the furniture in dryads can double the rate of social interaction among geriatric patients.
- Structural division of wards into smaller units help in containment of incidents and reduction of vandalism, stealing etc.
- The length of patient stay is considerably reduced by good ward design.
- The design of inpatient wards should not be overcrowded or over concentrated, so that they are not forced to interact with too many people.
- The following features were identified as being important in multi sensory spatial awareness through the theoretical study. Aspects of space perceived through
- **Sound**
- Boundaries Created through Sound-the perimeter (the auditory horizon). Perception of distance through sound.
- Distinct soundscapes created by materials when touched by active agents, such as humans, wind or water.
- Ambient sound of spaces-sounds that permeate and persist in the spaces giving

- distinct character to the space.
- Echoes indicating scale in relation to the body, indicating the size of spaces.
- Spatial identification through direction of sound and its nature.
- **The significance of Touch and Kinesthesis in space (Eyes of the Skin)**
- Touch
- Perception of temperature and temperature spaces.
- Perception of texture, weight and density.
- Tactile connection to ground-reading texture, friction, gravity and density.
- Sensing vibrations through skin, assisting spatial orientation.
- Comprehending time and tradition through architecture-patinas, and objects shaped through touch.
- Kinesthesis
- Experiencing of space through bodily action. Assures that the body and movements reflect the form and size of the space experienced.
- **The Smell and Taste of space**
- Smell
- The association of smell and memory.
- Attractive and distractive smells as pull and push forces through space. (through aromatic landscapes)
- Smell and soft spatial zones and boundaries.(by zoning of same aroma trees and segregating zones by their aroma.)
- Shifting and changing of zones of smell affecting olfactory spatial boundaries.
- Taste
- Oral sensations linked to smells.
- Oral sensations linked to touch.
- Oral sensations linked to vision.

- **Open outdoor areas**
- Outdoor areas (eg. enclosed courtyards, gardens) are considered to be of great therapeutic benefit.
- Trees are to be located away from the buildings to prevent access to building roofs.
- Effort has to be made to avoid plantation of shrubbries closed together that can create visual barriers that patients may hide behind.
- Landscape or decorative rocks that can be thrown and injure staff or other patients should not be used.
- Outdoor furniture should be deliberately integrated with hard landscape such that they cannot be tampered as well as cannot be moved to create barricades or stacked upon to allow climbing over into windows or onto buildings.

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