



iJRASET

International Journal For Research in
Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 5 Issue: XII Month of publication: December 2017

DOI:

www.ijraset.com

Call:  08813907089

E-mail ID: ijraset@gmail.com

Architecture of Purposes: Healing Environment

Ar. Rajeev. Parshar¹

¹Assistant Professor Amity School of Architecture and Planning Amity University Madhya Pradesh, Gwalior

Abstract: Today, the hustle bustle in life which we experience throughout the day has filled us with lot of stress and anxiety. Also there is constant rise in number of psychiatric patients due to several reasons. but due to lack of awareness and concern, rehabilitation is hard to achieve without healthcare centres and people without physical health issue would not prefer to go there. What if we provide healing environment to sufferers from built form itself to reduce load from various therapies used for the purpose of rehabilitation. And such healing environment can work for any building typology to help all kind of users in coping-up with stress and illness. For instance, helpful design begins by subtracting environmental characteristics like loud noise that are stressful or can have direct negative effect on occupants. Additionally, designers may go a step ahead by including elements in the design that researches have proved to be calming to users, decreases stress, and reinforce psychological aspects of them

While designing a space some psychological aspects like pleasing sight, natural light, colours, open spaces, pleasant fragrances etc contribute to the rehabilitative environment.

Key words- rehabilitative architecture, healing affect, psychological impact

I. INTRODUCTION

In architecture creating physical spaces is not only a issue, but designing those spaces by considering human aspects of surrounding in mind is also important. it is usual for people to see architecture just as a place that is meant to be occupied not as a important part of their lives which is

closely involved with their sub consciousness .it can influence their behavior, mood, and even their health.

Yes, the architecture can affect one's health by restoring their psyche. A well planned design may help people who have difficulty to live normal lifestyle because of their ill health by stress, anxiety, disease, addiction etc may cope up with their weaknesses.

" We shape our buildings, and afterwards our buildings shape us."This quote by Winston Churchill is said in a speech in the House of Commons on October 28, 1944. The meaning of the quote itself is, at first a building is a outcome of the design of the architect's ideas, but over time after the building is occupied, people who stay and work in it utilize the qualities of the

Buildings they stay in. it is true that the building could change the human. The changes to be emphasize here is not the visible physical change itself but rather a change in human behavior. (Churchill, 1944)

For example, a person who living in an enclosed building will be less vibrant and joyful than person who lived in a building that got a lot of sun exposure. And here works the sense organs to intake the essence of the design.

A. *Design Elements stimulating psyche -*

1) *Lighting:* Light is a key element of any architectural space. The right type, quality and quantity of light can highlight a room and each element inside it; shapes textures and colours. According to experts, light influences person's experience within a space than any other architectural design element, and so it's thought to be one in all the foremost necessary elements of design. Besides saving energy, exposure to natural light leads to high sprit and can help make falling asleep easier. Spending most of the time in areas that are rich in natural light helps the human body to develop a good circadian rhythm, can increase happiness levels and can make occupants energetic. Light also works on production of three important hormones-melatonin, serotonin, and cortisol . that directly affects our internal clock and mental states and keep all three hormones in proper balance.

It is clear that day lighting is important for the occupant's well being; here are 3 rules to consider when designing a home focused on natural lighting.

The positioning and orientation of your home or commercial space is very important. At Poss. Architecture + Planning and Interior Design, we place rooms that will be most commonly used and occupied during the daytime along south-facing walls. In the northern hemisphere, homes positioned and facing the south will receive a majority of the day's sunlight. In family homes, the three rooms that are occupied most during the day are the kitchen, laundry room, and living room. We like to design these rooms for maximum light. In custom-designed homes we always listen to client's

personal preferences. Some people like to wake up to the sun, some do not want to have to pull the blinds because of glares on the TV, and some put a premium on views and vistas. All are directly linked to a home's positioning, orientation, and use of natural light.

It's obvious that windows are the most cost-effective way to get natural light into your home. However, windows also bring a lot of natural heat, which is a great feature during winter months in mountain towns like Aspen. Something to remember: Windows that are designed high on the wall will bring the most natural light and heat.

Finishes and interior design will play a huge role in day lighting and augment the natural lighting goals of an architectural project. Mirrors are a great tool when decorating in shadowed areas because they will bounce and redirect natural light to darker areas of a home. We also like to use bright colours and finishes in the interior to reflect the sunlight. And, always avoid obstructing sunlight along south-facing walls and windows.

One can also include dapple light in design to make person more relaxed sitting under it .we enjoy being in dapple light .dappled light is the kind of light we experience

when sitting under a plane tree on a sunny measurements". Geometry, according day. Lane trees are plentiful on the Plato, can cosmos measurements".

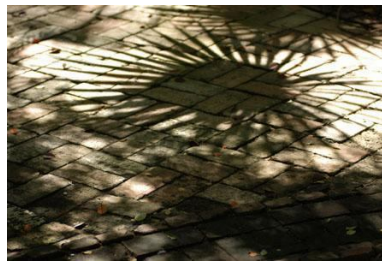


Figure 1 dapple light



Figure 2 jaali to create filtered light

B. Proportion and geometric pattern

The word geometry refers to the science of properties and relations of points, lines, surfaces, or solids in space and the way the parts of a particular object fit together with symmetric balance. Geometry word is made up by two Greek words "geo", meaning the earth, and "metry", meaning to measure. So geometry literally means "the measurable earth" or "earthly

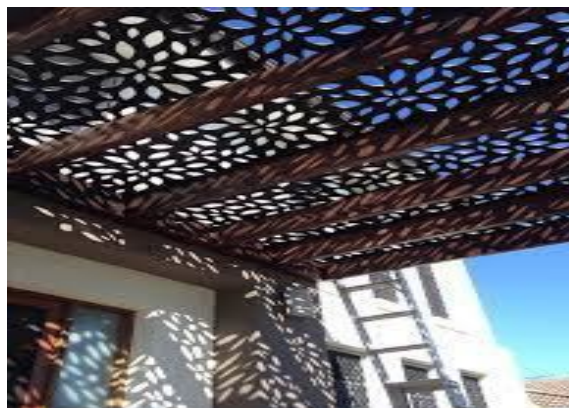


Figure 3 Geometric pattern

Studies have shown that Scans of people’s brains show a strong emotional response to visuals based on proper geometry and proportion. Our subconscious mind knows what looks good and enjoys it. It has tendency to see nature in each element to communicate with it.

That’s why keeping the architecture in tune with nature by following golden ratio proportions has serious benefits on well being as our visual sense perceives it as closely linked to nature thus we feel more relaxed and calm. For example, a test subject may say the out-of-proportion columns on a porch are beautiful. Their brain waves know the columns are out-of-proportion and even though the test subject responded positively, the brain waves responded negatively. This shows all of our brains are “wired” to recognize what is visually pleasing based on these fundamental design principles, even though they contradict the viewers stated preferences.

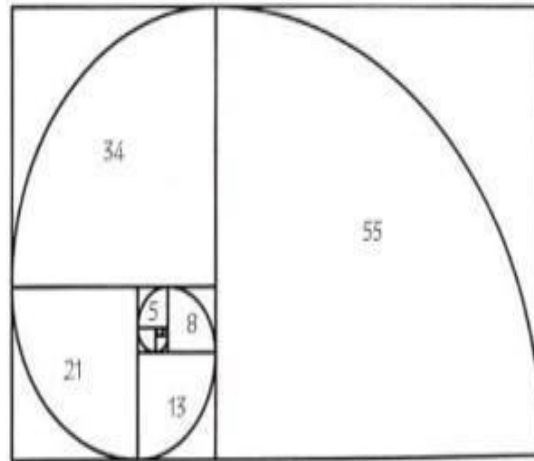


Figure 4 Golden ratio

C. Plants and greenery

Many studies define feel of different people in the presence or absence of different kind of indoor plants. People working on a computer task in office sometimes also feel lazy during work time in office. Presence of foliage plants in a room, people feel more attentive and energetic than the people in the space without plants without plants. In a survey, people were asked how they feel in office with three different design treatments.

- 1) Office with no colourful objects
- 2) Office with colourful objects
- 3) Work space with interior plants

Workers feel more energetic and fresh and more work efficient in the room with indoor plants than in the room with or without decorative landscape. A study equated offices worker in buildings with or lacking indoor plants and with or without windows or other spaces with a wide view of green spaces.

Early studies on plant psychology have already shown that people recover from stress more quickly when viewing natural panorama. Many people were asked to response when performing an official task. All the participating employees were randomly distributed in room with less or no plants and others to a room full of green plants. While performing their task, participants in the room without plants will feel stress on work and anxiety indicates that the task was stressful to them. But in the other room participants were found in a good work environment, they were found happy and turned enjoying their task in office. Now here is the question why it happens, the answer is quite clear plants effects our mental strategic condition and influences our physical work quality. This research documented that interior plants used in landscape, which reflects image of nature, could reflects an invert calming response to the user employee.

Above statement proves that the plants alter productivity of official work. The People responded more efficiently and quickly when plants were in the room than when the plants were absent. Responding time in the existence of indoor plants was 16% faster than to the space with the area which were absent in green plants, depicts that plants leads to increase in work productivity. Plants also help to reduce mental fatigue. Now a day’s stress is a major problem in our modern life style, where plants play an important role in our life style in healing of the stress companion which creates a lot of troubles in our lifestyles.

Both visual access and being actually within a green space helps to improve the ability to focus and increase the level of alertness. Outdoors and green spaces encourage social contact, leisure and cultural activities by sharing activities with others and enhance the desire of knowledge. Outdoors and open spaces provide the availability of physical activity like walk and exercise. "Over the past several decades, research in a variety of fields such as workplaces, hospitals, urban environments, and experimental laboratories shows that contact with nature generates emotional, physiological, social, and cognitive benefits.

D. Silence and solitude

The most important auditory experience given by architecture is serenity since the ancient time silence has been used as a effective tool to create calming atmosphere. Egyptian temples, gothic cathedrals, roman pantheons have created great atmospheres with great sight and silence.

But do we really know the meaning of silence? It is not about complete absence of sound. (Which of course is not possible) silence means life; in quiet places, the ears sharpen to listen natural sounds like of wind blowing, water flow, birds chattering sound and even start to hear the sounds of our own body. and how can we achieve this peaceful silence in today's noisy world. Even the small house is full of noise-producing stuff - refrigerators, deep freezers, central-heating furnaces and pumps, ticking electric clocks and so on, all dead mechanical sounds, not sounds of life like speech, music, crackling fire, wind in the chimney, rain on glass. Out of doors cities have constant background noise you cannot get away from. In the countryside how far do we have to go not to hear a hi-fi, car, chainsaw, milking-machine or aeroplane? When you listen, almost everywhere within easy access of where we live there is mechanical noise most of the time. In this century silence - freedom

from mechanical noise - has become a threatened species, extinct in many areas.

As a foundation of serenity we need a well planned design. Giving little architectural touch to spaces can do a lot for mental peace. proper colour and texture in the room, gentle movement in shapes ,forms, and spaces are some of the qualities in the buildings we design for peace.

E. Case studies

1) *Medanta -Medicity hospital:* Medanta is one of the largest multi super speciality hospitals in india. founded by a cardiac surgeon, dr. Naresh trehan. the institute has been envisioned with the aim of bringing to India the highest standards of medical care. Spread across 43 acres, the institute includes a research center, medical and nursing school. It has 1250 beds including 350critical care beds and 45 operating theatres catering to over 20 specialists. It has nine multi speciality institutes and over 20 speciality divisions and departments, which assists with clinical care, education and research. The design philosophy behind this hospital is to serve innovative and compassionate care to patients for their health and well being. the architecture of this hospital considered the healing sources like day light, landscape, room temperature, sound ,music, art and optical privacy in assisting to create psychological and physical healing of patients.

2) *Lighting:* The entrance lobby features a large catchy installation titled "tree of life" by renowned sculptor Mitch Cretin, figures5 prominently at hospital entrance and is back lit. The hospital ensures that there is natural light and a window in every patient's room. Unlike other hospitals, the

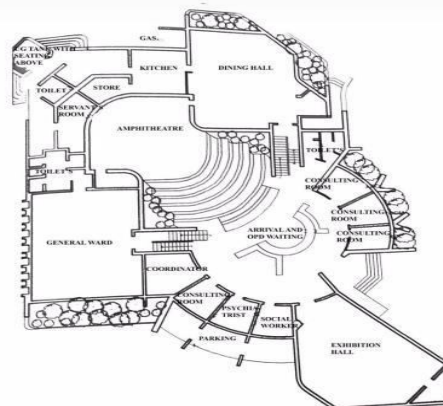


Figure 5 5th floor garden



Figure 6 lobby of medanta hospital

ICU beds also have large viewing windows. All these features are provided in each block. (jain)

F. Landscape

An ayurvedic garden is located at fifth floor of the hospital. It helps in creating healing environment in building itself. Hospital provides natural views to waiting areas and lobby through floor to ceiling windows. It is proven that visitors having a sight of nature makes the person calm and relaxed. Greenery in entrance and in surrounding in systematic pattern raises the sense of control and coherence factors in patients



Figure 7 Amphitheatre

G. Muktagan Rehabilitation centre, Pune

It is one of the best institutes in the field of drugs and alcohol de-addiction today. it has treatment schedule of five weeks based on rational emotive behavior therapy, alcoholic anonymous and gandhian principles.

There is small, enclosed amphitheatre with beautiful landscape in the center of structure let the light and joy enter into the building while helping the patients to connect and communicate with each other and the staff.



Figure 8 Amphitheatre



H. Inferences

Inpatient wards in both cases have used pale yellow colour on its walls to evoke sense of energy and excitement and stimulates brain. Both the buildings have used ample of greenery for healing environment. Medanta hospital has an Ayurvedic garden on its 5th floor and also building is surrounded by beautiful landscape. This creates feeling of tranquillity while muktangan rehabilitation has provided landscaping in entrance and amphitheatre to let patients communicate with each other and staff. Both buildings provide viewing windows in every room. Natural light and ventilation has made accessible for each patient which triggers physiological and hormonal progresses, affects psychology and well being of patients. Medanta has 10 feet ceiling height in its inpatients wards while muktangan rehab has ceiling of 13 feet. Both buildings do not compromise with height to give innovative, comfortable environment to patients. (jain)

II. CONCLUSIONS

When designing buildings, emphasis is placed on construction and maintenance costs. However, real people will be working in these buildings, so consideration should be given to their psychological and physiological well-being. The improved health of building occupants benefits employers and building owners because of improved performance.

With strategically installed and controlled daylighting systems, natural light has proven to be really beneficial for the health productivity, and happy mind of building occupants. Natural light make occupants in touch with outer world which can act as silver lining in time of sorrowness.

Geometric patterns, proper proportion of elements and acoustical control designs also supports the healing environment but Among all the measures suggested greenery, open spaces, and landscaping is most common and preferable way used for effective healing. There are some studies showing a huge range of positive impact of plants on occupants. Plants lead to change our mental health, helps our physical health, and make aura happier. in some environments, where people are subjected to prolonged stress, such as in rehabilitation centre and healthcare facilities, and office spaces planting more trees with dense green canopies may be useful otherwise for creating general rehabilitative environment, planting trees of any colour and any form can be improved human well being.

BIBLIOGRAPHY

- [1] (N.d.). From <http://study.com/academy/lesson/harmonic-proportion-in-architecture-definition-form.html>.
- [2] augustin, s. (2004). place advantage applied psychology for interior architecture.
- [3] Churchill, S. W. (1944, October 28, 1944). [http://desource.uvu.edu/dgm/2740/IN/stein ja/lessons/03/103_03.html](http://desource.uvu.edu/dgm/2740/IN/stein%20ja/lessons/03/103_03.html). (n.d.).
- [4] jain, m. (n.d.). human psychology in rehabilitative architecture. 2014
- [5] thakur, n. (2016). psychological sensitivity of human towards interiors
- [6] azair, s. u. (n.d.). the garden of five senses
- [7] Basson, J. (2014). adaptive healing. Holl, s. the eyes of the skin.



10.22214/IJRASET



45.98



IMPACT FACTOR:
7.129



IMPACT FACTOR:
7.429



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Call : 08813907089  (24*7 Support on Whatsapp)