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Study on Effect of the Geometry of the Structures on the Wellbeing of the Occupants: A Review

Sandeepkumar D S (Guide- Prof)[1]; Kiran Ramanna Mundargi[2]; Malatesha M[3]; Pramod H G[4]; Karthik Ashok Bandai[5]
Student, Department of Civil Engineering, Alva's Institute Of Engineering & Technology Mijar, Moodbidri, India.

Abstract:- In the role of geometric structures consist of point, line etc these fundamental elements essential for design of architecture and evolution of architecture from history to present. The different forms of energies are used. The impacts on human health by interaction between human beings and physical environment of the structures. The mathematics is also important in the geometric structures. The quality of the indoor and outdoor environment of well-being occupants should be constructed properly.

Keywords:- *Energy , Geometry ,Colour, Health, Architectures, Indoor, Outdoor.*

I. INTRODUCTION

A person's psychological condition is impacted in a number of different ways by interior architectural design. Every individual experience physical, psychological, as well as personal, experience-related, variations that affect how they receive, perceive, and respond. Numerous factors, such as culture, physical condition, age, educational level, gender, social standing, and aspirations, have an impact on tenants' needs. The relationship between interior architecture and psychological condition involves both humanitarian qualities and the interior architecture design process. "Architecture resembles programming in that it first identifies demands, then proposes a draught, and then suggests a suitable location in line with those needs and the site's construction. On the other side, behavioural sciences are interested in how environment is used in words.

Society has categorised architecture and interior design as aesthetic improvements to the "built environment," or the setting in which people live and work. In addition to harming the credibility of the believers, this has also hurt the credibility of the built environment.

Although there is a significant interaction between architectural design and psychology, this interaction is largely ignored in both the design business and outside of it. In addition, there is a strong bidirectional relationship between psychology and design that isn't usually the most significant. On the one hand, successful design has been demonstrated to have positive effects on the mind and body; on the other hand, psychology, human experience, and the characteristics of our brain structures all play significant roles in what we consider to be successful design.

II. ROLE OF GEOMETRY ON ARCHITECTURE

It is a summary of the fundamental components, arrangements, and systems that make up an architectural work. It is possible to perceive and experience all of these elements. While some may be simple to understand, others may be more mysterious to our brain and senses. In a building's organization, some elements may be dominant while others take on a supporting role. When the arrangement of the components makes the links between them and the building as a whole obvious, architectural order is generated. Geometry appears in form and shape in the works of numerous architects. In the plan, the spatial sequence, and in the details, geometry is obvious. Geometry is used to represent the entire structure, and ideologies are connected to it.

- POINT: The fundamental element of basic designing process is a point. Point is the basis of all geometry.
- LINE: Line is another name for the separation of two points (axis). A point's route turns into a line as it progresses.
- PLANE: The distance between two points (axis) is referred to as a line. The path of a point becomes a line as it travels.
- VOLUME: A volume is created when a plane is expanded away from its natural direction.

➢ *Geometry's Evolution from History to the Present*

The cornerstone is geometry, which also gives the noble joy of mathematics. Geometry gives rise to machinery. Our current age is primarily a geometrical one. The focus is on geometry throughout all of the concepts. After a century of investigation, contemporary art and thinking are finally looking beyond the merely accidental. They adopt a greater and more geometrical approach as geometry leads them to mathematical shapes. One type of organizational tool is geometry. Different mythological conceptions of shape are related to geometry.

III. THE ENERGIES OF THE BUILDING

Building energy is frequently used for the ventilation system, lighting system, heating system for cold climate areas, and air conditioning system for hot climate areas. The energy demand for the cooling system, however, is significantly larger than other uses due to the global warming effect, which causes the earth's temperature to rise greatly. In fact, the building's thermal qualities and environment affect how much energy is used overall. Effective building design

must take into account the climate in the region where the structure is to be built. An inefficient use of energy may result from improper construction geometry. In order to increase building energy efficiency, the passive building idea or bioclimatic design may be a good choice. Cost of construction and overall energy usage have been impacted by building shape.

This study uses five existing apartment complexes with varying shape factors to examine the effects of shape factor on the overall energy demand. This study examines how the form factor affects the specific heat demand in homes located in various Nordic climates. Reduced specific heat demand will result from the design of new residential structures with lower form factors. The effect of the form factor, however, varies greatly for buildings with various thermal envelope characteristics and for various climatic situations. In buildings with lesser thermal mass, the form factor has a greater impact on the specific heat requirement. properties and structures that are situated in colder climates are enveloped. The shape factor's influence was shown to be greater in areas with higher average wind speeds.

IV. THE ARCHITECTURES OF HEALTHY SPACES

➢ *Environmental Psychology*

Environmental psychology examines how interactions between people and their physical environments have an impact on them.

- *Color:*

Colors are energy forms that are produced by light. Our psychology, emotions, and biological functions are affected by this energy. The physiological and psychological impacts that colors can have on people have long been recognized by people. They modify biological processes and feelings, as example as anxiety, pulse, blood flow, and arousal, using the energy produced by light. Colors are beneficial for the brain's development in the areas of creativity, productivity, and learning, according to studies. greater excitement than other colors. He showed through tests that red can be more fascinating than green, and that green can be a little more stimulating than blue. the value of color as demonstrated by the present increase in interest in color In order to test the possibility of improving.

- *Daylighting:*

Despite its inadequate brightness, a candlelight has a shimmer and a quiver that mechanical lights simply cannot match. Even though it is natural, monodirectional light is not as ambient as multidirectional light. It appears "alive" in natural light. In a biological sense, it is energising because light, particularly soft rhythmical living light (daylight), with its many moods, colors, and forms that change constantly throughout the day, encourages growth and other hormones that are controlled by human body glands. Additionally, studies show that exposure to natural light improves healing by accelerating the breakdown of proteins, reducing weariness, promoting the generation of white blood cells, boosting endorphin release, lowering blood pressure, and generally enhancing emotional wellbeing. The natural physiological process known as circadian rhythms, which controls physical, mental, and behavioral functions, is also stimulated by sunlight.

- *Noise:*

It's important to recognise the distinction between "noise" and "sound" while planning for healing environments. The term "live" sounds refer to noises that are in real time, such as birds singing in the distance, water running, and wind rustling leaves. Extremely silent spaces give off a "dead space" vibe. Furthermore, in a medical setting, silence can be detrimental because it tends to amplify the beeps and other mechanical noises, which can irritate and alarmed patients, family members, and personnel. If you see them coming and can hear them, intermittent noises like trains won't shock you as much.

V. THE IMPORTANCE OF GEOMETRY IN MATHEMATICS AND ARCHITECTURE

Whether on deliberately or accidentally, architects, builders, and construction experts have employed mathematics for centuries as a very fundamental but crucial instrument for the soulful aim of designing, carrying out, and concluding building projects. In addition to being a well-known architect, Vitruvius was also a well-known mathematician. Later, proportion was built using Pythagoras' mathematical interpretations. Any architectural element's composition and design process benefits from a basic understanding of forms, shapes, and spaces, as well as their arrangement and geometry. The golden sector demonstrates a fundamental harmonic principle drawn from nature and used in music, art, and architecture. The concept of the golden section demonstrates the harmony between geometry and composition. Based on a geometric space, the architectural space.

VI. OCCUPANTS' WELL-BEING AND THE QUALITY OF THE INSIDE ENVIRONMENT

To help with decision-making regarding indoor environmental quality, there are many resources accessible. However, such materials are varied and in-depth in a way that makes the indoor environmental quality problem extremely challenging. That is a market trend for health and well-being inside our architectural, engineering, and construction sector. Construction projects have significantly increased their usage of rating systems and standards over the past five years. Sometimes building occupants and owners put their personal health and wellbeing before energy savings. The levels of air pollution are rising, and there is a global trend toward increased awareness of the effects of exposure to air pollutants and particulate matter. In light of this, we situate this chapter on indoor environmental quality and occupant well-being.

VII. THE PSYCHOLOGICAL IMPACT OF OUTDOOR AND OPEN SPACES

Outdoors and open spaces can help people manage their stress, lower their levels of rage and anxiety, and improve their overall health, according to physiological study on these topics. Having visual access and being in a green environment both enhance one's capacity for concentration and level of awareness. The outdoors and green spaces encourage social contact, leisure, and cultural interests, which piques people's curiosity about the world. The outdoors and open spaces make it possible to engage in physical activities like walking and exercising. Interaction with nature has been shown to have positive impacts on one's emotional, physiological, social, and cognitive health in studies undertaken over the past several decades in a variety of contexts, including offices, hospitals, cities, and experimental labs.

VIII. CONCLUSION

- The Architecture designs also effects on human beings so while designing the impotence should be given for comfort and health.
- The entire structure is represented geometrically, and the use of geometry is accompanied by philosophical justifications.
- The different forms of energy also effect environmental of the building.
- The daylight, color , environmental psychology and noise are huge impact on human beings so proper parameters should be consider while designing.
- The architect should be well known mathematics so that proper proposition was built using Pythagoras.
- The environment of the outdoor of the building should be designed properly so people can manage their stress, anger and improves health issues.

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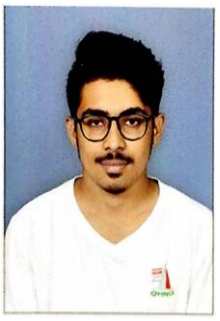
PROFILE

PROF.SANDEEPKUMAR D S
Designation: Assistant Prof in Alvas Institute Of Engineering And Technology

KIRAN RAMANNA MUNDARGI (4AL19CV013)
Address: S M Krishna nagar, Gadag-582102



KARTHIK ASHOK BANDAI (4AL20CV403)
A Address: #Basaveswar nagar, C Block, Haveri-581110

PRAMOD H G (4AL19CV028)
Address: T M road, A K Colony opposite, Honnali-577217

MALATESHA M (4AL19CV016)
Address: Kowli road, Thogarsi ,Shimoga-577433