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The Effect of Views through Windows on Apartment Dwellers in an Urban Setting: A Case Study of Hyderabad Apartments

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ABSTRACT

The rate of urbanisation is increasing in Pakistan as it develops. The connection to nature, however, is receding in urban settings as the country grows. Apartment buildings have been recognized as a characteristic type of urban housing due to the increasing intensity of land use in urban areas. In Hyderabad, one of the neglected aspects of urban living is the neglect of window design, orientation, and view through the window in apartment buildings. Windows are the primary means of communication between the inside and outside of the building. This paper highlights the significance of window views in urban setting in relation to sustainable development. Furthermore, the purpose of this research is to investigate the effect of window views on apartment dwellers in Hyderabad and how it affects the sustainability of a building. The case studies were conducted on apartments in Qasimabad, along with a questionnaire survey based on the residents' preferences for window views and how the existing setting affects their behavior. After analyzing literature, conducting case studies, and completing a survey questionnaire, results suggest that window views promote pleasant emotions, productivity, health, and well-being, which contribute to a sustainable development.

Keywords: Urban Dwelling, Window Views, Built Environment, Visual Comfort, Well-being and Sustainable Urban Living.

INTRODUCTION

Our surroundings have an effect on our personalities. Who we are relies upon where we are living (Matz & Harari, 2021). Humans are part of nature; they cannot thrive apart from it. To thrive in life, man needs to be in touch with nature. However, as the globe becomes more urbanized, the connection to nature is fading in urban areas.

According to United Nations Development Program, Pakistan has the highest rate of urbanization among countries in the South Asia (UNDP Pakistan, n.d.). With the increasing intensity of land use in urban areas, apartment buildings have been acknowledged as a typical type of urban housing (Jeon, et al., 2021). Undeniably, home is a healing base to return to after engaging with the world, and it's a process to revive up your routine (Matz & Harari, 2021). Living in an apartment provides benefits such as price, security, and servicing, but there can also be drawbacks. In apartment dwelling, one of the overlooked aspects of urban living is the lack of concern for window design, orientation, and the view through the window.

The previous studies found that people spend approximately 90 percent of their time in indoor environments. (Jamrozik, et al., 2019). Our lives are cooped up in buildings, with windows typically being our foremost connection to the outside world (Batool, Rutherford, McGraw, Ledgeway, & Altomonte, 2021). There have been very few studies on window views in urban settings. In Hyderabad, window design is the most overlooked aspect of apartment building architecture. Looking out the window often undervalued in practice, despite several research demonstrating that it improves observers' well-being and health and increases their behavioral and visual comfort (Koprivec, Zbasnik-Senegacnik, & Kristl, 2021). People are a part of nature; when they are separated from it, their physical as well as psychological health is affected. People who spend an extended period of time in a closed environment with no windows may face difficulties concentrating, a lack of stimulation, unpleasant emotions,

and other forms of psychological distress discontent, and they may even suffer from severe symptoms such as depression, sleeplessness, and a loss of sense of reality (Koprivec, Zbasnik-Senegacnik, & Kristl, 2021; Logar, Kristl, & Škrjanc, 2014).

The view through the window and the size, shape, and placement of windows are given the minimum attention while designing apartment complexes. Though, windows are our primary means of communication with the outside world. They play the part of bringing the outside world inside by being the source of information (weather, season, etc.), daylight, air, ventilation, nature, and aesthetics. When windows are designed carefully, they help improve lifestyle by maintaining a connection to nature, ensuring psychological as well as physiological health and also enhancing the building's sustainability.

AIM AND OBJECTIVES OF THE RESEARCH

The aim of the research is to study the effect of views through the windows of apartment complexes in Hyderabad on their residents. Additionally, the research intends to benefit architects and designers in reevaluating the current window design in terms of views for the future designs and sustainable development.

To achieve the above-mentioned aim, the following objectives are pursued in the research:

1. To study the window view preference of apartment dwellers.
2. To study the emotional response to views through the windows of apartment dwellers.
3. To study the importance of connection with nature for health and well-being.

LITERATURE REVIEW

EFFECT OF VIEW THROUGH WINDOWS ON BEHAVIOR

Human behaviour is the outcome of an emotional response. How a person feels about the view from their window and the way it affects them has a great impact on a healthy life.

A window serves as a channel for bringing the outside in. Additionally, functions as a source of information, daylight, ventilation and enhanced aesthetics. Residents have been found to benefit in a number of ways from windows that offer views of the outside (Heschong, 2021; Ko, et al., 2022). The benefits comprise but not limited to improved health, physical and psychological well-being, controlled emotions, cognitive performance, environmental satisfaction, reduced discomfort and stress reduction (Ko, et al., 2022). Furthermore, there are a number of positive benefits when observers are exposed to nature (Frumkin, et al., 2017; Kent & Schiavon, 2020). Natural environments have been shown to influence chronological perception, exposure to nature gives the sensation that time goes more slowly (Kent & Schiavon, 2020; Dodo, et al., 2013; Collins, 1976). According to some researchers, the nature view seen through the windows has the same effect on individuals as if one was actually in nature (Koprivec, Zbasnik-Senegacnik, & Kristl, 2021).

Alongside the occurrence of light and views, the window views also have an indirect effect on the efficiency and psychological well-being of occupants (Dodo, et al., 2013). The window views conveying outdoors inside, causes a person to experience visual stimuli and influences his mood (Koprivec, Zbasnik-Senegacnik, & Kristl, 2021; Collins, 1976). (Ozdemir, 2010) Investigated the effect of views through windows on reactions of spaciousness, luminosity, and space contentment in the three-story building at Ankara University. According to research, people who work in workplaces with more natural light and views of the outside are more joyful and content overall.

WINDOW VIEW AND SUSTAINABLE DEVELOPMENT

Windows are essential to the environmental sustainability of any building as they determine our access to nature, views, daylight, ventilation, and the cultural richness of individual buildings.

The Sustainable Development Goal No. 11 states that cities and human settlements should be inclusive, safe, resilient, and sustainable (United Nations, n.d.). To attain the goal of sustainable development, connecting internal and external spaces in an urban setting is essential.

A window with a view is the main source of visual connection with the outside world. The amount of daylight that enters a room depends on the size of the window, but the placement and shape of the window determines how much light enters the room and which portion of the outside world (ground of sky) may be seen (Dodo, et al., 2013). Furthermore, selecting an adequate view window would improve sustainability by designing the proper size of the opening, resulting in a lower amount of construction cost, reducing material waste, and saving energy.

PREFERENCE FOR THE VIEW THROUGH WINDOW IN URBAN SETTING

Preferences for the views through the windows are subjective and differ from person to person. The given number of factors are said to be the basis for window view choice by (Dodo, et al., 2013; Farley & Veitch, 2021): The space's purpose, A person's task, The need for ventilation, The need for light, A visual connection to nature and the outside world, Acoustic preferences and The psychological and health benefits.

Views, on the other hand, have a direct impact on resident health and quality of life, and if they have restricted vision, that can lead to psychological stress. In dense urban areas, apartment dwellers prefer a high-rise, open view (Jeon, et al., 2021).

Residents in urban areas often have different preferences depending on how far the view is from the window. People are happier when view features are remote. According to the findings of (Kent & Schiavon, 2020) building occupants preferred window views with nature to be nearby and urban features to be seen from a distance. Natural environments are often preferred over urban settings (Kent & Schiavon, 2020; Kaplan).

Moreover, dynamic views engage us and are frequently chosen over static views (Orquin & Loose, 2013). Brief movements in the view give building residents the awareness of their surroundings as well as connectivity to the outside world (Ko, et al., 2022).

VIEW QUALITY

The view from the window has a direct impact on the health and well-being of the residents. The quality of the view should not be overlooked in order to provide a pleasant impression. The characteristics of window views determine the quality of view. Chang theorized the seven attributes as the characters that determine the view quality, i.e., Proportion of greenery, number of visual layers, view elements, balance, diversity, Openness, Depth of view (Chang, 2021).

In urban settings most of the view consists of neighboring structures. Minimum consideration for the landscape is made. The landscape of an apartment building not only promotes stress mitigation for occupants, but it also serves as a healing environment (Jeon, et al., 2021; Chun & Lee, 2016). If designers struggle to integrate distant elements in the window view due to site-selection limitations, an alternate approach might be to increase window view quality by incorporating natural elements such as indoor plants and trees or installing planters by the window sill (Veitch & Galasiu, 2012; Kent & Schiavon, 2020).

Nonetheless, due to the existing economic crisis, the increase in land prices has led to a question about the provision of landscape. However, in congested urban settings when only the adjoining building is visible through the window, visual comfort is influenced by the architectural components that shape the façade and determine the aesthetic quality of what is viewed (Drobne, Senegacnik, Kristl, Koprivec, & Fikfak, 2022).

WINDOW VIEW AND EMOTIONAL WELL-BEING

Donald Hebb stated that among all creatures on Earth, man is the most emotional (Hebb, 1949). Experiments in psychology have shown how emotion can alter our perception, attention, and memory by focusing them on crucial components of our surroundings (Brosch, Scherer, Grandjean,, & Sander, 2013). Different people may react differently to the same views, and the same person may react differently each time they are exposed to similar views (Brosch, Scherer, Grandjean,, & Sander, 2013; Siemer, Mauss, & Gross, 2007). Response to the view are merely based on emotions of individuals. Window Views influence the intensity of emotions inside individuals. The urban views as opposed to the natural ones are more likely to be beneficial to emotional health and well-being. Emotional contentment is higher in people in a room with window views close to nature in contrast with the windowless condition (Kent & Schiavon, 2020; Ko, et al., 2020).

According to previous studies based on the impact of natural and urban views on psychological well-being, visual exposure to outside environment can have positive impact on emotional well-being. The findings of the study suggests the relevance of visual contact with nature extends beyond aesthetic benefits and includes a variety of psychological well-being benefits (Ulrich R. S., 1979).

VIEW ACCESSIBILITY

The quantity of view an occupant sees through the window from the viewing position determines view accessibility. It precisely relies on window design and location of dweller. Many green-building certification schemes employ the percentage of occupied space with a window view (Ko, et al., 2022). Day Lighting standards (EN 17037 Daylight in buildings, 2018; LG10: Daylighting - a guide for designers, 2014) additionally prescribe that visual information viewed in the view be distant from the occupants' viewing position at minimum thresholds of 6 m, 20 m, and 50 m, respectively (Kent & Schiavon, 2020).

Humans are part of nature, and their habitat belongs to nature. Many studies suggest that human tend to prefer natural over urban environments. In instances involving healthcare issues, nature has the potential to restore the well-being of humans. (Ulrich R. , 1984) Investigated the rehabilitative effects of nature views on pain and anti-anxiety drug usage, as well as surgery patients' recovery. The findings of his study on evidence-based design revealed that hospital patients were therapeutically influenced by natural sceneries.

METHODOLOGY

The research was carried out using a review of the literature, a questionnaire survey, case studies, and an analytical study based on the opinions of the residents of an apartment in Qasimabad.

CASE STUDY – 1

A case study of an apartment in a building named Asad Paradise in Qasimabad was conducted. The building consists of ground plus four stories, with five apartments of two types on each floor. A study was conducted on the general category of apartment on the second floor that consists of two bedrooms with an attached bathroom, a balcony facing South, a kitchen, a lounge, and a drawing room. The two bedrooms were studied for comparative analysis between rooms with and without windows. As shown in fig 1, only one bedroom has a window with a view of the balcony. The second bedroom, on the other hand, lacked windows and instead had a door that led to the balcony, as shown in figure 2.

The room with a window leading to the balcony has a window measuring 3'-0"x4'-0" with a sill height of 3'-6". Due to the high height of the window sill, the view cannot be seen from the bed or even while sitting on a study chair, as shown in Figure 1. The window, however, lets in adequate natural light for the size of the room because it faces south.

On the other hand, bedroom 2 lacked a window and had a door leading to a balcony instead. The bedroom had a wire-mesh door along with the wooden door, which provided a view of the balcony but also worked as an agent of noise pollution. However, the room cannot have a connection with the outside world without noise.

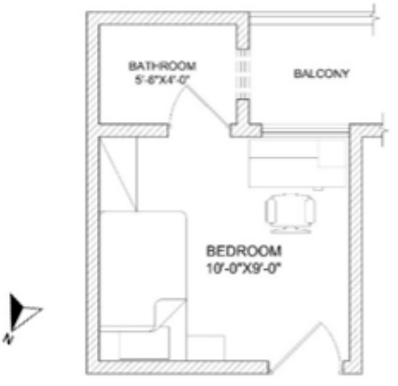

FIGURE 1. Plan of Bedroom-1

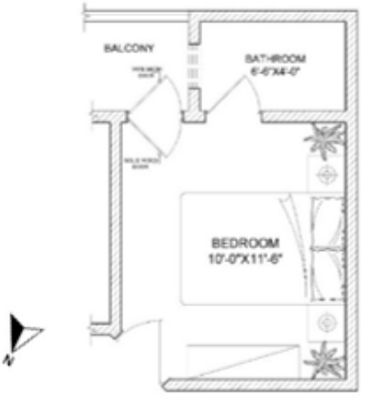

FIGURE 2. Plan of Bedroom-2

CASE STUDY – 2

A case study of an apartment in a building named Abdullah Sports Tower was conducted. The structure is eleven stories tall, with a commercial and residential plaza. The residential plaza is categorized into three apartment types: A1, A, and B. The case study took place in a B-category apartment on the third floor, which had two bedrooms with attached baths and balconies, a drawing room, a powder room, a lounge with a balcony attached, and a kitchen.

The lounge, consisting of a window leading to the balcony, provides a view of the outside without any obstructions, as seen in Figure 3. The floor-length window allows viewers to enjoy the view from any angle, but the view is limited to the neighbouring building, violating the privacy of both residents. The window lets in daylight, natural air, and weather information, but it fails to provide an aesthetic view and thus cannot be considered a view window.

The bedroom-1 window also leads to the balcony and provides a distant view of the neighbouring building, as shown in figure 4. The bedroom-2 has a window with a view, as seen in figure 6, but the view cannot be enjoyed from all angles of the room because of the height of the window, as seen in figure 5.

All the windows provide a visual connection with the outside world, bring natural light and air, but do not provide comfortable or aesthetic views of nature or the outside world.

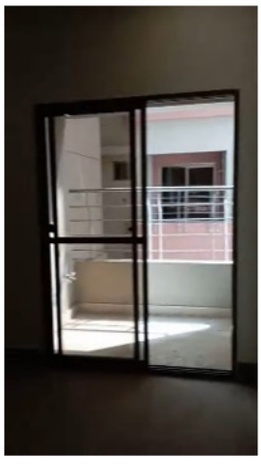

FIGURE 3. Lounge Window

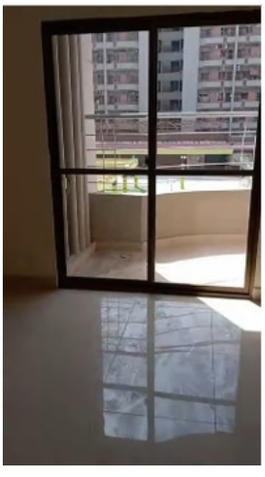

FIGURE 4. Bedroom-1 Window

FIGURE 5. Bedroom-2 Window

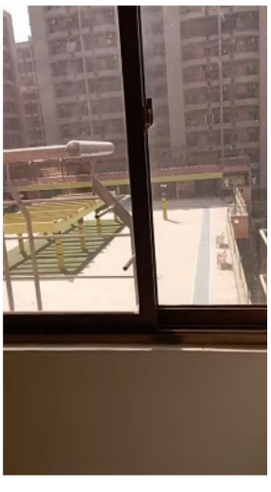

FIGURE 6. Bedroom-2 Window View

QUESTIONNAIRE SURVEY

The questionnaire survey was conducted based on the apartment dwellers' preferences regarding view windows and how their emotions are affected by the current setting. In the survey, both males and females participated equally. Furthermore, the survey was divided into two sections: dwellers' emotional reactions to current window view settings and their preferences.

In the first section of the survey, data was recorded using a closed-ended questionnaire to analyse the viewing preferences of the apartment dwellers. In the second section of the survey, the data was recorded using a 5-point Likert scale to analyse the emotional behaviour of apartment dwellers toward window views. The questionnaire data was analyzed statistically based on the most common answers and response variability. The results are shown in Table 1.

TABLE 1. Results of Survey Analysis

View Preference			Emotional Reaction	
Interrogation	Results		Interrogation	Results
Choose sitting near window	yes	no	Level of pleasantness towards urban landscape	3
	80%	20%	Level of pleasantness towards natural landscape	5
Chooses watching out:				
• Natural landscape view	70%		Level of satisfaction towards natural light	4-5
• Sky	35%		Level of satisfaction with window	4-5
• Birds and animals	40%		Level of satisfaction without window	1-2
• Neighboring buildings, road and people	15%			
Natural light	95%		Level of positive emotions with view	4
Shading devices	55%		Level of positive negative with view	2
Natural air over air conditioner	75%		Increase in productivity level with view	4
Acoustic preference:			Emotional well-being with view	4
• Birds and animal	55%			
• No sound	35%			
• People existence	10%			
Privacy concern	high	moderate		
	65%	35%		

DISCUSSION

In Pakistan, the mental health and emotional well-being of urban citizens are poorly affected due to many reasons, one of which is being away from nature. As the studies concluded above suggest, humans are part of nature and belong to nature; therefore, their healing abilities are also with nature. If a natural habitat is kept away from nature, its health and well-being are affected. Due to urbanisation, the increase in vertical development became the cause of the neglect of natural views and their importance. However, vertical development cannot be stopped but can be improved by incorporating natural views into the built environment.

The windows being the only source of connection with the outside world (i.e., natural elements), they must be designed carefully and should be given important consideration.

This research aims to find the solution to how a view window affects the residents of apartments in Hyderabad. Window design is an important element of building construction. This is essential not only for day-lighting, but also for sustainable development, because it covers a wide range of areas, from health and well-being to environmental effect and efficiency.

The literature review suggests that the view window affects the behaviour of dwellers, sustainable development, emotions, quality of view, preference of view, and accessibility of view. Case studies prove the absence of view windows and questionnaire survey verifies the importance of window view design in the current setting.

The overall findings of the study suggest that people prefer to spend time in a room with windows rather than a room without windows. The windows with views of nature have a positive impact on a person's emotional and physical health. The window view does not only improve overall life quality but also enhances the sustainable development of a building. However, in urban areas where the view of nature is limited, the quality of the view is controlled by nearby faces and their design elements. Moreover, the results suggest that the preference for views was independent of the gender and age of the dwellers, but the need for views varies from person to person depending on which part of the residence they spend the most time in.

Further points of the study are discussed below:

1. Productivity in the active zones such as kitchen is compromised due to the absence of a view window.

2. View window affect the emotional state of a person therefore, people such as students and researchers are less likely to concentrate on their studies because of the lack of emotional peace.
3. Windows are the primary means of daylight in an urban setting, and due to poor window design, children lack vitamin D because of the insufficient sunlight in the apartments.
4. People are part of nature, and connection with nature increases health and well-being. Dwellers like to spend less time in their homes due to their disconnection from nature.

PROPOSED SOLUTION FOR APARTMENTS IN HYDERABAD

Considering the current state of urbanisation in Hyderabad, views of nature are difficult to achieve. However, linking the floor-length windows of each room to balconies and installing plants on the balcony can create view of nature and privacy from adjacent buildings.

CONCLUSION

Hyderabad is rapidly moving toward vertical living due to rural-urban migration. But the city lacks consideration for urban dwelling. One of the most neglected issue is emotional well-being caused by less consideration given to window design. The study investigates the importance of window views and their impact on dwellers' emotional well-being. The research was concluded after reviewing literature and conducting a survey and case studies of apartments in Qasimabad. The study proves the negative impact of current settings regarding window design considerations. The research also concludes that the window views increase positive emotions, productivity, health and well-being and sustainability.

According to the findings of the study, there is a serious need for efficient window view design considerations for apartment buildings in Hyderabad. The study suggests that architects, designers, and urban planners should reevaluate the present window view design considerations in this regard. Redesigning corridors and implementing courtyard designs in apartment buildings can help achieve window views in all rooms of an apartment.

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DECLARATION OF COMPETING INTEREST

None

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