

“Green and Sustainable Building”

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ABSTRACT

“Since the beginning of life on earth man has been avoiding the importance of natural environment and healthy life but the rising population has commenced the competition for natural environment including land, air, water, and light while the excessive use and demand of energy has made the healthy life a dream. In such challenging circumstances the concepts of universal design, green building design and sustainable buildings through the selective and green materials can leave positive impact and may provide healthy and quality life style. This research will help out to determine that how green and sustainable buildings and materials can make urban life a worth living and how these ideas can facilitate healthy and quality life style, energy efficient life, social equity maximum accessibility, economic viability and adequate future development with the help of careful planning”

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1. INTRODUCTION

From the beginning of 21st century the Architects, Planners and Engineers work on those construction which is more sustainable and eco-friendly .They work together and they give innovative ideas in constructions. The architects give the new designs which is aesthetically strong and it's also does not disturb the nature .keeping in view the engineers introduce new materials with less impact and full of strength , durable as compared as past centuries . A question might be

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arising in your mind that what green building is? Some people may think of a green, or sustainable building just a building that does not really have as bad impact on the environment as another 'average' buildings. The Green building's seek to use land and energy efficiently, conserve water and other resources, improve indoor and outdoor.

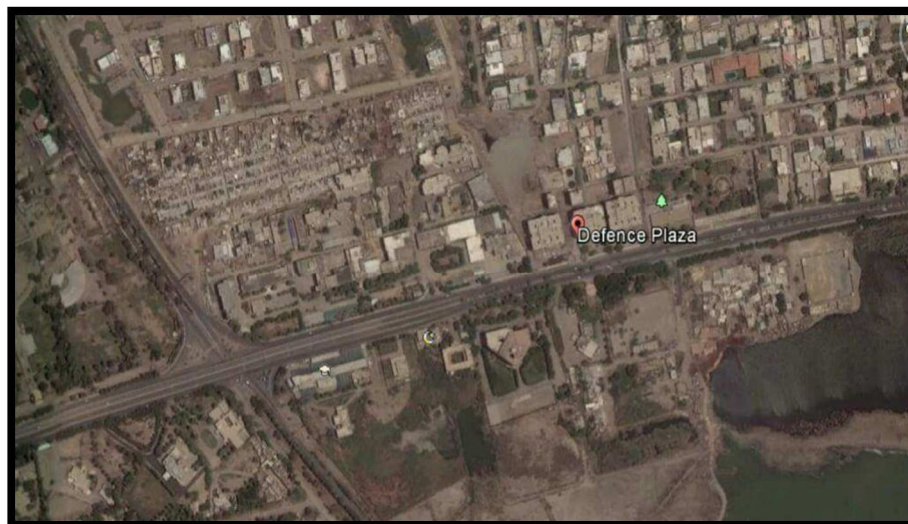
The contemporary green building movement arose out of the need and desire for more energy efficient and environmental friendly building practices and [1] Improvement to the built environment including ventilation lighting and materials have resulted and in improved indoor environmental quality (IEQ) in green buildings. The green sustainable building approach has a high potential to make a valuable contribution to sustainable development.

[2] They will also look for energy savings in the physical layout, using natural light where possible to minimize the need for electric lighting and building orientation. [3] The practice of increasing the efficiency with which buildings and their sites use energy, water, and materials, and reducing building impacts on human health and the environment, through better siting, design, construction, operation, maintenance, and removal the complete building life cycle. [4] Although green buildings represent the next phase of buildings, the reality is that the vast majority of buildings are not green, and these buildings will continue to be used for many years to come. green building a design to have low environmental impacts and improved occupant health and well being. Many older buildings suffer from what is commonly referred to as "sick building syndrome." [4] The Indoor Environmental Quality (IEQ) category in LEED standards, one of the five environmental categories, was created to provide comfort, well-being, and productivity of occupants. The LEED IEQ category addresses design and construction guidelines especially: indoor air quality (IAQ), thermal quality, and lighting quality. This paper presents an overview of green sustainable buildings and materials common green building practices with respect to siting, energy efficiency, water efficiency, building materials, occupant health and well-being, and construction and

demolition waste.

1. STUDY AREA

Hyderabad is the second largest city of Sindh province and seventh largest city of Pakistan. Hyderabad is a big city of Sindh province and popular by its industrial and commercial centres. It consists of 4 Talukas. It is located on the east bank of the Indus River. Hyderabad is facing many problems. The researcher has selected one of the dens populated area Defence Plaza to make it green or efficient building. Defence is one of the main taluka of district Hyderabad.



(a)

Figure 1: Study Location Area

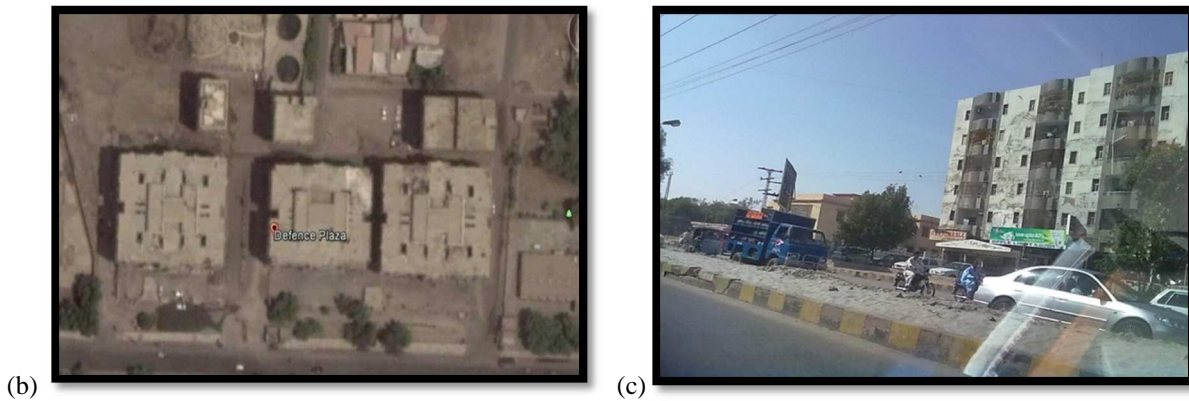


Fig. 2. 3 view of defence plaza in (a) condition A and (b) condition B.

1.1: LEGENDS FOR ENVIROMENTS:

INTERNAL ENVIROMENT	EXTERNAL ENVIROMENT
a disabled car park	f Building entrance foyer
b External stair case	g door
c natural light	h Room & spaces
d ventilation	i barrier free toilet
e natural air	j barrier free shower area
	k Room & spaces
	l internal step ramp
	m Ramp (interior)
	n Stair case (interior)
	o Lift
	p natural light

2. MEHODOLOGY

This paper focuses to address various issues of geen sustainable building. This study uses a social survey in the form of the questionnaire and in-depth interviews to analyze defence plaza facilities and spaces for people. In this way it incorporates both quantitative and qualitative approaches. Questionnaires can provide the evidence weather it is green building or not. Through this survey researcher can solve all

problems and make the building green and efficient. The study investigates the health and safety impact of a buildings internal external environment throughout the building design .the paper presents the extent to which green buildings could generate co-benefits and opportunities to push green building agenda forward. The growth and development of our communities has a large impact on our natural environment. The manufacturing, design, construction, and operation of the buildings in which we live and work are responsible for the consumption of many of our natural resources.

3. DATA COLLECTION

The data were collected through questionnaire survey to examine the issues in defence plaza during two weeks of field survey. Three blocks of buildings (A,B,C) were selected for survey , in each block there were 50 flats Total 34 questionnaire were analyzed from 30 peoples in each block.

4. RESULTS AND DISCUSSION

The results indicate that green and sustainably renovated buildings could yield significant benefits in terms of energy and co2 reduction ,cost savings and improved health sanitation for building users . Green building provide healthy environment due to improved indoor and outdoor air quality thermal comfort and more natural lighting. Green building, or sustainable design, is the practice of increasing the efficiency with which buildings and their sites use energy, water, and materials, and reducing building impacts on human health and the environment over the entire life cycle of the building. Green building concepts extend beyond the walls of buildings and can include site planning, community and land use planning issues as well.

A building designed to be ecologically correct by using resources efficiently, using internal

recycling, renewable energy sources, recyclable or biodegradable construction materials, and blending in with the local environment, particularly in out-of-town locations. The aims are to reduce to a minimum the environmental impact, and to take human health factors into consideration.

Source: en.wiktionary.org/wiki/green_building

A comprehensive process of design and construction that employs techniques to minimize adverse environmental impacts and reduce the energy consumption of a building, while contributing to the health and productivity of its occupants.

Source: www.smith.edu/physplant/greenteam/glossary.php

A movement in architectural and building circles aimed at creating structures that are occupant and environmentally friendly. Criteria such as sustainability, energy efficiency and healthfulness are considered.

Source: www.windowanddoor.com/article/resource/industry-glossary

Green or sustainable building is the practice of creating healthier and more resource-efficient models of construction, renovation, operation, maintenance, and demolition.

Source: www.newpaltz.edu/green/definitions.html



(d) Figure:4 A modern promise: green building



(e) Figure:5 creating sustainable future

Figure 4: We partner with our customer to deliver high performance green building that achieve sustained result over time.

Figure 5: A high performance green building in designed for economic and environmental performance over it entire life cycle considering unique sustainable environment and cultural needs and providing for the health safety and productivity of its occupants.

4.1 POOR IMPACT OF INTERNAL AND EXTERNAL BUILDING ENVIRONMENT



(f) **Figure6 Internal view of wall seepage**



(g) **Figure:7 External view of building environment**

Figure 6: There are multiple reason like rising deepness from high ground water table cracks through which rain water sees inside, seepage from ad joining leaking walls of bathroom and kitchen.

Figure7:This picture shows the bad impact of building because the building environment must important in green sustainable building because environmental impact improves occupant health and well being and built environment including ventilation.

5. CONCLUSION:

The sustainability can be achieved by the development of green infrastructure.

The absence of green and sustainable infrastructure effects on the, Health, social and environmental condition of the local population. This paper evaluated the issues of the buildings and its adverse impacts on the human health and also on urban environment. In doing this, poor performance of building was examined in Hyderabad city. The result found that 30% of the population are replied good And 40% population was not satisfied.

As in result, the public Building condition determined poor. It is required improvement and placement of services to attract the users. Moreover, due to insufficiencies in overall government structure, the Sewerage, sanitation and Garbage collection planning became unsuccessful. There is no proper method to bring sustainability in Sewerage, sanitation, Garbage collection and waste reduction development projects in developing countries. The role of government institutions and regulation authorities were also found non-operational which often produces difficulties to carry advanced monitoring and evaluation processes.

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References

Follow the reference style IEEE.

[1] <http://sustainabilityworkshop.autodesk.com/buildings/building-massing-orientation>

- [2] www.greenredescisions.com/glossary/sustainable-building
- [3] http://sallan.org/pdf-docs/CHOWE_GreenBuildLaw.pdf
- [4] https://en.wikipedia.org/wiki/Green_building4
- [5] <http://www.slideshare.net/seindia/presentation-se-smart-buildings>
- [6] <http://www.sciencedirect.com/science/article/pii/S0360132316303389>
- [7] <http://www.sciencedirect.com/science/article/pii/S026427511500164X>
- [8] <http://www.sciencedirect.com/science/article/pii/S0959652616001359>
- [9] <http://www.sciencedirect.com/science/article/pii/S1877042813020806>
- [10] <http://www.sciencedirect.com/science/article/pii/S0360132316301639>
- [11] **Effects of green buildings on employee health and productivity**
Am. J. Public Health, 100 (9) (2010), p. 1665
[Citing articles \(49\)](#)
- [12] **Green schools Attributes for Health and Learning**
N.R. Council (Ed.) (2007) Washington, DC
- [13] **Indoor environmental quality benefits of apartment energy retrofits**
Build. Environment., 68 (2013),
pp. 170–178 [Article](#)
[Citing articles \(15\)](#)
- [14] <https://www.theguardian.com/sustainable-business/2015/dec/29/sustainable-development-leed-green-buildings-architecture-design>
- [15] .Indoor environmental quality benefits of apartment energy retrofits

Build. Environ., 68 (2013), pp. 170–178

Article

PDF (1625 K)View Record in Scopus Citing articles (15)

[16] <http://www.wncgbc.org/about/importance-of-green-building>

[17] <http://www.greenresourcecouncil.org/green-resources/what-green-building>

[18] <http://www.greenconcepts.com/>

[19] <https://us.sunpower.com/what-green-building/>

[20] <https://greenbuildingsolutions.org/what-is-green-building/green-building-guiding-principles/>

[21] https://www.sla.org/wp-content/uploads/2015/06/1486_HotTopicsinArchitectBldgDsgnArzeta.pdf

[22] https://www.itu.int/dms_pub/itu-t/oth/4B/04/T4B0400000B0012PDFE.pdf

[23] <http://www.gdrc.org/uem/green-const/1-what.html>

[24] <http://www.conserve-energy-future.com/top-15-green-home-building-techniques-and-ideas.php>

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