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"NCSAPT 2020 Conference Papers"

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Sustainable Strategies for Living Architecture of West- Maharashtra Context : Climatic Responses & Sustainable Insertions[Full-Text

Ar. Vijay B. Sambrekar, Dr. Suresh V. Ranade, Ar. Shantanu P. Jagtap

The environment like our bodies can metabolize nutrients and waste. Living Architecture focuses on these processes, integrating ecological functions into the buildings to catch, store, and filter water, purify air, and process other nutrients. Living Architecture also addresses biophilia, the documented health benefits associated with being in touch with living systems in the built environment. Living with sustainable a life is a need of a time now. In specific Architecture of West Maharashtra w.r.t. Residential is a blend of Traditional aspects with modern thoughts.

LIVING FOOTPRINTS Sustainability and traditional wisdom[Full-Text

Ar. Bindu Malhotra

The COVID-19 pandemic has shown us the reality. During this time of crisis, we are relying upon old tradition wisdoms of using Turmeric, tulsi, and hot water for sustainability. No wonder, even in the technologically modern 21st century, solutions can be found in olden times. Navaghar, Navseeds, Ayurveda and yoga belong to ancient times and there is so much to learn from it. What is sustainability - is it livable conditions, is it safe comfortable conditions, is it old living methods, or is it modernization/urbanization.

Concrete and its study as an eco-friendly material of building construction[Full-Text

Ms. Gautami Prabhakar Bura, Dr. Parag Govardhan Narkhede

Concrete has a leading role to play in meeting the big challenges we face today. When taking the performance of a building over its whole lifecycle into account, concrete offers significant benefits over other building materials, such as its durability, its thermal mass, load carrying capacity, its recyclability, and its carbon uptake. Concrete has one of the highest CO2 emissions of all building materials, during the manufacturing of cement these emissions are produced. A way to optimize its production and application in construction while decreasing its environmental impact is essential.

Effect of tall building cluster on Environmental Quality within and in adjacent areas[Full-Text

Ar. Ankita Pathare

Today, tall building is a phenomenon that the world, particularly large cities are facing. Tall buildings are constructed in order to exploit the land, but have negative effects on the environment and create new problems including increase in congestion, environmental pollution and cut city-dweller access to fresh air and sunlight. However, due to ever increasing population and land shortage, tall buildings cannot be avoided.

Green Roof Design for Urban Homes in Tropical Climate[Full-Text

Ajinkya Niphadkar, Pooja Niphadkar

Global warming scenario is becoming crucial day by day. Designing green buildings & lowering carbon footprints at highest became an important part of construction industry. Under such crisis, proposing a green roof for city houses will help in lowering the use of non renewable energy. This study is directed towards comprehensive study of green roof. A case of bungalow having an area of 1250 sq.ft. is been chosen for installation of the green roof. The green roof uses an area of 398 sq.ft. & roof utilizes photovoltaic panels & grid linked photovoltaic system of 5400 watts. The roof comprises of 15 solar panels with aggregate generation capacity of 4650 watts.

Life cycle Assessment of different walling materials and their comparative analysis[Full-Text

Ar. Rahul C. Shrikhande, Ar. Pranjali Desale

Energy use of a building can be derived from five sources: Embodied Energy from mining and manufacturing of materials, Energy from transportation of materials, Energy from construction of the building, Energy use during operation of the building, and Energy used in the disposal of the building at the end of its life. Buildings use many materials with a high Embodied Energy, and it is estimated that 40% of the total energy use comes from Embodied Energy in materials.

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Effect of tall building cluster on Environmental Quality within and in adjacent areas. (A case of Pune City.)

Ar. Ankita Pathare, Assistant Professor, MVP College of Architecture, Nashik

Abstract— Today, tall building is a phenomenon that the world, particularly large cities are facing. Tall buildings are constructed in order to exploit the land, but have negative effects on the environment and create new problems including increase in congestion, environmental pollution and cut city-dweller access to fresh air and sunlight. However, due to ever increasing population and land shortage, tall buildings cannot be avoided. This paper investigates the relationship of tall buildings with environmental parameters, namely sunlight, air temperature and wind patterns. The study is done to understand the impact on air temperature and wind pattern due to a group of 12 floors (36m) tall buildings. The study also aims to verify that the impacts studied in other research paper, hold true for a buildings with 36m height. The study is carried out in Pune and two case studies are considered for the study. Readings are taken at identified points. It is found that there is no air temperature variation observed due to the shadows casted by the buildings. The wind speeds however vary within and in adjacent areas. The variations observed are not only because of the heights but also due to architectural form and layout of the project.

Index Terms— tall buildings, environmental parameters, wind speed, air temperature, impact of building height, architectural form, environmental quality.

1 INTRODUCTION

Tall buildings may also be referred to as 'Multi Dwelling Unit' or 'Vertical cities'. Tall buildings have gained popularity throughout the world. They act as landmarks of the city; create a unique skyline and increase land use efficiency (K.Rangwala, Feb,2010). Tall buildings have the potential to decongest the urban sprawl on the ground and increase the urban density by housing higher number of people in lesser space (Ali, July 2012.). Tall buildings are constructed in order to exploit the land but have negative effects on the environment and create new problems including increase in congestion, environmental pollution, cut citizen access to fresh air and sunlight.

Although there is no precise definition that is universally accepted, various bodies have tried to define what 'high-rise' buildings (Patil, February 2014):

- The New Shorter Oxford English Dictionary defines a high-rise as "a building having many stories".
- The International Conference on Fire Safety in high-rise Buildings defined a high-rise as "any structure where the height can have a serious impact on evacuation"
- The International Building Code (IBC 2000) and the Building Construction and Safety Code, NFPA 5000TM-2002, Paragraph 3.3.28.7 of the Life Safety Code®, 2006 edition, define high-rise buildings as buildings 75 feet or greater in height measured from the lowest level of fire department vehicle access to the floor of the highest occupiable story.
- The National Building Code of India (NBC), a tall building is one with four floors or more or a high-rise building is one 15 meters or more in height.
- The Pune Municipal Corporation (PMC) proposed that any building with a height of 36m (twelve floors) be categorized as a high rise.

2 DATA OF PUNE

2.1 Climatic Data of Pune

Pune is located 18°31'13"N and 73°51'24"E. The study for the project is carried out in October. The climatic data considered for the base case, therefore for the month of October. The daytime and nighttime temperature of Pune in October is 31.8°C and 18.8°C respectively. The relative humidity is 63.8%. The prominent wind direction, in October, in morning and evening is west. Wind speed in the morning is 7km/h and in the evening it is 19km/h. (IMD)

2.2 High rise structures in Pune

Pune is the seventh largest city in India and second largest city in Maharashtra after Mumbai (L. KantaKumar, 2011). The distance from Mumbai is 148 kms. Pune Municipal Corporation (PMC) jurisdiction extends up to an area of 243.84 sq. km. housing 2.54 million populace within 144 wards. (Pune Municipal Corporation. Pune and Growth direction. Comprehensive mobility plan for Pune city.) The population of Pune accounts for 35 percent of the total Urban population in Pune District and 60 percent of total PMR population. The PMC's population has grown from 1.57 million in 1991 to 2.54 million in 2001, and in the last decade experienced a compounded annual growth rate of 4.94 percent. (L. KantaKumar, 2011) In Pune a high-rise building is defined as classified in the National Building Code (NBC). Any built structure, which is 36m and above is classified as a high-rise. The development pattern of Pune indicates that though suburb areas like Hinjewadi developed as IT hub, have witnessed high rise structures, most of the city and its peripheral suburbs have developed tall structures for residential use (Sundrani).

2.3 Role of building on Climate

Tall buildings have an effect on the urban wind pattern. Urban wind is wind flowing over an open area and around

height and building profile. The only difference is the absence of built mass at the site corner. In case of Karishma the openings at the corner of the site, experience maximum wind speed. This is due to the corner effect. Corner effect increases the wind velocity, created by wind moving around the building. As a result the central open space in Karishma has higher wind speeds than Petkar Samrajya. In case of Petkar Samrajya, high wind speed due to corner effect is recorded on the adjoining north road at pedestrian level.



Fig.10. : Variations in wind velocity (Karishma Society)



Fig.11. : Variations in wind velocity (Petkar Samrajya)

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5 CONCLUSION

Tall buildings have an impact and play an important role on climate or weather and environment, where changing climate factors are related to sunlight and wind. From the study it can be concluded that the effect of building on winds is a result of their height, their architectural form, and their layout. Temperature variation is not observed due to the shadows casted by the buildings, either within or in adjacent areas. Mutual shading caused due to the building height, in the adjacent areas, may cause occupant discomfort, due to less sunlight. The areas within and adjacent to the project have varied wind velocities recorded. Tall buildings create unique wind patterns around them. Efficiently using this wind pattern can provide comfortable conditions within and in adjacent areas.

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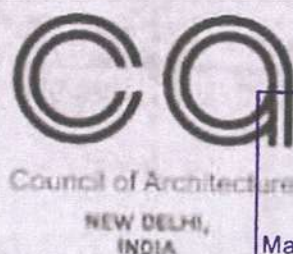
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Dance and Music in Indian Temple Architecture

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Abstract -Fine arts in the form of dance, music, painting, sculpture or architecture have a great power of attracting the attention of human beings of diversified interests and tastes. Indian art in the form of dance, music, theatre, poetry, painting, sculpture, architecture have evolved through the centuries in complementing each other. They coexist as an intertwined system of Hindu philosophy. The art forms of music, dance and architecture define the three-dimensional space by sharing a special relationship. Human existence and activities, structure the architectural space. The ancient Indian temples are well known for their magnificent architecture and construction. Almost all the temples across the country have majestic and beautiful sculptures carved on their interior and exterior façade. These sculptures include various Gods and Goddesses, mythological creatures like Yakshas and Yalis, Flying Gandharvas, Dancing figures, Musicians playing various instruments, animals like horses, elephants, bulls are most prominent. It is also mysterious to see that the pillars which in absence of heavy carvings are made to produce melodic sounds. This paper attempts to illustrate upon the connection and relation between the art forms of music and dance through the folklore of temple architecture.

Key Words: Temple architecture, Natyashastra, Sculptures, Mantapas

1. INTRODUCTION

The architecture of India is rooted in its history, culture and religion. Indian architecture progressed with time and assimilated the many influences that came as a result of India's global relation with other regions of the world through its past. The establishment of traditions and cultural interactions led to the examination and implementation of the various architectural methods practiced in India. Music and Dance have been the integral part of the Indian performing arts and showcases the diversity with the region. The temples play an important role in the social, economic and spiritual life of the people.

Choodamani Nandagopal in her article – 'Indian dance and other arts' say 'What the thousand words cannot communicate, dance hand gestures or few lines and colors create a great sense of visual impact of everlasting nature. Many philosophical or religious paradoxes that are found extremely difficult to touch the minds of people are conveyed with ease through the medium of art. Every culture in its formative stages have applied the visual and performing art forms to communicate the complex ways of religion and thereby brought the followers into the fold of collective

consciousness. The art would take the people to a state of wellbeing which could motivate them furthering the cause of human progress.'

The temple in Indian art is symbol of the universe inhabited by Gods, demi-gods, human beings and animals which are represented on the walls, pillars, ceilings and door jams. Both good and evil which exist in total reality are taken into account. This is an important theme in Indian art. The temple is also the spiritual center regulating not only the religious life but also the social activities of man. Here, one gets to learn all fine arts and the very art of living. Hence all aspects of life are depicted on the temple walls. (Banerjee 2004:23).

Some of the temples built between 8th and 16th century have the interesting architectural elements like musical pillars and musical steps. They are made of solid granite stones. The musical pillars and steps are often carved from a monolithic solid granite stone with calculated geometry like length, diameter and carvings and are tuned to produce the proper pitch and scale and tones. The produced sound thus fills the atmosphere with melody. They were played to accompany the devotional hymns and often as the percussionists to the vocal singers and dance performers.

In the Thillai Natraja temple at Chidambaram, the Raj Gopuram has carvings of 108 postures of dancing (Bharatnatyam). Similarly, the ancient sculptors infused music in the stones used in the temple construction. They not only produced musicians playing various instruments but also chiseled various sound producing elements. One can come across musical pillars, musical stairs, bronze and stone musical icons, musical bells and musical pipes made out of stone.

2. NATYASHASTRA – EVOLUTION OF INDIAN PERFORMING ARTS

Natyashastra is a written Sanskrit text on the performing arts, drama, theatre, dance, music and other various topics. The word Natyashastra also refers to a global category of literature encompassing the ancient Indian tradition of dramatic performance. The work dates back to as far as at least 1st millennium BCE. The text consists of 36 chapters with total 6000 poetic verses covering the subjects that include dramatic composition, structure of a play and the design of the set, genres of acting, body movements, costumes and make up, musical scales and instruments and overall synchronization of the art. The Natyashastra is notable as an ancient encyclopedic treatise on the arts, one which has influenced dance, music and literary traditions in India. India being the land of rich culture and heritage had music, dance and drama as the integral part of the cultural society since beginning. The art forms so developed were



Fig -11: Stone Nadaswaram, Kumbakonam

Apart from the musical columns there are many other objects in the temple that produced sounds –

1. Musical Stairs –
Capital of the Chola kings, the city of Kumbhakonam, in the Thanjore district have many shrines in the vicinity. One can find the musical stairs at Darasuram. The sides of these stairs are beautifully carved. The 7 of the 8 stairs are not fixed to the ground when struck produces different tones.
2. Musical icons in stone –
The musical pillars are built by carving out the beautifully sculptured figures from the same granite stone. The icons of lord Ganesh and Garud in the Brihadeshwara temple at Thanjore, the icons of Rati and Manmatha in the Sri Vishnu temple at Shanbagrmanallur and other sculptures found in the Krishnapuram temple of Tirunelveli district when struck their limbs produce the musical notes.
3. Musical icons in bronze-
There are musical icons cast in bronze similar to the stones. The bronze icon of the lord Vishnu at the Tirumangali temple, near Kanchipuram produces all the seven notes of the octaves when the statue's seven limbs are struck.
4. Musical pipes –
The musical pipe drilled through a stone pillar supports the roof of the Shiva temple at Shanbagaramanallur. The pipe is conical in shape. When blown sharply from the one end produces the sound similar to the brass blow pipe. The Sri Adi Kumbheshwara temple at Kumbhakonam has two Nagaswaram pipes made from soapstone. Pipe is 55cm long and has 17 cm brass mouth piece. There is also a stone pipe called Mukha Veena, still being used in the Sri Adi Nath temple at Alwartirunagari.

9. OBSERVATIONS

It has been observed that Indian temples had patronized different forms of performing arts. Indian arts are based on two based on two principles – Dynamic and Static. Dance, music and theatre are dynamic art forms while painting, sculptures and architecture are of static art forms. The Indian religion, culture and philosophies have blended these art forms and these art forms are unified substance overall. It can be seen that the art forms of dance and music

are projected and represented in the forms of paintings, writings, sculptures and architecture in the integration with space and time. Dance and music are the arts non-permanent in the context of time and space and the Rasika, the spectator is an integral part of the creative process of rasanubhava in the surroundings of divine or mundane; whereas paintings and sculptures are permanent but do not involve the rasikas in the process of creation. The creation of these art forms has a huge backing of the Natyashastra. It can be seen, felt and experienced how the life would have been at that time. The traditions of dance and music have been captured and reproduced with the help of artisans through paintings and sculptures. They began to use these fleeting movements and captivating poses in all possible ways allowing them to transform their rigid forms into the forms of flexibility, dynamism and improvisation which broken the monotony on the architectural space. Thus, dance sculptures are the embodiment of form, rhythm, unity, synthesis of structure and harmonized in the architectural space. It has also been observed that how the stones were carved out to produce the melodic sounds through fascinating pillars, stairs, pipes and bells. It can be observed that with the availability of minimum technology, the artisans had created great wonders that were much ahead of time.

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ADAPTIVE LAND USE, AN APPROACH TO CONSERVE BIODIVERSITY, CASE OF NASHIK

Baste Prajakta*
Manolkar Ketaki **

ABSTRACT

Urbanization, has posed a threat to biodiversity. The livability and sustainability of a city is to a notable extent contingent upon the survival of urban nature (Lo, Jim, 2012). Nashik, is a rapidly developing tier II city. A water supply canal of 26 kms, running through the city became redundant after implementation of piped water supply scheme in 1984. A proposal of converting this space into open public facility for physical fitness was executed for a stretch of 1.5 kms along with tree plantation. Three stretches became significant green pockets over a period of 20 years in an urban setting and hence extremely successful as public outdoor spaces. The research is done to map and analyze the three pockets in which plantation of trees has developed in the past 20 years. Mapping is done w.r.t number of trees, the indigenous and non-indigenous species in these stretches. Diversity within the trees in these three stretches and comparative percentage of indigenous versus non-indigenous trees is analyzed. A comparative analysis indicates variation in the diversity which gives the clues for the conclusions and the proposal to be developed.

The research endorses adaptive reuse of land to increase tree cover in an urban setting, as an innovative application for developing and conserving biodiversity in an urban setting. In reference to the current pandemic situation and based on the findings of the study, it is proposed to develop the remaining stretches of this land as urban green area, with appropriate proposals for tree plantation for biodiversity conservation.

Keywords : Adaptive Land use, Trees, Biodiversity conservation, Indigenous

1. Introduction

In India, percentage of million plus cities w.r.t total urban population of the country has increased drastically from 6% in 1901 to 19% in 1951 and further to 33% in 1991 (Maiti, Agrawal, Hum, 2005). Increase in population has adversely affected the green cover in urban India. The challenge of making the cities "sustainable" is especially relevant for a highly populated and rapidly growing economy, such as India's, which is undergoing rapid urbanization.

Sustainable development calls for a convergence of economic development, social equity and environmental protection (Drexhage and Murphy, 2013). One aspect in environmental protection is the conservation of biodiversity in the urban areas. These urban plant communities provide

the resource base and the above- and below-ground habitat structure for the remaining biological community (Faeth, Bang, Saari, 2011).

The objective of the research is to reinforce the adaptive reuse of derelict canal space for developing and maintaining biodiversity within the Nashik city by analysing trees as one vegetation type and to propose guidelines for the development of vegetation in the entire length of canal.

2. Literature review

According to Aabshar U. K. Imam, Uttam Kumar Banerjee government bodies in urban India have focussed more on preservation of existing greenery than on afforestation in urban areas. Keeping with the national forest policy, it is discussed, trees should be planted and maintained along railway lines, canals and streams. They also

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Envisioning India 2050 Concerns Of Urban Environment (Ncei): Social Issues

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ABSTRACT

AIM: To study and understand the issues or problems India is facing in first two decades of 21st Century and their impact on urban environment and development.

METHODOLOGY: We are dreaming to be the World's largest economic power and Envisioning India in 2050. But at the same time there are so many social, political issues which are to be address in time with proper intension and sensitivity. To study the impact of social issues on development and urban environment, we have to study and understand the Social Issues, Causes and reasons of the issues impacting the urban environment. Understanding, comparing and analysing the impact of these issues, Finding out the solutions and precautionary measures to minimise the impact. Formulation of implementation strategies and Govt. Role in policy making.

FINDINGS: It has been seen even in the past that social issues like Uncontrolled rate of population, Poverty, Communal disharmony, Need of basic Infrastructure, lack of education, Unemployment, Corruption, Crime, Globalization, Regionalism, Political intervention, lack of vision always impacts badly on all facades of development. It is also related to Political impact, willpower and stability of Govt. for implementation of strategies.

IMPLICATIONS: For strategic planning and visioning for 2050, we have to plan strategy at all levels. Govt. will be responsible for developing the vision for development, but at the same time we as citizens should also be very sensitive toward the implementation of all the strategies and we should be sensitive enough towards discipline and development, to create a better urban environment for living and working in 2050.

KEYWORDS: Urban, Environment, Issues, Vision, Development.

1.0 INTRODUCTION:

Bharatratna Dr A.P.J. Abdul Kalam, our most distinguished scientist, Ex. President, examined India's strengths and weaknesses to offer a vision of how India can be among the world's first five economic powers in the year 2020 and he developed a Vision for the New Millennium. They cite growth rates and development trends to show that the goal is not an unrealistic one. Past successes, too, bear them out. As per Dr. Kalam, we were able to launch the green revolution at a time when experts had all but given up on India ever becoming self-sufficient in food. Similarly, in the field of space technology we started from scratch to have today a system of satellite-based communication linking remote regions of the country. The same sense of purpose can lead us to success in many other areas crucial to achieving the goal of a prosperous, strong nation.

Dr. Kalam In his book India 2020, strongly advocates an action plan to develop India into a strong nation by the year 2020. He regarded India as a knowledge superpower and developed nation. The book describes the present and future scenario in India and developed countries.

His vision was to convert India into a 'developed nation' by 2020, this being defined as an India that will be one of the five biggest economic powers, self-reliant in energy and food security. This reads too much like a bureaucratic / corporate vision document.

Unfortunately, Year 2020 came with lot of threats, uncertainties and issues which clearly highlighted that, Dr. Kalam's dreams shattered due to so many social and political reasons and

I would like to thank Dr. Ravindra Deshmukh for always motivating and inspiring for research. Thanks all my friends and colleagues who helped me in this research process.

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Changing Housing Trends & Political Influences

[1] VIJAYKUMAR B. PAWAR

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ABSTRACT

It's all about political decisions, agendas, policies which impacted the housing and its overall fabric during last 70 years, which divided country into Bharat and India. It's a clear vertical split in society, their housing and economic zones, like Rural, Rurban, Urban and Metro. Everything changed worldwide during the last 50 years. Housing, which is also not untouched? So many trends originated from social, cultural, economical impacts and majorly influenced by Political policies, vote bank politics or due to election agenda. Decisions taken under political influences ruined rural India, changing its fabric and distributing it in many ways.

It also impacted the character of vernacular architecture in different regions, and changed housing trends bringing in cheap quality, mediocre planning & questionable Material quality and type. Our policies are creating smart cities and also poor villages, slums within city. Gandhiji said, "Go to villages."

But unfortunately, the political agenda of past governments unknowingly promoted rural to urban migration this study focused on,

Changing housing trends in Gaon, Shahar and Mahanagar due to political influences.

It is also resulting into ruined Bharat & uncontrollable Urbanization in India with poor infrastructural support.

Key words: Change, Housing, Impact, Politics, Trends.

1. INTRODUCTION:

Political willpower or decisions always influences various sectors and the overall growth of region. Housing is one of the sectors which always influenced in good and bad ways due to political influences. There are so many examples in history like Nalanda, Fatehpur Skirl, Jaipur, Aurangabad, Chandigarh, Amravati (New). The decisions taken by rulers developed or destroyed the cities and housing. Most of the time the decisions were politically motivated or sometime reasons beyond their control forced them to take such decisions. Due to such political decisions only there is a clear split in Rural and Urban India. All facilities like good roads, hospitals, schools, markets, Industries, employment were focused/concentrated in urban areas, so Population migration was always from Rural to Urban. That migration also impacted these housing trends in all the eras. There are so many factors, which influenced these housing trends but I am focusing only on Housing trends influenced by politically motivated decisions.

2. HOUSING & HOUSING TRENDS

As per Oxford Dictionary, Houses and flats considered collectively. As a housing development'

As per Business dairy - Buildings or structures that individuals and their family may live in that meet certain federal regulations. Different housing situations vary for individuals and may depend on age, family, and geographic location.

4. RESULTS

4.1. Gaon: After Independence during last 70 years the focus of government slowly shifted from agriculture to Industrialization and now towards IT sectors. All the public amenities, good infrastructure, Quality Education, Healthcare facilities are concentrated in Urban areas, in cities. Most important need of Agriculture sector was Electricity, Water and quality seeds/ fertilizers. But even after 70 years Govt. could not satisfy them with sufficient water and electricity and value to agri products. So young population shifted to Towns, cities, urban areas for education and then for employments. These people never turned back to rural area of their roots. For infrastructure, good healthcare facilities also this rural population is still depend on urban areas. Water for agriculture and drinking water scarcity and continuous droughts totally spoiled the Agriculture sector and rural housing. Farmers lost their confidence in farming and the count of suicides is still increasing. Government is giving grants of 12000/- for toilets but due to scarcity of water such schemes are not getting success and we are missing priorities.

4.2. Shahar: Governments all schemes, All Educational, Healthcare institutes are located in cities/ Urban areas, Industrial sector is also located near urban areas. So there is a major migration from rural to urban areas during last 3-4 decades. These poor unemployed people cannot afford proper housing in Cities. So they start developing illegal slums and living in them with favor of local corporators, gundas and officials. This is spoiling the overall cityscape and increasing load on city infrastructure. Day by day this type of illegal developments and schemes like Gunthewari and political supports to such schemes majorly affecting the living conditions in Shahar/ cities as well.

4.3. Mahanagar: Mahanagars like Mumbai, Delhi, and Kolkata are the most affected cities due to the major shift of population or migration from all over the rural and poor areas, states in search of employment. This phenomenon gave rise to illegal slum developments and underworld crime. Even after the declaration and execution of SRA Schemes. These people are giving their houses on rent and they are shifting to slum areas with the confidence that may be due to Govt. decisions or election plans they may get more free houses in Mumbai.

5. CONCLUSIONS:

Considering all these case studies and the overall migration scenarios supported by Political leaders or strategies just for short term political gain, they are doing a major crime as far as Developments in Rural and urban areas are concern. Agriculture sector and traditional rural housing is getting destroyed due to lack of vision and support by government, natural calamities and unplanned developments with poor long term vision and planning. So it is the fact that, you cannot think of development only in Urban areas and neglecting rural areas. It is going to impact your proposals and plans. So Smart cities will be possible hand in hand with smart villages and with less political interference for short term vote bank politics but Long term vision can only develop Bharat and India together.

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REGIONALISM IN ARCHITECTURE & GLOBALIZATION

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ABSTRACT

When we talk about architecture it is not only about buildings. But it's about the culture, economy, natural & man-made resources, people and it's about the geographical location- Region.

So when we study architecture of various regions at least 100 years before, we can easily understand and observe the impact of regional characters and specialties on architecture like Greek, Roman, Egyptian landmark buildings.

During 1980- 90's 23 developed countries like America, Britain, and Australia took lead for GATT agreement / WTO and almost forced developing countries to accept the same.

They got a huge business market and we got a choice for variety of brands.

That's why in 1980's cars and bikes like Ambassador, Fiat, Rajdoot and Jawa were traditional brands on Indian roads but today we have brands like BMW, Mercedes and other upscale cars, bikes sharing our roads.

Is it the only side of globalization? Answer is No.

It impacted each & every corner of our life and fields including Architecture.

The focus of this study is to explore the impact of such globalization on Indian architecture, killed the regional touch/ character of architecture in our country and also worldwide.

Keywords: Architecture, Characters, Globalization, Impact, Regionalism.

1. INTRODUCTION: REGIONALISM & GLOBALISATION

An approach to architecture that strives to counter the specific location or region and which has no fascination for International styles called as regionalism in Architecture. This type of architecture also rejects individualism and ornamentation of Post modern Architecture. It is a progressive approach to design that seeks to mediate between the global and the local languages of architecture.



Fig 1: Coliseum at Roma Italy



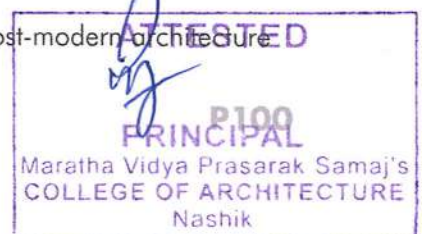
Fig 2: &FS BKC Mumbai

Vernacular Architecture, which is also called as Architecture without Architects.

It refers to the buildings made by local tradesmen; regional architecture closely follows the developments of vernacular Architecture, but incorporates modern building materials and technologies. The Climate is very important element, which plays a very important role in regionalism.

Regionalism when leads to Critical regionalism, it hold that, both modern and post-modern architecture are "deeply problematic".

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leave an identity to the form and function of the building. The term of rationality and regionalism is still needs to be studied more deeply. About this issue has been much discussed and written. But when considered in depth there is still an understanding between the works unfinished. Therefore, look for the essence and nature of the regionality, and regionalism is still necessary

The aim of this study was to find essence of regionalism and regionality more fundamentally, because by understanding the essence of knowledge about the regionalism and regionality will become more apparent, especially for basic architectural design.

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Culturally Responsive Urban Development

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Abstract

The settlement pattern in Chanderi is a response to centuries of traditional wisdom. The settlement has emerged from its work-live-play lifestyle woven around its handloom craft. These traditional settlements are rapidly being modified or abandoned under the pressure of modernisation and development. This has affected the live-work balance and socio-cultural behavioural pattern of the town. Lately, development and urbanisation has spread its influence on tier 3 towns, Chanderi being one of them. Though this growth is necessary, it has to consider the local culture and tradition which gives these towns its identity. This paper seeks to highlight the link between urban development and the cultural ethos in small heritage and craft based towns which when maintained will ensure that development and culture go hand in hand.

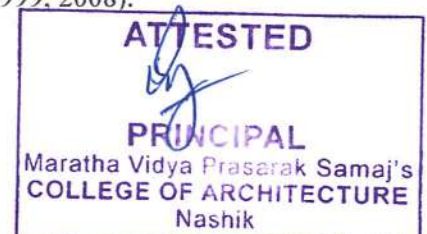
Keywords: handloom town, urban development, cultural ethos

Introduction

India is one of the oldest civilizations in the world with kaleidoscopic variety and rich cultural heritage. Architecture is not created in a vacuum. It is a compulsive expression of beliefs (explicit or implicit) central to our lives. When we look in to the architectural heritage of India, we find an incredibly rich reservoir of mythic images and beliefs which all coexist in an easy and natural pluralism. It is rich in the architectural content of its settlements replete with vernacular architecture and its immense treasure of architectural wisdom. Centuries of contemplation and synthesis have gone into traditional architecture to maintain its environmental coherence. The surrounding and the built form are both attuned to each other. The diversity seen in India is regional, climatic, and cultural. It is seen more in the rural areas than in the urban context. Urban cities show standardization in many aspects whereas the rural areas carry forth with age old traditions in place.

Background Study

Traditional settlements are a way of organising space from the scale of the house to the scale of the village and the town, using models and practices which are a legacy of the past. This means transmitting the same meanings or knowledge from one generation to the next through building or planning practices. According to Leach's (2005) theory, in a traditional settlement, traditions help to create, define, and defend territorial boundaries and this limit is applied to geographical areas to include both land and seascapes on which the people rely for their livelihood and ways of living (Lim, 2008, p. 58). A literature on the relationship between culture and development demonstrates a view that efforts to integrate cultural dimensions and development produce more sustainable ways of living for communities (Oliver 1997, 1989, 2006; Eder 1987; Lim 1999, 2008).



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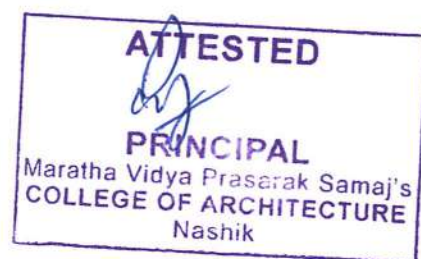
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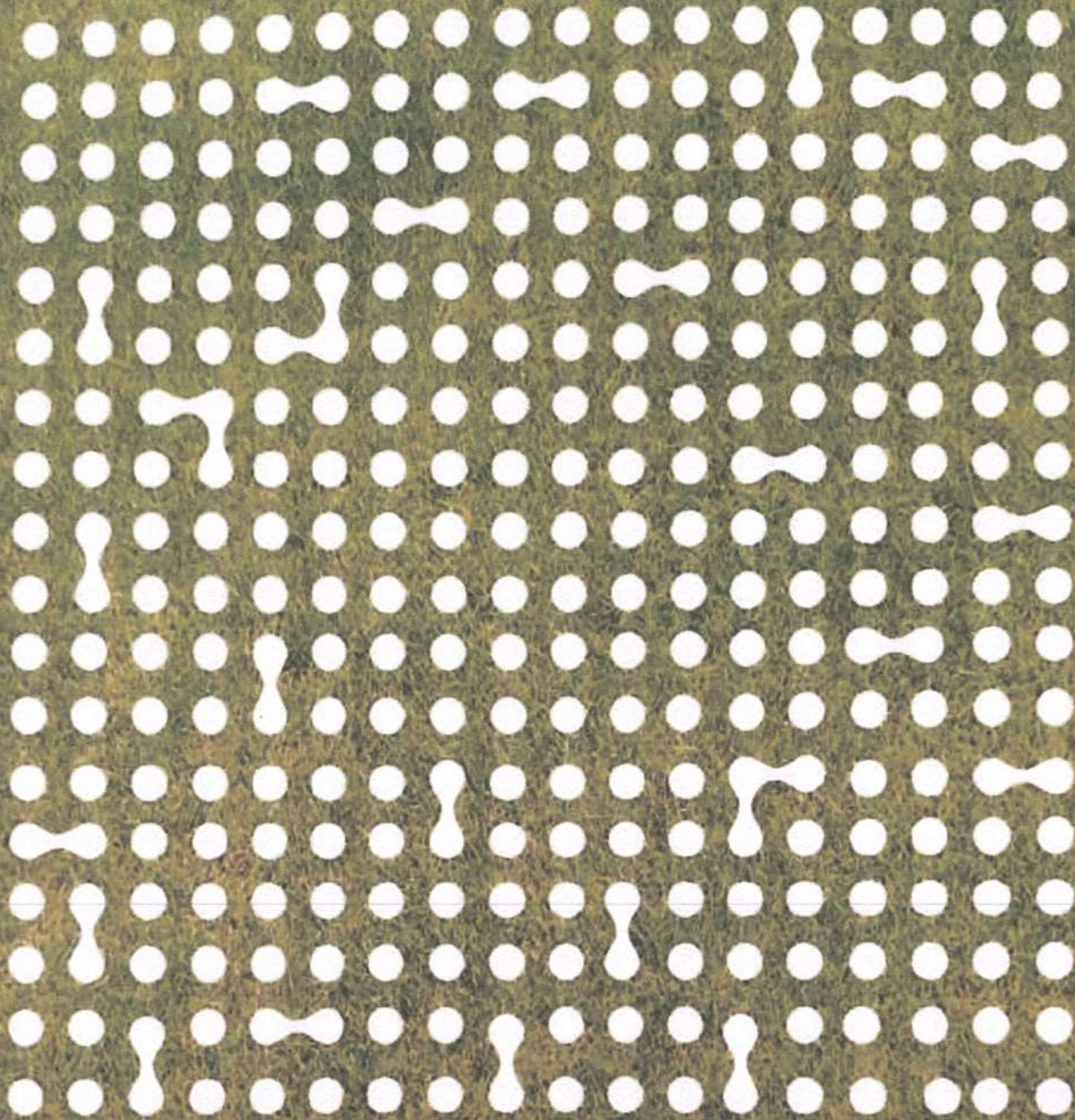
Glossary

Ander Shaher – Oldest settlement of Chanderi, within fortification walls

Bahar Shehar – Later additions to old settlements of Chanderi outside fortification walls

Otta – Extended plinth outside the house, generally used for seating outdoors





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SUSTAINABILITY AND LIVABILITY OF CITIES IN DEVELOPING NATIONS PERFORMANCE OF BUILDINGS CONSERVATION & DOCUMENTATION OF BUILT HERITAGE DESIGN FOR SOCIAL INNOVATION GREEN PLATFORM PROCESS & POLICIES

**METAGREEN
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Proceedings of

**2nd International Conference on
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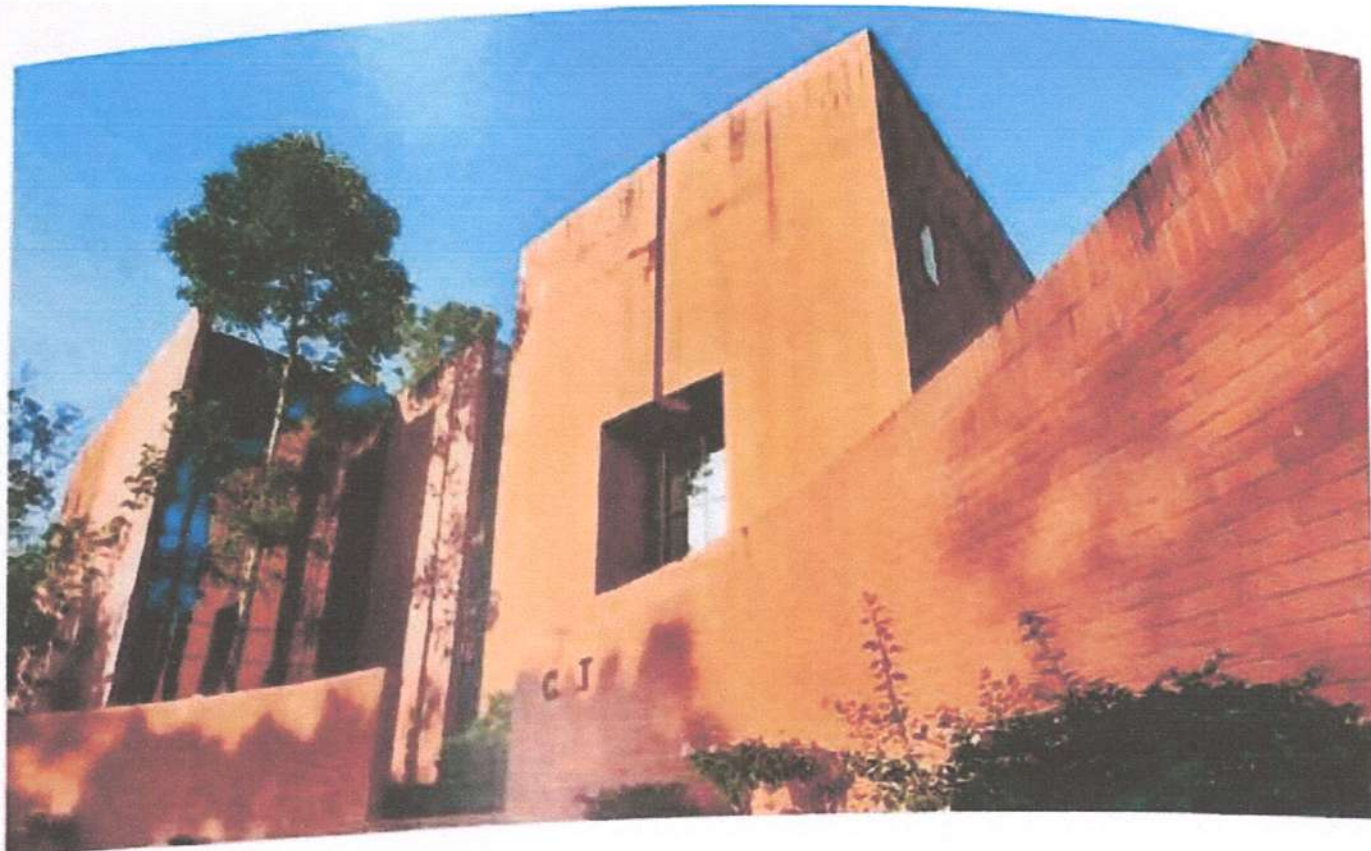
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Community Participation in Heritage Management at Chandori

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^{1,2}NDMVP Samaj's College of Architecture, Nashik

ABSTRACT: Chandori is a small village along the banks of the river Godavari, about 25 km away from Nashik in Maharashtra. Due to severe drought in Maharashtra several Hindu temples and the built ghats (i.e. the steps leading down to the river) had resurfaced from the river bed in April 2016. The temples and ghats submerged when the course of the river was changed due to the construction of a dam during the British era. The last time these Hindu temples were seen was in 1982 when Nashik had witnessed a drought of similar proportions. The symbiotic relation between the ghats and temples found elsewhere in India is found reflected here on a small scale. The ghats and temples which resurfaced are of the Hemadpanthi style and date back to the Peshwa era. The villagers have taken the initiative to get these temples documented. The community is actively forming a management plan which will benefit the economy of the village and increase the livelihood of the villagers. The paper aims to examine the management plan of the villagers which intends to keep the lost heritage of the submerged temples alive, the focus being the temples. Parallel case studies will be investigated to check the validity of the management plan. This research will help the heritage plan to adhere to the principles of sustainability and embrace the principles of ecotourism by limiting the visitor movement and safeguarding the ecology of the area and the river ecosystem.

KEYWORDS: Community participation, lost heritage, sustainability, management plan.

1. INTRODUCTION

Defined in the UNESCO 2001 Convention on the Protection of the Underwater Cultural Heritage, 'underwater cultural heritage' encompasses all traces of human existence that lie or once lay under water for at least 100 years and have a cultural or historical character. This includes ancient shipwrecks, submerged temples and cities, sunken heritage in Cenotes, wells and lakes as well as fish traps and others sites.

Underwater cultural heritage holds vast potential for scientific research and education. Submerged prehistoric sites are of crucial importance for understanding the development of human civilisation. In addition to its scientific significance, underwater cultural heritage also opens up numerous opportunities for recreation, cultural enrichment and sustainable development. It is an interesting and attractive form of heritage, highly appreciated by the public due to the stories it symbolises and due to the air of mystery which surrounds its underwater location.

2. METHODOLOGY

This paper seeks to understand the importance of underwater heritage and ensure ways of keeping it alive in the minds of people in a sustainable manner. This objective is met by understanding the area through primary field studies and observation. Ethnographic approach reveals the links between the

lost heritage and the community. It discusses in detail the management plan drawn up by the residents of Chandori. The management plan proposes to develop infrastructure and create economic opportunities for the residents while focussing on the green initiatives. Secondary data collection is done through research papers and comparison of management plan with Haithabu case study which helps to analyse the strengths and weaknesses of the Chandori heritage management plan. SWOT analysis will help make amendments to the plan if any and draw appropriate conclusions.

3. CASE UNDER STUDY

The temples of Chandori are a very good example of underwater cultural heritage. Chandori is a small village along the banks of the river Godavari, about 25 km away from Nashik in Maharashtra. The river Godavari makes a moon crescent like shape as it winds its way towards Nandurmadhmeshwar, hence the village is named Chandori. (see Figureure. 1) Due to severe drought in Maharashtra several Hindu temples and the built ghats (i.e. the steps leading down to the river) had resurfaced from the river bed in Chandori on April 2016. The temples and ghats got submerged (see Figure. 3) when the course of the river was changed due to the construction of a dam during the British era (1906). These shrines used to be

Table 4. PHASING PROPOSAL for the management plan.
(Source: Author)

	Stage 1 (0-1 year)	Stage 2 (1-2 year)	Stage 3 (2-3 year)	Stage 4 (3-5 year)
Infrastructure development				
Riverfront development	✓	✓	✓	✓
Water cleaning	✓	✓		
Interpretation centre + Museum			✓	✓
Toilet facilities	✓	✓		
Boating activity	✓	✓		
Rowing club	✓	✓	✓	
Economic benefits to community				
Food courts	✓	✓		
Agro tourism		✓	✓	
Home stays			✓	✓
Capacity building	✓	✓	✓	
Annual River festival	✓	✓	✓	✓
Green Initiatives				
Solar panels	✓	✓		
Root zone treatment			✓	✓
Compost bins		✓	✓	

ruins. Diving is not possible at the Chandori site being discussed here owing to its location in shallow water of river as compared to deep sea locations suitable for diving. Relocating the temples or even replicating them at the river bank involves a lot more detailed investigation in terms of financial feasibility, its socio-cultural impact and available craftsmanship. Viewing

the temples tops and the precinct through boating is proposed and it is expected that the waters are maintained as clear as possible to allow vision of the ruins below water as well. Although this might not be as effective as other ocean sites due to shallow muddy waters the river brings along from a nearby dam.

The review of the case of Haithabu in Germany revealed some important aspects about practicality and execution of the management plan. It gave important criteria to analyse the management plan for

Chandori proposed by the villagers. The SWOT analysis of the plan raised key concerns of the proposals as against its ambitious goals. This led to bifurcating the proposals into smaller tasks and put them into doable scale of short term and long term objectives to fulfil the ambitious plan in an organised manner. Such bifurcation further helped in identifying responsible player in executing the tasks and possible financial arrangement. This analysis concluded to formulate a systematic phasing proposal for the proposed management plan to successfully achieve the desired target.

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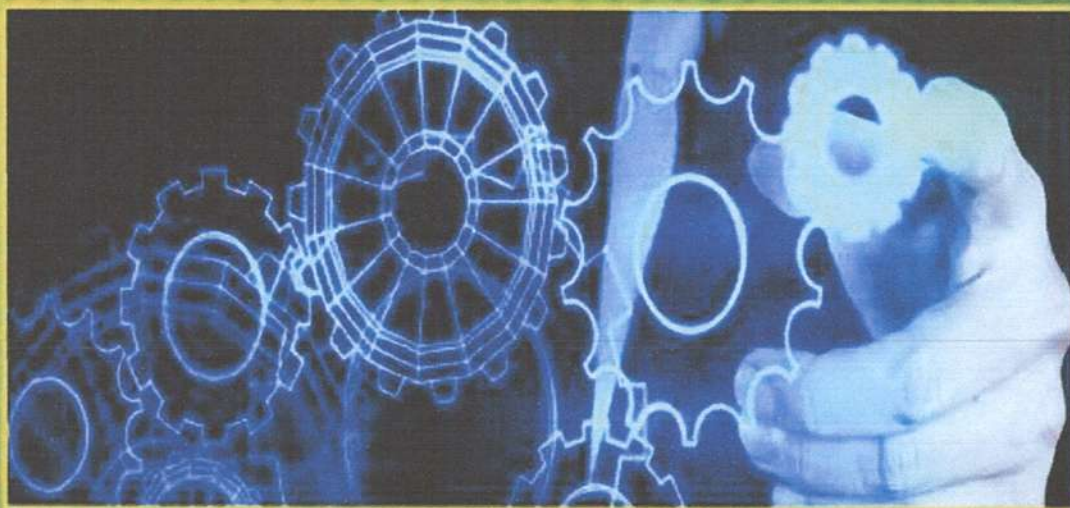
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Life Cycle Analysis of a curtain wall glass assembly using high performance glazing and aluminium support system

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N.D.M.V.P.S.'s College of Architecture & Center for Design, Pune University, India.

ABSTRACT

Curtain walls with glass infill are being extensively preferred for their aesthetic properties by the designers for contemporary building envelopes in India. However it becomes necessary to consider the environmental impacts of curtain wall envelopes throughout their life cycle when it comes to the selection of various types of glazing panel infills and framing materials since green buildings have become a prime necessity of time to combat global environmental challenges like climate change. The study consists of life cycle analysis of curtain wall assembly with glass panels and aluminum support system. Different glazing assemblies for high performance have been compared and analyzed for their performance based on the parameters like Solar Heat Gain Co-efficient.(SHGC), Shading Co-efficient (SC), Energy Absorption (EA), Energy Reflectance (ER), Direct Energy Transmission.(DET), U – value, Relative heat gain, Visible Light Transmittance (VLT) and thermal performance. The paper also discusses life cycle analysis of parts of curtain wall assembly viz. glass infill, aluminium frame and sealant, the discussion parameters being environmental impacts during raw material extraction and manufacturing, embodied energy, performance and maintenance, possibility of recycling and reuse, energy conservation, waste generation and other human, environmental impacts.

Keywords : curtain wall, environmental impacts, high performance glazing, , life cycle analysis , thermal performance.

1.INTRODUCTION

There is a rapid transformation in the envelop materials used for the buildings in India from conventional bricks, stones and concrete to contemporary glazing. Curtain wall assemblies with glazing panels are extensively preferred by architects due to their aesthetic properties and the visual connection it offers between the interiors and the exteriors. However every material used for the building construction has certain environmental impacts throughout its life cycle, from raw material extraction, processing, performance up to their disposal. Buildings account for 40% of material extraction. [1]. Hence it becomes necessary to consider these environmental impacts so as to reduce them by consciously choosing the materials in the designing of building envelopes. There has been an intense research and advancement in the glazing technologies that offers an array of high performance glass infill in curtain walls. In this paper life cycle analysis of curtain wall assembly with glass panels and aluminum support system has been studied.

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Review on “Evaluation of Strength of Fibre Reinforced Concrete Using Plastic Fibres”

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Abstract— Now-a-days, environmental problem is faced all over the world. The things which are invented and used for our luxurious life are responsible for environmental pollution. Due to improper waste management, we are facing land pollution. Land pollution is mainly due to waste plastic. This plastic can be reused or recycled to maintain the beauty of nature. To address this issue, in this paper, the waste plastic is used to make fibres. This paper describes the review of literature. The study is conducted to determine the effect of use of waste plastic as a construction material. The conclusion is based on the literature in terms of relationships between the standard concrete and Fibre reinforced concrete and future scope is discussed from the conclusion made on the literature.

Keywords - Plastic fibres, Fibre reinforced concrete, Literature, Compressive strength

I. INTRODUCTION

The most widely used construction material is concrete. The performance of concrete after construction depends on its ingredients. It is well known that plain concrete is brittle but strong in compression. But at the same time, it is weak in tension. The fiber reinforcement concrete transform a brittle concrete into a pseudo ductile material and very advantageous to concrete. Fibres addition in concrete can arrest micro cracks causing gradual failure. The fibers made of waste materials like plastic, glass etc., is used for manufacture a wide range of structural units with cement mortar composites and has a great potential for developing countries like India. Mechanical properties of concrete has been studied by many researchers to enhance the properties of concrete using different fibers like glass, steel, carbon, synthetic organic and natural fibers. The present paper studies the effect of addition of various percentage of plastic fibers on mechanical property by studying various literature based on previous researches.

Combinely, the fibre-reinforced polymer (FRP) composite is a

- A polymer (plastic) matrix (either a thermoplastic or thermoset resin such as polyester, vinyl ester, epoxy).

- A reinforcing agent such as glass, carbon, aramid or other reinforcing material

The resin is used to coheres and gives shape to the element while fibres reinforce it. Tis combination results in light weight and strong composite material. The FRP composites have high strength to weight ratio which provides discernible reinforcing function.

Problem Statement

Plastic has a variety of applications in almost all fields. But the drawback of plastic is its waste management. The main reason of land pollution is waste plastic. Hence, it is necessary to do waste plastic management. Construction industry is a vast stream, where management of waste plastic can be done easily by using it as a construction material in concrete. Also it will reduce the burden on environment and construction cost. Hence, in this project the efforts are made to replace the aggregates by plastic fibres as a reinforcing material to enhance the characteristics of concrete.

II. REVIEW OF LITERATURE

S. Mindess; 2007, [1] In this paper, a study has been carried out for 30 years on Fibre reinforced concrete (FRC) at the University of British Columbia. In this paper, three of the major areas of research i.e., characterizing effect of fibres on toughness of concrete in a better way, FRC properties under impact loading; and making use hybrid fibre systems. This paper concludes with possible future developments of FRC technology. It is concluded that it is impossible to carry out experimental study, finding out optimum content of fibre and using FRC consistently. It is necessary to know all the characteristics of material in FRC for better use of fibres. Overall behavior of concrete depends upon fibre as well as on the materials used in it.

Zainab Z. Ismail et al; 2008 [2] In this study writer has conducted 86 experiments and 254 tests to determine the efficiency of reusing waste plastic in concrete.

It acts as a reinforcing material in concrete which reduces the formation of cracks in concrete by means of plastic fibres.

IV. FUTURE SCOPE OF WORK

Based on the previous discussions, the objective of the present study is to introduce plastic fibre as an aggregate in conventional concrete and to determine the compressive strength of conventional and fibre reinforced concrete. The comparison can be done between the conventional and fibre reinforced concrete based on compressive strength and construction cost. Also it is necessary to determine the optimum percentage of plastic fibre as a percentage replacement of natural and artificial sand.

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Evaluation of Strength of Fibre Reinforced Concrete Using Plastic Fibres

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Abstract— Now-a-days, environmental problem is faced all over the world. The things which are invented and used for our luxurious life are responsible for environmental pollution. Due to improper waste management, we facing land pollution. Land pollution is mainly due to waste plastic. This plastic can be reused or recycled to maintain the beauty of nature. To address this issue, in this paper, the waste plastic is used to make fibres. These plastic fibres were added in various percentages in the M25 grade concrete. This paper describes the performance of plastic fiber reinforced concrete (M25). The experiments were carried out on the specimens like cubes and cylinders which were casted in the laboratory and their behavior under the test was observed. The plastic fibers were added from 0.0 % to 0.8 %. The compressive strengths of concrete were determined after 7, 14 28 and 56 days of curing period. The test results were compared and the relationships between the standard concrete and Fibre reinforced concrete are presented.

Keywords —Cement Concrete Composites, Plastic Fibers, Fibre Reinforced Concrete, And Compressive Strength.

I. INTRODUCTION

The most widely used construction material is concrete. The performance of concrete after construction depends on its ingredients. It is well known that plain concrete is brittle but strong in compression. But at the same time, it is weak in tension. The fiber reinforcement concrete transform a brittle concrete into a pseudo ductile material and very advantageous to concrete. Fibres addition in concrete can arrest micro cracks causing gradual failure. The fibers made from cheap or waste materials like plastic, glass etc., may be used for manufacture a wide range of structural units with cement mortar composites and has a great potential for developing countries like India. Mechanical properties of concrete has been studied by many researchers to enhance the properties of concrete using different fibers like glass, steel, carbon,

synthetic organic and natural fibers. The present paper studies the effect of addition of various percentage of plastic fibers on mechanical property and behavior of concrete. Effect of plastic fibers in concrete under compression strength are discussed.

The fibre-reinforced polymer (FRP) composite is a combination of:

- A polymer (plastic) matrix (either a thermoplastic or thermoset resin such as polyester, vinyl ester, epoxy).
- A reinforcing agent such as glass, carbon, aramid or other reinforcing material.

The resin is used to coheres and gives shape to the element while fibres reinforce it. This combination results in light weight and strong composite material. The FRP composites have high strength to weight ratio which provides discernible reinforcing function.

II. MATERIALS

Two types of materials are used in FRP:

- A polymer (plastic) matrix and
- Fibre.

A. Resins Used In Frp

Some of the most important material characteristics to consider in selecting a matrix for structural FRP are: stiffness, strength, thermal and electrical conductivity, ability to impregnate and bond to fibres.



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Narayan C. Ghosh

Anupma Sharma

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Groundwater Governance for cities in Maharashtra

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Abstract

Urbanisation is rapidly taking place in India. According to the World Bank Report 60% of Population of India will living in the Urban Areas i.e cities or towns by 2030. According to the 2011 Census, the urban population grew to 377 million showing a growth rate of 2.76% per annum during 2001-2011. The level of urbanisation in the country as a whole increased from 27.7% in 2001 to 31.1% in 2011. The urban transition is considered one of the major challenges, requiring a massive expansion in urban infrastructure and services and creating a pressure on the Natural Resources.

According to the research and the surveys conducted by various sources it is observed that today the urban settlements are dependent on Groundwater for 30% - 35% of its total usage. The reasons for the same are many. And this usage is projected to increase to 50 % in the coming years.

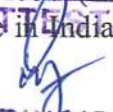
Groundwater in Urban Areas is a matter of concern today and will be a serious one in the future. In Maharashtra there are 44 first tier cities and 33 second tier cities according to the 2011 Census. These towns and cities are expanding and developing exerting pressure on the groundwater. The groundwater development is largely happening in the private individual arena without effective control of any authorities. Thus Governing the Groundwater has become a growing challenge in large part of the urban areas where the water table is sinking steadily and silently. Added to this pressure is the climatic variability which influences the Groundwater in the cities. The relationship between the changing climate variables, increasing urbanisation and groundwater is different from the rural context and is a complex one. Understanding the Groundwater performance has just been probed in a handful of metropolitan cities, but not in institutionalised manner.

The research presents the objective by doing case studies of selected 2nd and 3rd tier cities in Maharashtra w.r.t the Groundwater performance. A detail research w.r.t the population growth, usage in the last five years, the governing authorities for Groundwater and the laws/rules for the usage is conducted in selected cities at varied locations spread over the state. The Groundwater Act was published on 3rd December 2009 and Maharashtra Water Resources Regulatory Authority is constituted for the development and management of groundwater. The role and function of this authority along with the other important authority i.e the GSDA are understood. Following are the observations and conclusions drawn. There is lack of knowledge amongst the users of this invisible and invaluable source of water. Basic awareness to manage this source of water is poor. There is absence of scientific approach, technical support and financial assistance, lack of administrative backup for the Development and Management. Limited Human resource to work for the same is also a major hurdle at all levels i.e from the urban local body level, at the city level to the District level or the state level and with the Groundwater survey and development office. Considering the importance and negligence towards this source of water it is necessary to reform Groundwater regulation for the Urban Areas. This reformation, must be coupled and tied with improved Institutional arrangements at the State level, District level and the Local Authority level and should be strengthened with capacity for implementation and enforcement.

Keywords: Cities, Groundwater Act, Reformation, Urbanisation.

1. Urbanisation in India

The challenge of sustainable cities w.r.t groundwater is especially relevant for a highly populated and rapidly growing economy, such as India's, which is undergoing rapid urbanization. Number of towns has increased from 1916 in 1901 to 2422 in 1951 and then to 4689 in 1991. Percentage of million plus cities w.r.t total urban population of India has also increased drastically from 6% in 1901 to 19% in 1951 and further to 33% in 1991 (Maiti, Agrawal, Hum, 2005). According to the findings of Mckinsey Global Institute in India, by

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Sustainable Development Imperatives for new Towns in Hilly Areas: A Case of India

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1.0 ABSTRACT

Hilly areas are very sensitive to human induced landscape change. For that reason, the development in such areas has to be viewed as an interaction of the anthropogenic activities with natural environment. The development therefore, should take a sustainable approach, considering the protection of natural environment and resources as the important priorities. The detrimental effects of development may lead to degradation of the environment and thereby may impact biodiversity many a times leading to loss in sustaining the tourism and employability in such areas. Hence, it is important to consider physical environmental factors while planning and design development in such areas. The present study highlights the critical issues related to site development in hilly areas with respect to topography and natural drainage in the study area. It also delineates the important areas for the natural drainage and riparian buffer that need to be preserved and conserved for the healthy environment. The study also derives possibility of alternative plot shapes and their orientation with respect to the land modulation it may cause for any building activity. Lastly, the study also stresses on the use of native vegetation for better ecological functionality relevant to the area.

2.0 INTRODUCTION

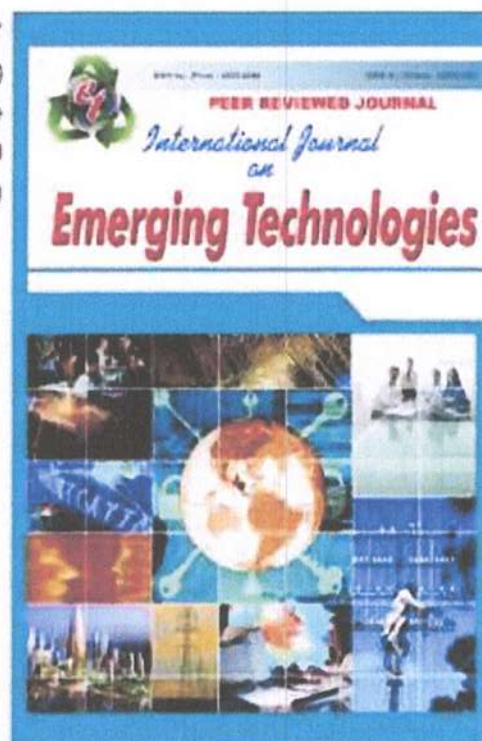
Hilly areas are houses of biological diversity, habitat to endangered species and an essential part of the ecosystem. The hilly areas can also, when exposed to unplanned and uncontrolled development will directly/indirectly have an effect on the environmental resources of the region. Besides, tourism today, is one of the world's important sectors for economic exchanges and employment in many hill areas. However, with the rising tourism industry it is important to give due consideration to the interrelationship of the environmental resources and anthropogenic interventions to accommodate tourism activity (UNWTO, 2017). The serene and scenic quality of the natural environment and the abundance of natural resources are of great value to any hill town; as all of them sustain the tourism activity of that place. The excessive pressure of tourism development can lead to degradation of environmental quality and resources of the hilly areas, which in turn may have an impact on the tourism activity, economy and employment of that place (Kumar & Pushplata, 2012). Thus, the unchecked development in these sensitive places may cause an irreversible damage to the resources on which the tourism is based. Indian hill towns are the peculiar examples of massive urban development in environmentally or ecologically sensitive, which are growing exponentially over and above of their natural carrying capacities (Kumar & Pushplata, 2012). Thereby, it becomes increasingly important to have a sustainable spatial planning and design approach in hilly areas (Programme Evaluation Organisation, Planning Commission, 2010) (Tyrvaäinen et al., 2014). An integrated approach in development can lead to better environmental conditions and improved anthropogenic intervention. This may facilitate to apportion resources for further betterment of the living conditions in sync with the natural environment (Latkar). Since the 1970's there has been a growing awareness of the need to deliberate the environmental values to the development of a hilly area. Ian McHarg (1995) (Steiner F., 2000) and others have brought into focus the growing philosophy of ecological processes; which offer the vital basis for planning and design (Steiner F., 2000) (Belsky, A. J.; Brown, R. T. et al., 1995). Though, this vision has been accepted by many, its potential and applicability still remains unexplored at local levels.

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To Find out the Feasibility of Ethylene-Tetra-Fluoro-Ethylene (ETFE) in Inflatable Pillow System (IPS) to be Used for Building Facades

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ABSTRACT: The increasing energy demand, there have been many research done related with the conservation of energy used in buildings. The systems and materials used in buildings have an important role in consumption of energy. It is been always expected from the building envelope much more than just a skin, building envelope can help to get more efficient environments in terms of quality and energy. Building envelope, which separates indoor and outdoor, altered in the parallel of development on new material and technology. In recent years the technology of producing flexible ETFE films has progressed significantly allowing the production of thin membranes that are stable, durable and can be easily joined. This has given designers a serious alternative to glass for many applications.

This study aims to study construction system; ETFE foil pillow system, which is also known as, Inflatable Pillow System made of ETFE Foil. In the scope of the study, pneumatic pillow system investigated in detail and its performance evaluated on Environmental aspect, Technical aspects, Thermal Behavior (Ecotect analysis), Acoustic performance, Safety, Cleaning, Maintenance etc., which can be compared with other conventional Doubly Glazing Unit (DGU). The results are evaluated with the information gained. The advantages and disadvantages of the system as a glazing are discussed.

Keywords: Inflatable Pillow System, Conservation of energy, Pneumatic membrane, Glazing, ETFE foil, Glass, Doubly Glazed Unit (DGU), Building envelope.

I. INTRODUCTION

New discoveries in polymers, changing trends and rising demand in aesthetics of the building has forced designers to explore new materials. Building envelope, which separates indoor and outdoor, altered in the parallel of development on new material and technology. It is been always expected from the building envelope much more than just a skin, building envelope can help to get more efficient environments in terms of quality and energy. The present study aims to determine Inflatable Pillow System (IPS), which is a new generation construction technique as a building envelope for Pune, Maharashtra, India.

1. WHY ETFE?

Thermoplastic polymers other than ETFE, such as polycarbonates including poly ethyl methacrylate (Plexiglas) and polystyrene or fluorocarbons including polytetrafluoroethylene (PTFE) and polyethylene (PE) have been examined and found unsuitable as a replacement to glazing. (Callister *et al.*, 2011); (Minamisawa *et al.*, 2007) Such alternatives have been rejected as they fail to offer a combination of good

visual performance, energy transmittance and as an adequate engineering material performance (Baille *et al.*, 2006; Callister *et al.*, 2011). ETFE (Ethylene Tetrafluoroethylene) and PTFE (Poly Tetrafluoroethylene) are most common textile materials are used in building construction industry. While ETFE is predominantly applied as Inflated Pillow System (IPS), PTFE is normally used as building shading structure. (Stokes-1998, Robinson *et al.*-2001, G James - 2009, Macleod-2010)

Understanding ETFE : ETFE is a thermoplastic copolymer derived from the polymerization of the Ethylene and Tetrafluoroethylene monomers. ETFE can be extruded into large thin sheets, referred to as foils or films. Films are produced in thickness from 0.05mm to 0.3mm. Naturally ETFE films produced clear but can be modified to opaque.

Understanding IPS (Inflatable Pillow System): Inflatable Pillow System is (IPS) is designed for efficient use of ETFE as covering material. The system also can be used for other polymer materials similar to ETFE.



CPUD '17

**II. INTERNATIONAL CITY PLANNING
AND URBAN DESIGN**



MAINTAINING UNIQUENESS IN GLOBALISATION: EXPLORING PROGRESSIVE APPROACH TOWARDS URBAN CONSERVATION OPPORTUNITIES IN SMART CITIES MOVEMENT: CASES OF CITIES IN INDIA

PURVA HARISH SHAH

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ABSTRACT

The quest for smart cities and global environments is at enormous scale, especially in developing countries. Such opportunities are perceived as economic growth catalysts. The inevitable change that globalisation brings, is transforming cities across the world affecting its local identity. India is among the leading countries to have huge number of such rapidly urbanising cities undergoing transformation leading to monotonous modernisation.

The concern for the potential loss of unique local environments while emerging into smart global cities provided an impetus for this research. However, one has to accept this change and intermixing as it brings economic growth and depicts modernity. Therefore, emerges a need to realise ways in which the unique character of the city could be maintained and enhanced while we embrace modern values and the global – local conflict.

Historic core areas of Indian cities are integral part Indian urban landscape. They own a diverse built and cultural heritage that give them a strong sense of identity. The smart city missions raised a need to revisit old cities from a developmental perspective. The research intends to figure out ways to reinforce the original image of the city with smart city aspirations that is coherent to its historic core. The study assesses urban components that can continue to maintain the unique image of the city giving it a sense of belonging in this changing context. The research explores alternative ways in which the local identities can be strengthened that do not restrict growth and is devoid of conventional conservation practices.

For the purpose, three cases of cities in India namely Nasik, Pune and Srinagar have been investigated. Research methodology involved comparison of on-site data collection and archival records along with public interviews and mental mapping to derive components of uniqueness. Parallel case studies across the world have been analysed to re-affirm the results of the research. The study found out that natural morphological components prove significant and critical care is required while planning to avoid fragmented development. This is where natural features can be fused to link into a coherent development. In addition, historic urban structure – a result of natural morphology is a factor responsible for identity needs attention, while it can allow the desired flexibility.

Keywords: Local Identity, Urban Conservation, Sense of Place, Smart city, Globalisation, historic core areas

Introduction

Urban Design and Uniqueness of a Place

The various and most influential literature on urban design and its qualities have exemplified the importance of uniqueness or distinctiveness of an urban environment. The variety of urban design principles advocated by most of the authors in the field support the concept of uniqueness.

Kevin Lynch 1981

sense

Bentley et al 1984

Visual appropriateness

Holyoak 1985

Retain the Best

Buchanan 1988

Dialogue with context and history

Tibbalds 1998

Respect history

HRH the prince of Wales 1989

Harmony and context

Aldous 1992

Sense of place and historical continuity/harmony/distinctive

character and identity



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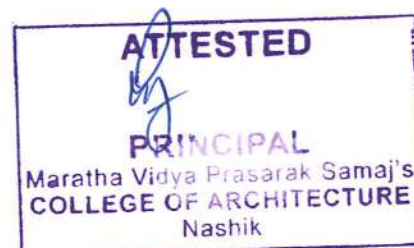
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3.2.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years.							
Sr. No.	Title of the book/chapters published	Title of the paper	Author	Department	Name of the publisher	Year of publication	Web-link of research paper
1	NCSAPT 2020 - National Conference on Sustainability in Architecture, Planning and Technology	Effect of tall building cluster on Environmental Quality within and in adjacent areas	Prof. Ankita Pathare	Architecture	International Journal of Scientific Research in Engineering and Management (IJSREM)	2020-21	https://www.ijsre.org/onlineResearchPaperViewer.aspx?Effect-of-tall-building-cluster-on-Environmental-Quality-within-and-in-adjacent-areas.pdf
2	National Conference on Empirical Theories in Architecture, Planning & Construction Management	A review of conventional rigid & flexible paving materials for sustainable urban road construction at Nashik, Maharashtra, India	Prof. Radhika Bhattad	Architecture	MCE Society's Allana College of Architecture, Pune	2020-21	http://www.allanaarchitecture.org/wp-content/uploads/2021/11/NCET-2020-ProceedingsBook-eBook-PUBLICATION-17.12.2020-15mb-2-compressed.pdf
3	International Journal of Scientific Research in Engineering and Management	Dance and music in Indian temple architecture	Prof. Vinit Bobade	Architecture	International Journal of Scientific Research in Engineering and Management (IJSREM)	2020-21	https://ijsrem.com/volume-04-issue-10-october-2020/
4	SHODH SARITA, An international bilingual peer reviewed refereed research journal	Adaptive land use, an approach to conserve biodiversity, case of Nashik	Dr. Prajakta Baste & Prof. Ketaki Joshi	Architecture	Sanchar Educational & Research Foundation, Lucknow	2020-21	http://seresearchfoundation.in/sodhsarita/
5	Envisioning India 2050 Concerns of Urban environment	Envisioning India 2050 Concerns of Urban environment - Social Issues	Prof. Vijay Pawar	Architecture	Sinhgad Technical Education Society's Sinhgad College Of Architecture, Pune	2019-20	http://cms.sinhgad.edu/architecture-website-assets/NCEI-Poster-Sinhgad-College-of-Architecture.pdf
6	National Conference on Building with time	Changing housing trends & political influences	Prof. Vijay Pawar	Architecture	Dr. D. Y. Patil, Ambi, Pune	2019-20	https://dypatiluniversitypune.edu.in/event-barch_cur.php
7	National Conference on Building with time	Regionalism in architecture & globalization.	Prof. Vijay Pawar	Architecture	Dr. D. Y. Patil, Ambi, Pune	2019-20	https://dypatiluniversitypune.edu.in/event-barch_cur.php


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8	Proceedings of the International Conference on Rediscovering cities 2K20	Culturally responsive urban development	Prof. Suruchi Randive & Prof. Purva Shah	Architecture	White falcon publishing	2019-20	https://www.academia.edu/44919792/Proceedings_of_the_International_Conference_on_CITIES_2K20_REDISCOVERING_EDITORS
9	Metagreen Dimensions 2020	Community Participation in Heritage Management at Chandori	Prof. Suruchi Randive & Prof. Purva Shah	Architecture	College of Architecture Trivendrum	2019-20	http://cat-tvm.in/uploads/MG2020-Conference-Proceedings.pdf
10	International journal of Management, Technology & Engineering	Life Cycle Analysis of a curtain wall glass assembly using high performance glazing and aluminium support system	Prof. Ketaki Joshi	Architecture	International Journal of Management Technology and Engineering Journal	2018-19	http://ijamtes.org/gallery/121.%20sept%20ijmte%20-%20cw.pdf
11	International Journal of Emerging Technology and Advanced Engineering	Review of strength of fibre reinforced concrete using plastic fibres	Prof. Anil Thombre	Architecture	International Journal of Emerging Technology and Advanced Engineering	2017-18	https://ijetae.com/files/Volume7Issue9/IJETAE_09_17_32.pdf
12	International Journal of Emerging Technology and Advanced Engineering	Evaluation of strength of fibre reinforced concrete using plastic fibres	Prof. Anil Thombre	Architecture	International Journal of Innovative Science and Research Technology	2017-18	https://ijsrt.com/wp-content/uploads/2017/10/Evaluation-of-Strength-of-Fibre-Reinforced-Concrete-Using-Plastic-Fibres-2.pdf
13	7th International Ground Water Conference IGWC 2017 Organised by National Institute of Hydralogy Roorkee In Association with Association of Global Ground Water scientist, Texas A&M	Ground water Governance for Indian cities	Dr. Prajakta Baste	Architecture	Capital publishing company, New Delhi.	2017-18	http://cwc.gov.in/7th-international-groundwater-conference-igwc-2017-groundwater-vision-2030water-security-challenges

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14	International journal of Engineering Technology science and research	Sustainable Development imperatives for new towns in hilly areas - A case of India	Prof. Gaurav Arbooj	Architecture	International Journal of Engineering, Technology, Science and Research.	2017-18	http://ijetsr.com/images/short_pdf/1512892314_268-278-chd949_ijetsr.pdf
15	International journal on Emerging Technologies - 8	To findout the feasibility of ethylene - tetra - fluoro - ethylene (ETFE) in inflatable pillow systeme (IPS) to be used for building facades.	Prof. Umesh Hirve	Architecture	Research TrendS	2016-17	https://researchtrend.net/ijet/ijet.php
16	CPUD 17 - International city planning and Urban design conference	Maintaining uniqueness in globalization: Exploring progressive approach towards urban conservation opportunities in smart cities movement : Cases of cities in India	Prof. Purva Shah	Architecture	DAKAM, Turkey, Istanbul	2016-17	https://www.dakamconferences.org/files/ugd/bac820_39f9762e3fbc492790789551ef0655d6.pdf


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Affiliated to University of Pune (id.No.PU/NS/AC/035[1989])



Ref. No.:

Date: 23/05/2022

Principal : **Dr. Prajakta S. Baste**

No books & chapters volumes/books published by the staff during 5 assessment years.

Dr. Prajakta Baste

 Principal

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3.2.2 Number of books and chapters in edited volumes/books published and papers published in national/ international conference proceedings per teacher during last five years.

Sr. No.	Name of the teacher	Title of the paper title of book published	Title of the proceedings of the conference	Name of the publisher	Year of publication (calendar year)	Whether in national/ international	ISBN/ISSN number of the proceeding	The proceeding photo with location and funtion
1	Prof.Ankita Pathare	Effect of tall building cluster on Environmental Quality within and in adjacent areas	NCSAPT 2020 - National Conference on Sustainability in Architecture,Planning and Technology	International Journal of Scientific Research in Engineering and Management (IISREM)	2020-21	NCSAPT 2020 - National Conference on Sustainability in Architecture,Planning and Technology	ISSN 2229-5518	Not available
2	Prof.Radhi ka Bhattad	A review of conventional rigid & flexible paving materials for sustainable urban road construction at Nashik, Maharashtra, India	e-Preceedings of NCET - 2020	MCE Society's Allana College of Architecture, Pune	2020-21	National Conference on Empirical Theories in Architecure, Planning & Construction Management	ISBN: 978-93-5416-259-6	Not available
3	Prof.Vinit Bobade	Dance and music in Indian temple architecture	International Journal of Scientific Research in Engineering and Management	International Journal of Scientific Research in Engineering and Management (IISREM)	2020-21	International Journal of Scientific Research in Engineering and Management	ISSN: 2582 - 3930	Not available
4	Dr. Prajakta Baste & Prof. Ketaki Joshi	Adaptive land use, an approach to conserve biodiversity, case of Nashik	SHODH SARITA, An international bilingual peer reviewed refereed research journal	Sanchar Educational & Research Foundation, Lucknow	2020-21	SHODH SARITA, An international bilingual peer reviewed refereed research journal	ISSN - 2348-2397	Not available
5	Prof. Vijay Pawar	Envisioning India 2050 Concerns of Urban environment - Social Issues	National conference Envisioning India 2050 Concerns of Urban environment	Sinhgad Technical Education Society's Sinhgad College Of Architecture, Pune	2019-20	National Conference Envisioning India 2050 Concerns of Urban environment	978-81-92923-1-6	Available. Attached below
6	Prof. Vijay Pawar	Changing housing trends & political influences	National Conference on Building with time	Dr.D.Y.Patil, Ambi,Pune	2019-20	National Conference on Building with time	978-81-908418-6-3	Available. Attached below
7	Prof. Vijay Pawar	Regionalism in architecture & globalization.	National Conference on Building with time	Dr.D.Y.Patil, Ambi,Pune	2019-20	National Conference on Building with time	978-81-908418-6-3	Available. Attached below

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8	Prof. Suruchi Randive & Prof. Purva Shah	Culturally responsive urban development	International Conference on Rediscovering cities 2K20	White falcon publishing	2019-20	Proceedings of the International Conference on Rediscovering cities 2K20	978-93-89932-48-5	Not available
9	Prof. Suruchi Randive & Prof. Purva Shah	Community Participation in Heritage Management at Chandori	2nd International conference on performance of Built Environment	College of Architecture Trivendrum	2019-20	International conference Metagreen Dimensions 2020	978-93-5396-411-5	Not available
10	Prof. Ketaki Joshi	Life Cycle Analysis of a curtain wall glass assembly using high performance glazing and aluminium support system	International journal of Management, Technology & Engineering	International Journal of Management Technology and Engineering Journal	2018-19	International journal of Management, Technology & Engineering	2249-7455	Not available
11	Prof. Anil Thombre	Review of strength of fibre reinforced concrete using plastic fibres	International Journal of Emerging Technology and Advanced Engineering	International Journal of Emerging Technology and Advanced Engineering	2017-18	International Journal of Emerging Technology and Advanced Engineering	2250-2459	Not available
12	Prof. Anil Thombre	Evaluation of strength of fibre reinforced concrete using plastic fibres	International Journal of Emerging Technology and Advanced Engineering	International Journal of Innovative Science and Research Technology	2017-18	International Journal of Emerging Technology and Advanced Engineering	2456-2165	Not available
13	Dr. Prajakta Baste	Ground water Governance for Indian cities	Ground water vision 2030 water security, challenges and climate change adaptation	Capital publishing company, New Delhi.	2017-18	7th International Ground Water Conference IGWC 2017 Organised by National Institute of Hydraulics Roorkee In Association with Association of Global Ground Water scientist, Texas A&M University USA.	978-81-92923-0-9	Not available
14	Prof. Gaurav Arbooj	Sustainable Development Imperatives for new towns in hilly areas - A case of India	International journal of Engineering Technology science and research	International Journal of Engineering, Technology, Science and Research.	2017-18	International journal of Engineering Technology science and research	2394 - 3386	Not available

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15	Prof. Umesh Hirve	To findout the feasibility of ethylene - tetra - fluoro - ethylene (ETFE) in inflatable pillow systeme (IPS) to be used for	International journal on Emerging Technologies - 8	Research Trends	2016-17	International journal on Emerging Technologies - 8	0975 - 8364	Not available
16	Prof. Purva Shah	Maintaining uniqueness in globalization: Exploring progressive aproch towards urban conservation opportunities in smart cities movement : Cases of cities in India	CPUD 17 - International city planning and Urban design conference	DAKAM, Turkey, Istanbul	2016-17	CPUD 17 - International city planning and Urban design conference	978-605-9207-73-7	Not available

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National Conference on Building with time at Dr.D.Y.Patil, Ambi,Pune.

Paper presentation on Changing housing trends & political influences and Regionalism in architecture & globalization by Prof. Vijay Pawar





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Envisioning India 2050 Concerns of Urban environment at Sinhgad Technical Education Society's Sinhgad College Of Architecture, Pune.
Paper presentation on Urban environment - Social Issues by Prof. Vijay Pawar



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Online paper Presentation by Dr. Prajakta Baste & Prof. Ketaki Joshi on Adaptive land use, an approach to conserve biodiversity, case of Nashik in Multi-disciplinary international conference and Paper Published under- SHODH SARITA, An international bilingual peer reviewed refereed research journal in year 2020-21.

