



**INTERNATIONAL
CONVENTION
2023**

Role of Architecture in the Creation of Identity of
the Contemporary City



Society of Nepalese Architects (SONA)

2023 Proceedings of the
2nd SONA International Convention
Role of Architecture in the Creation of Identity of the Contemporary City



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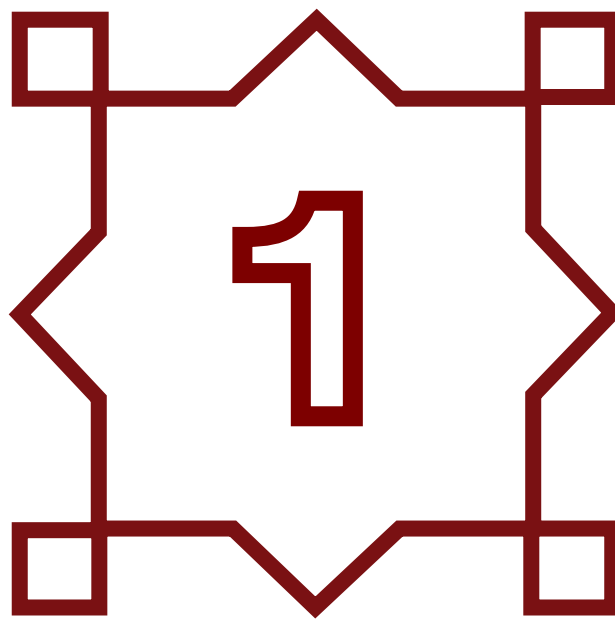
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PREFACE

Theme of the (2nd) SONA International Convention

ROLE OF ARCHITECTURE IN THE CREATION OF IDENTITY OF THE CONTEMPORARY CITY

Ar. Kai Weise | Technical Coordinator

Cities are changing, from what which was developed out of traditional principles of hierarchies and functions, to amorphous agglomerations arising from unguided growth and commercial speculation.

The medieval cities had character. The hierarchy of spaces, between the public and semi-public, reflected the need of the communities. The architecture was determined by the available materials and traditional technological advancements, with ornamentation presenting the highly developed skills of the craftspeople. This was featured mainly in the religious, community and palatial monuments, but was also present in the private dwellings. However, the nostalgia of the medieval cities is not always justified, considering the squalled and lack of hygiene of the period.

Change has been introduced to the medieval city through the introduction of infrastructure and services. Often, there has also been extensive reconstruction carried out, where the traditional buildings have been replaced by tall concrete buildings. Sometimes these concrete buildings are given facades mimicking the traditional, but ignoring the essential character and the proportions. The medieval cities are changing.

The boundaries of the medieval cities have been torn down, both the physical walls and the intangible protective ring of deities. The cities now sprawl across the landscape, which used to be precious agricultural land. Areas which were the most fertile, which flooded during the rains, are now covered with haphazard array of buildings. The narrow roads wind around and around, following no principles of planning. The buildings present a spectrum of diverse images envisioned by the owners, or the architects, or not presenting any character.

Even the planned areas of the new city are created through the numeric plotting of a land pooling project. Plots are redistributed along a grid of roads. However, urban spaces are not planned. The overall character of the urban extension, the aesthetics of the building designs, is not considered. Usually, not even the environmental impact of the planning is considered. The sewer lines lead straight into the rivers.

This description will partially, or wholly, depict many cities, not only in Asia, but throughout the world. The question that arises here is, what is the architects' role in all this? Are architects



responsible for the dire situation of our cities? What would the responsibilities of architect be, to improve the cities? Do architects lack resolve in dealing with these circumstances, or are they not given the opportunity to contribute by the relevant authorities.

The International Conference that SONA is organising, will discuss these issues. Paper contributions are sought under the following sub-themes.

1. The identity of traditional and modern urban spaces

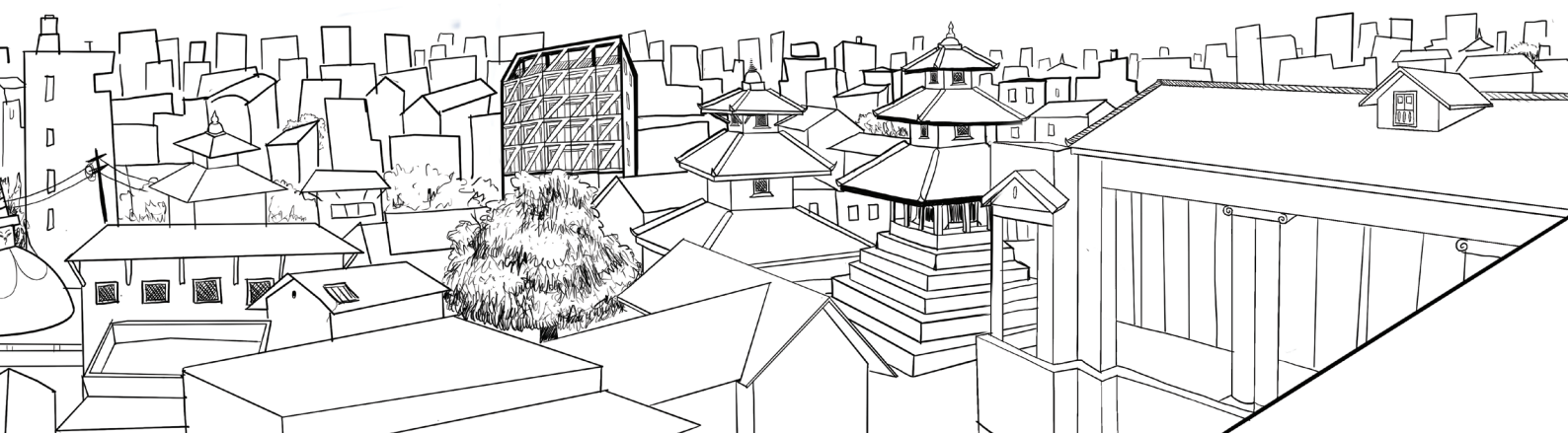
The first sub-theme examines the identity of the traditional and modern urban spaces. Papers will need to examine the character of the urban spaces, which are defined by the functions and the surrounding architecture. There is a clear hierarchy of urban spaces in the medieval city, with the buildings themselves defining the courtyards, squares and streets, catering to the various categories of community activities. This has changed with the modern city, which is often defined by walls and fencing, reflecting the need of the individuals. How has the urban spaces of the cities, changed? What has been lost? What needs to be addressed?

2. The role of architecture in defining the identity of the city

The second sub-theme focuses on the architecture itself. The medieval cities presented a harmony due to the use of traditional materials and buildings designs. Even within a certain level of diversity, there was harmony in form, colour and scale. A certain level of uniformity was also sought when cities were designed using neoclassical forms of architecture. The streets lined with uniform white stucco facades presented the vision of an authority with power. The architecture of the city has changed to allow a diversity which shatters any form of harmony or uniformity. Who is responsible for this diversity in architectural design? Is it detrimental to the character of the city? What has the position of the architect been in this process? What needs to be addressed?

3. Sustainability of the traditional building technology in the urban context

The third sub-theme focuses on the building materials, and the related construction technology. The mud, brick and timber structures have changed to include lime and plaster, followed by reinforced cement concrete and steel. How has this change in materials affected the urban context? Taller buildings are being built, which might not have been possible without excessive use of materials. Every decreasing size of plots within the city requires efficient use of space and reduced thickness of walls. Do traditional building materials and technology still have relevance in the modern city? Do the considerations of sustainability play a role in this discussion? What is the role of the architect in determining the most appropriate use of construction materials? How do such decisions affect the identity of the city? What needs to be addressed?



Message from the President and Convention Chair



Owing to some management arrangements the proposed Convention in December 2022, now referred to as the (2nd) International Convention 2023 held between the 19th – 20th January 2023. But this event was preluded by the Round Tables for few ARCASIA Committees. The venue of the Convention: The Radisson Hotel, seemed quite an appropriate venue for the event, and strategically located for walking/moving around the city.

Sharp at 10am of the 18th January, the ARCASIA President Dr. Abu Sayeed M. Ahmed spoke to all the Round Table Committees and was pleased to have for the first time in his term, the physical presence of all ARCASIA Committee Chairs. The Round Table of the following were held:

- ARCASIA COMMITTEE on PROFESSIONAL PRACTICE (ACPP) -
Chaired by Ar. Mukul Goyal
 - ARCASIA COMMITTEE on GREEN & SUSTAINABLE ARCHITECTURE (ACGSA)
Chaired by Ar. Tushar Sogani
 - ARCASIA COMMITTEE on YOUNG ARCHITECTS (ACYA)
Chaired by Ar. Bisma Askari
- Other Committee Chairs present were
- Ar. Adrianta Aziz: - ARCASIA Committee on Architectural Education (ACAE)
 - Ar. Thomas Cheung: - ARCASIA Committee on Social Responsibility (ACSR)

Earlier, on the 17th late afternoon, since the ACAE Committee did not have a Round Table, the Chair Ar. Adrianta along with Ar. Ridha, and Chair ACPP Ar. Mukul spoke to the student/faculty at the DoA/Pulchowk Campus. The ARCASIA President Dr. Abu Sayeed, made the introductory remarks. On the 19th and 20th too, some visiting Architects also went and spoke to architectural students/faculty at Kathmandu Engineering College, and later on the 22nd at the Khowpa Engineering College.

During my visit to the UIA Extraordinary General Assembly in Madrid Spain, held on May 16th – 17th 2022, I also had a chance to discuss with the Regional Presidents/Representatives on the revival of SAARCH, and sought their agreement. A very conducive meeting of representatives of the countries represented, was held in the afternoon a day earlier on the 18th. The presence of UIA President, ARCASIA President along with the SAARCH Chair and all other Presidents/Representatives was a very memorable beginning. All said, we witnessed

a very touching event in history, which is unlikely to be repeated for a long long time – we had the presence of the UIA President, ARCASIA President, SAARCH Chair , UIA Zone 4 Vice President and Past Chair SAARCH, in the meeting - positive for Nepal and SONA.

Getting back to the preparation for the Convention; I had a few discussions with Architects Prof. Dr. Sudarshan Tiwari, PP Ar. Bibhuti Man Singh, IPP Ar. Anju Malla Pradhan, Ar. Biresh Shah and Ar. Kai P Weise. Soon we arrived at finalizing of the Convention theme - “Role of architecture and the creation of the identity of the contemporary city”. Ar. Kai as the nominated Technical Coordinator; managed the concept and framework of the Theme and Sub Themes and invite for papers. Of course his team and the Convention Secretary need to be also appreciated. The Convention was attended by nearly 300 participants.

The event’s opening session began with introductions of the dignitaries and guests, followed by a moment of silence lasting 30 seconds; observed to pay respects and offer prayers for the victims of the recent plane crash in Pokhara. The keynote address was by Ar Madhav Raman, who provided a comprehensive overview of various subjects. He touched upon the plate tectonics that led to the formation of the Himalayas, the issues arising from urban sprawl, the debate surrounding permanent versus temporary architecture and the question of who builds these structures. Contemporary architecture needs to be in harmony with the environment. We, as architects, planners, and engineers, need to work closely to ensure that our designs and materials complement the environment. Ar. Madhav Raman’s presentation on Akhada reiterated the importance of this approach. We need to focus on the areas where we can make a difference and ensure that we do not deviate from reality.

Remarks from the President of ARCASIA, the President of UIA, and the chief guest, former Prime Minister of Nepal, Ar. Dr. Baburam Bhattarai, followed the keynote. With a planning background, the observation and comments of the chief guest was very appropriate and noteworthy. Dr. Baburam Bhattarai rightly pointed out that Kathmandu is losing its identity due to the dull concrete structures. We have many World Heritage sites in the valley, and it is our responsibility to ensure that we preserve them. We can learn from Le Corbusier’s vision for the city in his ‘Ville Contemporaine’, and the success of Chandigarh as an example of good urban planning. We need a collective effort to make our cities livable, and we have to consider various aspects, such as climate, as highlighted by the chief guest. He thanked ARCASIA for organizing three round tables on professional practice, green and sustainable architecture, and young architects.

I was delighted that we had presence of the UIA President Ar. Jose Luis Cortez, ARCASIA President Dr. Abu Sayeed M. Ahmed, UIA General Secretary Ar. Tan Pei Ing, UIA Vice President Zone IV Ar. Ishtiaque Zahir Titas, the UIA Zone IV Council Member/SONA IPP Ar. Anju Malla Pradhan, SAARCH Chair/SONA PP Ar. Kishore thapa and the ARCASIA Committee Chairs/ their members, SONA members, Guests, student volunteers and everyone participating from different countries and Nepal.

We had four excellent Discussion Sessions with Panelists and an equal number of Presentations

by various authors, spread over two days. Each of the sessions, were very well informed, presented and discussed which kept the participating audience alert and attentive. Credit also goes to all the Chairs in doing an excellent job in conducting their respective sessions. The presenters and panelists were a mix and this gave a very interesting flavor, because of the age group and their impressions, therefore. Technical Coordinator Ar. Kai and his team also must be commended for the session arrangements for the two days. At the closing session of the event, the newly appointed Honorable Minister for Urban Development, Mr. Bikram Pandey, was the chief guest. He promised to work in close collaboration with the architecture community. All the visiting dignitaries also were very appreciative of the Convention being vibrant, meaningful and very successful. The management and hospitality was very well appreciated. The Closing fellowship dinner brought about a lot of opportunities for informal associations, which was also a treat.

We were honored to have some distinguished personalities with us. We had Hon. Dr. Baburam Bhattarai, Former Prime Minister of Nepal, Ar. Jose Luis Cortes - President UIA; Dr. Abu Sayeed M. Ahmed - President of ARCASIA; Ar. Tan Pei Ing - Secretary General UIA; Ar. Ishtiaque Zahir Titas - Vice President for Zone 4, UIA; Ar. Anju Malla Pradhan - Council Member for Zone 4/ IPP SONA; Ar. Hisila Yami, Former Minister of Physical Planning and Works; along with the presence of the Chairman of SAARCH, Ar. Kishore Thapa, who is also a PP of SONA. We have also taken the opportunity to revive SARCH, a committee of architects from the South region. We had representatives from nearly 13 countries attending the Convention and ARCASIA/ SAARCH meetings. Thank you all.

I would also like to thank Asian Paints, our main sponsor, and other sponsors for supporting this event.

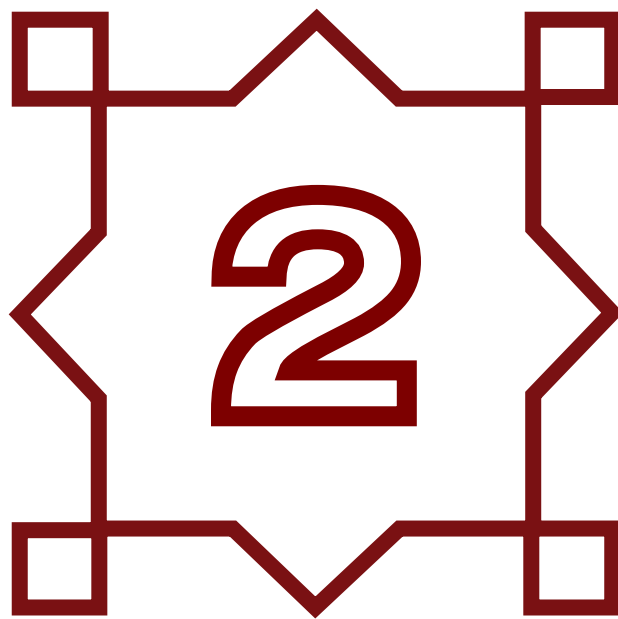
Finally, without mentioned individuals, I extend my warm gratitude to all SONA members, 14th EC Members, student volunteers and all the friends/well wishers who made this event very successful. I would like to thank each one of you for being a part of this event. I urge you to now further interact with fellow architects from outside of Nepal and learn from each other.

Hail SONA!!!!

Ar. Rajesh Thapa
Conference Chair
President, 14th Executive Committee
Society of Nepalese Architects (SONA)



Pictures from the ARCASIA Rountable and SONA International Convention 2023



OPENING

Welcome Address by the Convention Secretary



“Good morning, Namaste- Esteemed members and well-wishers of the Society of Nepalese Architects. As the sun rises over the ancient temples and traditional brick houses of Kathmandu, let us embrace the romance of this beautiful city, as we begin this enlightening journey of the SONA International Convention 2023.”

It is an honor to have such a distinguished group of architects, planners, and designers where we have gathered to explore the theme of “Role of Architecture in the Creation of Identity of the Contemporary City.” We are privileged to have with us our esteemed Chief Guest, Hon. Dr. Baburam Bhattarai, Former Prime Minister of the Republic of Nepal, who will be sharing his valuable insights on the topic of architecture and its impact on the identity of contemporary cities. We also have Ar. Jose Luis Cortes, President of the International

Union of Architects-UIA who have travelled long from Copenhagen to Paris to Nepal just to attend this program. We are overwhelmed by your kind gesture.

Similarly, we are honored to have a host of esteemed guests Mr. Suresh Acharya, Secretary of the Ministry of Urban Development, Ar. Dr. Abu Sayeed M. Ahmed, President of the ARCASIA, and many more dignitaries UIA and ARCASIA. We are also honored to welcome our past presidents, senior members of the society, active SONA members and architecture students.

“Ladies and gentlemen, we have a diverse group of participants from both our nation and around the globe, and we look forward to hearing from each and every one of you as we engage in discussions and debates on the role of architecture in shaping our cities and communities. As we look around us, we can see the tangible evidence of architecture in the form of buildings, structures, and spaces. But architecture is not just about bricks and mortar. It is about the way we shape our cities, communities, and ultimately, ourselves. In the contemporary city, architecture is not just about designing structures, but about designing the fabric of our urban lives. It is about creating spaces that are livable, inclusive, and sustainable. It is about creating a sense of place that is unique and authentic.

The theme of this convention is particularly relevant in today’s world, where cities are rapidly expanding and evolving. The role of architecture in shaping the identity of a city is crucial, as it not only impacts the physical form of the city, but also the way in which its citizens interact with and experience their surroundings. Honorable guests, and esteemed participants, as architects, we have the unique opportunity to shape the future of our cities, to create spaces that are not only functional but also meaningful, that foster community and promote a sense

of belonging. It is our duty to consider not only the functional requirements of a building, but also its impact on the social and cultural fabric of the city.

As we gather here today, let us take this opportunity to share our ideas, our knowledge, and our passion for architecture. Let us come together to explore new approaches, to challenge the status quo, and to push the boundaries of what is possible.

I would like to extend my heartfelt gratitude to all of the members of organizing community, volunteers, participants, speakers, and session leaders for making this convention a reality. Your hard work and dedication are greatly appreciated, and it is your contributions that has brought us up to here.

As we delve into the theme, let us remember that architecture is not just about designing buildings, it is about designing a better future for all of us. Let us come together, share our ideas and perspectives, and find solutions that will help us create sustainable and livable cities for future generations.

Once again, I'd like to welcome national and international participants to the SONA International Convention 2023. Let us begin this exciting journey of exploring the "role of architecture in the creation of identity of the contemporary city".
Thank you.

Ar. Apil KC
Conference Secretary
Secretary, 14th Executive Committee
Society of Nepalese Architects (SONA)
Thursday, January 19 2023

Message from the ARCASIA President



For the past three years, we have grown tired of seeing each other only on computer screens during Zoom meetings and webinars. Meeting in person and sharing thoughts in the vast heritage context of Kathmandu Valley will be an enormous boost to our collective work spirit.

Firstly, I would like to extend my heartfelt congratulations to the Society of Nepalese Architects (SONA) for their great effort in organizing the SONA International Convention 2023. This event will take everyone from the virtual world to the fresh, chill air of Kathmandu Valley, surrounded by the Himalayan mountains.

I am representing ARCASIA, an organization with humble beginnings in 1969, comprising only institute architects from six Asian countries, which has now expanded to 22 member countries. It is a great platform for professional networking among architects in the Asian region. We are also very grateful to SONA for organizing several round tables and events, including the meeting yesterday. These ARCASIA events not only strengthen the bond among members but also provide a platform to share and encourage effective discourse on the future of Asian architecture.

Whenever I receive an invitation from any part of Southeast Asia, I cannot resist participating because of my professional and academic interest in the cultural heritage of this subcontinent. To me, Nepal is a cultural epicenter of Asia, where we can find an assemblage of traditional architecture and urban design and development. It is the only capital city in the world where we can experience seven World Heritage-listed sites located in and around Kathmandu. Even the historic city core of Kathmandu, with its unique arts and architecture, emits vibrant cultural traditions and ritual practices. The traditional compact city planning of Patan Square, Bhaktapur, and Kathmandu Durbar Square attracts not only general tourists but also urban designers, historians, building professionals, conservation architects, and academicians.

In addition to the rich cultural heritage of Nepal, it is the birthplace of Siddhartha Gautam Buddha, who enlightened all Asian civilizations with his philosophy, starting from the East, from Pakistan to Afghanistan and ending up in Japan, the farthest point in Asia.

The main theme of this convention is “The role of architecture in creating the identity of contemporary cities”, which is very timely and emotionally interesting to all of us. This convention is a unique opportunity for participants to lead the debate on preserving the sustainable history of the urban landscape of different Asian countries. We are at a critical moment in time where we must work together to find innovative and appropriate solutions

for all, especially to save many of our historic Asian cities that are now in danger. Today and tomorrow, these issues will be discussed with us and the audience.

The success of an international convention is ultimately defined by the diligent efforts put forth by many people who have worked extremely hard to plan and organize both the technical events and the supporting social arrangements while monitoring all important aspects of the event. I would like to express my gratitude to the individual organizers from SONA for steering this gigantic task, especially the lovely young volunteers.

Ar. Dr. Abu Sayeed M. Ahmed

President

Architects Regional Council Asia (ARCASIA)

Thursday, January 19 2023

Address by President UIA



“The role of architecture in creating the identity of the contemporary city” has always been the focus of UIA over the years. As you all know, the International Union of Architects (UIA) was established in 1948 in Lausanne, Switzerland, and this year, we celebrate our 75th anniversary. The reason UIA was created was because after World War II, people asked, “Where are the architects? We need them to rebuild Europe and provide homes for those who have been without shelter.” Our goal was to recover our heritage, and that’s how 120 countries from around the world came together. We are still united after 75 years, which is significant because UIA is the only international organization of architecture that showcases what architects can do. As the president of UIA, I am proud to see the energy, talent, and creativity of architects worldwide, especially in South Asia, where I recently visited. I believe that the heritage of Nepal, India, Pakistan, Bangladesh, and most of the Asian countries is essential.

As the current president of UIA, I am proud of the energy, talent, creativity, and efforts that architects around the world are making to manage the future of their countries. In my recent visits to many countries in South Asia, I have witnessed firsthand the power of architects in this region. The heritage of Nepal, India, Pakistan, Bangladesh, and other Asian countries is essential, and I am happy to see presidents and members of Arc Asia from various countries in Asia gathered here. We can share a lot of experiences and work together towards a common goal of building a better future for everyone. Since UIA’s inception, we have worked closely with UNESCO and the United Nations on the education of future architects and the protection of heritage. Our primary goal is to help human beings have a better life, a better level of living, good habitats, and an increased level of happiness in the buildings and houses we create. Thus, our main issue today is to strike a balance between the built environment and nature. We need to mitigate the damage we have done to the planet, such as contaminating rivers and seas, affecting agricultural areas, and polluting the air and water quality in many cities. Architects must minimize toxic emissions and decarbonize the world.

We have seven years to go before we reach 2030 and achieve our goals. Therefore, architects need to become leaders and engage with politicians and other disciplines to work together. We cannot change the world alone; we need to work with engineers, constructors, developers, development agencies, governments, civil society, and the private sector. We must work together to create visionary plans for every city and country, which means we need to call upon everyone to collaborate. Our main problem is that we have focused too much on urban development and forgotten about the millions of small villages in rural areas. We should not forget about the value of our territory and the small villages where people have been living

and migrating to urban megacities. With technology, we can connect with each other without having to move to big cities. We can live in small villages and have the same quality of life as many big cities. However, we need to work hard to ensure minimum standards of living, employment, housing, education, and health. The International Union of Health declared last year as the Year of Health, and architects need to design houses with better sanitation systems. All houses worldwide should have access to water supply, sewage, and garbage disposal. We need to consider the location of the houses in terms of sunlight and wind exposure. Many houses are not located correctly, and that's why, during the pandemic, many people died. We need to pay attention to building requirements and standards to ensure better living conditions. After the pandemic, we need to be more resilient and design better places to live.

We have more than 6 million people around the world who passed away because we were not resilient. Many of the reasons why we were not resilient is because we did not pay attention to building requirements and standards, to have better places to live. From now on, after the pandemic era, I think we have to think about where we want to go in the next few years. It is a very important moment that we change the past and think about where we want to go. We cannot continue doing the same things as in the past. We have to change ourselves and convince society that we have to be more frugal, sustainable, and inclusive. Everybody has to have the pleasure to enjoy nature and the cities and villages. We have to be more equitable. The cities are for everybody, and the open spaces and public spaces are for everybody, so we have to design for everybody. Whatever we do has to be integrated into the urban or rural context.

So, I want to encourage all of you that if we want to play an important role in the future, that means we have to look for cities that are more safe, sustainable, healthy, inclusive, equitable, and more beautiful. Architects have to add beauty to every space where we live. That's what we studied for. We have been studying architecture to be sensitive to all the wonderful resources that we have around us with the nature that is in our places.

In this country, Nepal, one of the most beautiful countries in the world, architects have a big task. We have to play an important role in order to preserve and enrich the quality of life here in Nepal and in all of Asia. So, on behalf of the International Union of Architects, I want to congratulate all of you for being here, and I want to encourage all of you to play this important role in the future of architecture, and to pay importance to the identity and significance of each place. We cannot import ideas from other places that are not correct for our own environment. We have to be careful about what we bring from other places. We have to develop ourselves with all our creativity and our own way of living according to this balance between the built environment and natural environment.

Ar. Jose Luis Cortes

President

International Union of Architects (UIA)

Thursday, January 19 2023

Address by Chief Guest and Former Prime Minister

As a student of architecture, the role of architects is not only the creation of aesthetically beautiful, functional and convenient buildings but also to relate them to the overall built environment of the city. It was by coincidence that the planner of Chandigarh city where my university was located was none other than Le Corbusier who is a renowned architect of the 20th century. The city which mister corbusier planned is still considered as an exemplary master piece of city planning in the modern world. The planning philosophies of Chandigarh are based on the local geography, climatology, and aspiration of the leaders of the modern era. The government buildings, corporate offices or private residences are all inspired by mister corbusier's modernist architectural thoughts.



During my student days in India, my inclination was more towards bringing radical change in Nepali politician society. However, I didn't miss the opportunities to meet ambient architects and city planners of India. I developed a deep sense of appreciation for the well designed buildings, well planned cities, and well managed human settlement. I also understood the importance of rural urban linkage in economic growth of a developing country like Nepal. Since I was deeply involved in the political struggle that lasted almost three decades in Nepal, I couldn't keep up with the architectural trends happening in Nepal and around the world. However, being a member of Sona I kept myself updated on the issues and challenges of architecture and city planning in Nepal. During my tenure, as the prime minister, I took leadership in facelifting the city of Kathmandu by improving the road network formation of Kathmandu valley development authority and establishment of a separate ministry of urban development.

Let me go back to the mediaeval times. The towns of Kathmandu valley of Nepal flourished through the trade between India and Tibet, an autonomous region of China. I am happy that mister Madhavan also follows the same argument. This is what I had tried to develop in my Thesis. The towns were carefully planned based on the trade route, topography, climate culture and religious belief. These towns were carefully planned as a self-contained and sustainable human settlement with compaced urban morphology surrounded by green agricultural hinterland. The urban settlements were developed as the centres of trade, commerce and cottage industry. In order to cater the needs of water supply and sanitation, they developed natural sources of ponds, canals and water sprouts. In order to organise social and cultural events, they developed a network of streets, squares and open spaces. The palaces, temples and public buildings were located in such a way that they created nodal points as well as visible landmarks of the town. The buildings were created not just as a functional living space, but also pieces of art and architecture with beautifully carved doors

and windows were decorated in the courtyards. These towns have survived in the natural and manmade disasters through many centuries and are still habitat. They now look like an open museum admired by tourists. The most unfortunate part of the story is that we architects and town planners who are trained in western education system failed to appreciate the deeper meaning of town planning of that time and its relevance in the modern context.

The modern principles of town planning and practices emerged after the industrial revolution in 1920s in Europe and rapid economic development in America in the 20th century. The colonies of European countries, particularly in Asia and Africa have adopted the city planning guidelines of their colonisers. After second world war, with the advent of the new world order and the beginning of cold war between the United states and Soviet Union, the newly independent countries, such as India, Pakistan, Bangladesh, in South Asia whereas Japan, Korea, Indonesia, Australia in Asia Pacific region followed the city planning concept based on automobile, independent living, excessive consumption, industrialization and private capital formation. Similar situations occurred in the newly independent countries of Africa and South America. The Model cities of our time, identified by skyscrapers, telephones and television towers, wide roads, flyovers, bridges, vast airports and stations. The trends of globalisation which started from the early 60s had gradually influenced the architecture of developing countries like ours. The trend is still continuing with the devastating effect on the local art and architecture, indigenous technology and craftsmanship. Our cities and human settlements are losing their historic identity. Furthermore traditional knowledge, skills and self confidence of a local community is also diminishing. The history of Kathmandu valley turning into a lifeless concrete jungle. Although we cannot stop the effects of globalisation. We can always follow the principle of thinking globally and acting locally. This is necessary to protect the fragile natural environment, conserving the cultural identity of communities and sustaining the local economy.

The 11th goal of sustainable development goal 2030 which admits creation of safe, sustainable, resilient and inclusive cities, and human settlements. The goal has been rightly set to protect our cities from natural and manmade disasters, economic crisis and political and economical conflict. It also emphasises, to protect the rights of underprivileged, economically and culturally marginalised urban dwellers. I also like to remind you that the habitat 3 held in Ecuador in 2016 has adopted new urban agendas for the next fifteen years. Focusing more on inclusive city planning and development and living. I strongly believe that the identity of a city is not limited to magnificent buildings and structures. The true identity lies in the inclusiveness, sense of belongingness, and economic prosperity of the residence. The tangible and intangible heritage of the community are the greatest assets which money cannot buy. Most of the cities and towns in our regions are not planned by renowned planners but they are crafted by people through generations. Although, at the first glance our city looks untidy and chaotic, they are truly livable, vibrant and inclusive.

The role of architects in this context is to design the built environment which suits the needs of the people. Our streets and roads shall be planned in such a way that pedestrians get priority rather than cars. Community spaces shall exceed the private spaces, equal opportunity shall be ensured to the people of all economic status and local economy shall include formal and

informal sectors. At the end I request you to revisit the existing building designed norms and standards in the context of climate change and recurring natural disasters. The scientists have identified cities as the largest contributor that is 70% of global carbon emission. Out of these building construction activities contribute 58% of the carbon footprint. In order to protect the health and well-being of our future generation we need to change our consumption pattern and development paradigm. This is our obligation to reduce the carbon footprint in our daily life and development activities. It can be done through extensive use of local building materials and technology, promotion of energy efficiency, efficient waste water management, and use of renewable energy. The advancement in information communication technology including the increasing use of the internet, business transactions and city governance will also contribute to the reduction of carbon emission. Let us all try to create livable cities through innovation, creativity and planning and design. Besides ecological responsive buildings, the identity of the future cities lies in their efforts towards energy conservation, reduction in carbon footprint, public convenience from service delivery and close urban social fabric.

I wish all the success of the convention. I hope that the deliberations and the exchange of the ideas will keep us in finding the role of architects in shaping the sustainably developed environment. I also wish for international diligence and a pleasant stay in Nepal.
Thank you so much.

Dr. Baburam Bhattarai

Former Prime Minister of Nepal (2011-13)

Chairman | Nepal Socialist Party

Thursday, January 19 2023

Welcome Address by the Convention Chair

Ladies and gentlemen. I would like to start with a warm greeting - Namaste, and as we say in Kathmandu- जोजोलापा: We have gathered here to kick off an important discussion. We are honored to have some distinguished personalities with us today. We have Hon. Dr. Baburam Bhattarai, Former Prime Minister of Nepal, Ar. Jose Luis Cortes, President UIA, Dr. Abu Sayeed M. Ahmed, President of ARCASIA, Ar. Tan Pei Ing, Secretary General UIA, Ar. Ishtiaque Zahir Titas, Vice President for Zone 4, UIA, Ar. Anju Malla, Council Member for Zone 4, Past President of SONA, and Ar. Hisila Yami, Former Minister of Physical Planning and Works. I would also like to introduce Gopal from Asian Paints, our main sponsor, who has been silently supporting us throughout. I extend a warm welcome to all SONA members and friends.

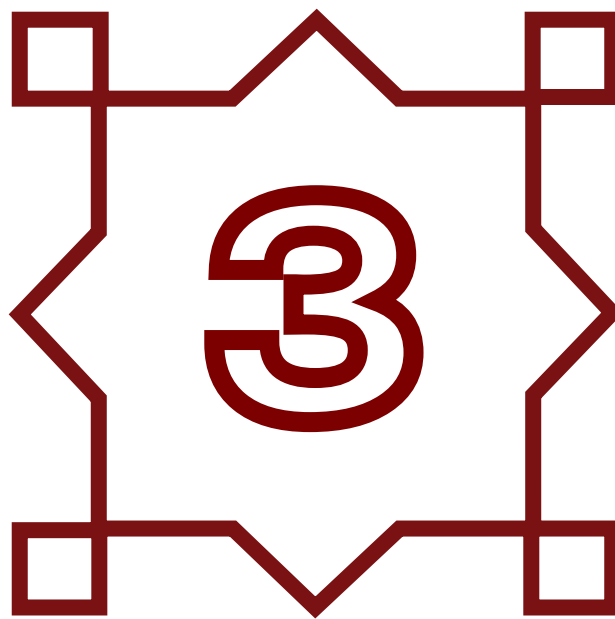


Contemporary architecture needs to be in harmony with the environment. We, as architects, planners, and engineers, need to work closely to ensure that our designs and materials complement the environment. Ar. Madhav Raman's presentation on Akhada reiterated the importance of this approach. We need to focus on the areas where we can make a difference and ensure that we do not deviate from reality. Dr. Baburam Bhattarai rightly pointed out that Kathmandu is losing its identity due to the dull concrete structures. We have many world heritage sites in the valley, and it is our responsibility to ensure their preservation. We can learn from Le Corbusier's vision for the city in his 'Ville Contemporaine', and the success of Chandigarh as an example of good urban planning. We need collective effort to make our cities livable, and we have to consider various aspects, such as climate, as highlighted by the chief guest. I would like to thank ARCASIA for organizing three round tables on professional practice, green and sustainable architecture, and young architects. We have representatives from nearly 13 countries attending the Convention and ARCASIA meetings. I am delighted that we had the presence of the Chairman of SARCH, and the UIA President and ARCASIA President at the coordination meeting with all the committee heads. We have also taken the opportunity to revive SARCH, a committee of architects from the South region. Finally, I would like to express my gratitude by presenting a token of appreciation to all of you for spending your valuable time with us.

Ar. Rajesh Thapa

Conference Chair | President, 14th Executive Committee
Society of Nepalese Architects (SONA)

Thursday, January 19 2023



INTRODUCTION TO THE THEME



The Keynote Speaker

Ar. Madhav Raman

Architect and Urbanist

Principal and Co-founder: Anagram Architects, New Delhi, India

Madhav Raman is an architect and urbanist. He co-founded an architectural practice in partnership with Vaibhav Dimri after they graduated from the School of Planning and Architecture Delhi in 2001. Formally established in 2004, Anagram Architects is internationally recognised as amongst the top emerging practices in the world with a commitment towards delivering deeply contextual designs that encourage sustainable lifestyles.

Over the years the practice has garnered much international acclaim including a nomination for the Aga Khan Award 2010 and inclusion in the Wallpaper Magazine's "Architects Directory 2009". Its work has been premiated at the Architectural Review's World Emerging Architecture Awards 2007, the Cityscape Architectural Awards 2008, 2010 & 2016, the Wienerberger Brick Awards 2010, the SAIE Bologna 2010, 2011 and 2012, the Holcim Award for Sustainable Construction 2011, Asia Pacific Design Awards 2012, the International Design and Architecture Awards 2013, the Institute of Indian Interior Designers Awards National Winner 2017 and the Indipool India's Best Design Studio Award 2017.*

Thursday, January 19 2023

When I started college in the 90s, the world was different and more cooperative. The EU, CIS, the Soviet Republic, SAARC, G20, etc. it was the period of increasing information where people got access to cable TV, cellphones, and the internet. There was growing multilateralism instead of unilateralism where ecology and outer space played a vital role for humanity. But today we are post globalised, hyper connected, and climate affected meaning, in Southern Asia we find that National interest bridges the global interest. So, the nationalism that has emerged in every country which has access to trade corridors are cultural nationalism, economic nationalism and most importantly resource nationalism. We have started living in cocoons creating more public spaces than public spaces which means bubbles are formed across the income groups where they tend to stay within those. Even though we have hyper connected through the internet we hesitate to talk to different people, instead socialise with similar people to ourselves. Similarly, the internet hotspots are allowed to be used only by the people using the cafe. There are examples of ecological breakdown which includes pulling things out from the ground, burning it, creating atmospheric pollution which creates mayhem in the hydrosphere, eventually creating large biodiversity loss due to the climatic catastrophe.

Architecture on the other hand has always wanted to be global, hi-tech and sociable. But it has always become urban and iconic. But that doesn't seem to match the way we are urbanising. If we look closely, it seems to be deruralization rather than urbanisation which is not satisfactory as it is deruralization by exodus. People tend to leave their houses out of desperation not out of opportunity forming ethnic refugees, climatic refugees, and livelihood refugees. But the idea or mental state of being urban is no longer restricted to physical state, because of cell phones and mobile networks. Today urbanism is not flowing through the roads and infrastructure but through mobile phones and access to data.

Deep down, to Southern Asia being one of the most populated regions of the world of today and in it we shall compare the population of India and Nepal in the past 20 years and where it is projected in the next 20 years. According to the data there has been an exponential rise in the Indian population but the contribution to the global contribution to the global population is almost the same. On the other hand Nepal has a smaller population but the proportionate rise is extremely large for the existing size. But still it is not an insignificant contributor to the global population which is exclusive to the diaspora. So, where are these people going to live? Where have they been living? The two pictures shown belong to Kathmandu and New Delhi respectively which are difficult to recognize at a blink of an eye. Even if we look closely, there does not seem to be any border between cities, villages, wilderness, settled human habitat, but it is just a sprawl. So, I forwardly argue that Asian cities are the future cities but they are not distinct from rural development. I see them as a blur as the population is less than 10 lakhs, that work in habitation of almost all cities but not a proper city. This is the story in India. We can see that the large amount of urbanisation is lacking in us which tends to create the majority of "so called" cities. According to the data more people from fourth tier cities are moving than third tier "Blurban" phenomenon has certain characteristics that are similar to other cities of South Asia. only 25%-30% of land area of cities are under the masterplan

formally, 70%-75% are informal which are on the fringe and struggle for access of basic infrastructure, remaining is the shrinking hinterland where the wilderness is away from these cities. The characteristics are fringe frothing meaning the maximum growth happens along the edges of the city which is usually informal. It involves cities eating up villages also called “rural kettling” where the villages are stuck in the middle of gridiron of roads without access to basic infrastructure popularly known as urban villages in Delhi.

While the appliances that we use are the same, the super rich have low carbon footprint appliances, where the poor have to use inefficient equipment. The appliances of heating, cooling, gas are all the same but the footprints are very different giving rise to heat islands leading to ecological disasters.

So “How do you build for the blurban?”. Building for the blurban walls three basic principles. The first is, we have to build for diversity which includes as many types of people as you can. The planners, architects, engineers must build for the streets, neighbourhoods instead of architecture. As every building is the contributor to the urbanscape, rather than asking what the roads and city infrastructure are doing for your building. The second is to diffuse supplies. The centralised system of supply and consumption is outdated. They are maximum decentralised and distributed therefore, energy, water, food must be coming from local sources. In order to escape from climatic catastrophe, we must build reservoirs for water, energy as well as culture. However we imagine ourselves protecting our assets and also think about the material after the end of construction. We should stop thinking, building as a special activity. Any human being should be able to build. We all used to build many centuries ago and that ability has now become so specialised that we struggle to provide the service to the entire population. Along these three principles there is one project which is about building at borders. As our villages, and small towns become cities, borders and boundaries become the point of conflict between the urban and rural, formal and informal, legal and illegal. Another is about building impermanently, meaning some of us will think our building will outlive us which often does not happen because of natural and artificial reasons. Perhaps architecture must understand what it means to be temporary rather than being permanent. At the same time, we must build in a way that technology transfers where we don't have to be the traders but are the conduit of the technology.

Let's start with this first building which is the Southern Asian Human Rights Documentation centre, Delhi, India. It lies beside the formal city of Delhi with an urban village which is 750 years old called Humayunpur. Humayunpur now exists as a slum. The residents of safdarjung enclave resent the slum, so they have all built boundaries. In our 50 square metre small footprint we decided to reflect on the animation of the street that divides the two parts which also became an inspiration to the brick system that also helped for the protection of the building against solar heat gain. In 2018, we designed a pavilion at Kochi Biennale, which is a temporary structure which is meant to last only three months but has a high performance with the environment. Basically, it is an auditorium, art, cinema, screening with sound system and air conditioning and so on. We designed it at a place called Cabral Yard, Kochi, Kerala, India. The idea was to look at the canopy of a tree and imagine the structure as being part

of that landscape. We worked with local bamboo craftsmen and steel fabricators within two months. This project was unique as it was designed for disassembly so that it can be pulled apart because after three months we wanted to leave the site without any evidence having been there. So the design included having shallow foundations using concrete rings that can be removed, similarly thatched retaining walls, and marrying the bamboo structure to the steel structure. Lastly, the project that I am going to end with is a Gymnasium in Northern India known as Malakpur. In this area, the people are culturally attached to the land like in Terai region of Nepal. This place is famous for producing farmers as well as medal winning wrestlers. As there were no gymnasium providing mats for the wrestlers because of which the kids started moving to the city which distracted the wrestling culture in the village. To avoid this they asked us to build a gymnasium “khada” where mats could be used and have the ability to do it in international style wrestling. In this project we intend to detail it with a rammed earth and brick work at a very basic level. In Indian wrestling there is a culture of preparing the ground which is done as a form of wrestling exercise. So, our idea is to use the same wrestlers to build the gymnasium themselves and once they win the medal they return back they can build one their own experience and basic industrial guidance without our guidance as well.



A presentation by Ar. Madhav Raman titled 'Blurban Phenomena'

01

Panel Discussion: Role of Architecture in the Creation of Identity of Contemporary Cities

Session Moderator: Ar. Jagdish Pokhrel

The discussion explored the architects' role in shaping the identity of cities and their impact on global, macro, political, technological, and organizational forces. Ar. Kishor Thapa, former Secretary of Government of Nepal's Ministry of Urban Development, shared his experience dealing with three major forces that can impact city planning and design - political, market, and social forces. He stated that as a senior government bureaucrat, his role was to manage the processes of city development, allocate budgets, formulate policies and programs, and balance these forces to create an average of what is desired. Architects are not solely responsible for city planning and design, but should focus on creating aesthetically beautiful buildings, landmarks, structures, and a good visual ambience of the city, while other stakeholders such as urban planners, social planners, and economic planners should do their jobs in other areas.

Ar. Tan Pei Ing, Secretary General of UIA, discussed what an ideal city should look like and the role architects play in designing such a city. According to her, a city that reflects its culture, heritage, and the way of life in place making is an ideal city. Contemporary architecture should truly reflect the culture, heritage, and the way of life of a community, not just being a modern or quiet contemporary architecture. Architects have a big role to play in urban planning and should engage with stakeholders and the public to identify the city's true identity. When designing, architects must consider contextual factors such as climate, health, and wellbeing to ensure a sustainable city. In order to achieve such a city, architects need to work closely with government and policy makers and engage in public consultation. Being part of international professional organizations provides architects with a platform to push for changes in policies and trends collectively. Ar. Ishtiaque Zahir Titas, Vice-President of UIA from region-IV, discussed his thoughts on what he expects from a city he can identify with and what his ideal city would be like. Titas emphasized the importance of open spaces, the role of architects in making and identifying cities, and the need to unlearn modern era influences in order to maintain a city's identity. He suggested that engaging people in the process and learning local things are ways to combat economic challenges and create better cities.

During the panel discussion, the issue of lack of public participation and ownership towards cities, and the consequent loss of identity of Kathmandu was raised. Ar. Tan shared that in Malaysia, the power of legislation ensures that there is public consultation for any development project, as it is a mandatory part of the planning and approval process. He also

emphasized the importance of education and training from a young age to instill a sense of responsibility towards the environment and sustainability, which should be a fundamental aspect of all architectural design and planning. Ar. Tan suggested that legislation changes should be pushed to make public consultation an automatic process rather than relying on individual will power. The panel also discussed the need to relocate our values and prioritize sustainability over market demand and political pressure.

Ar. Madhav Raman discussed the challenges faced by cities in South Asia due to bureaucratic and market forces. He argued that the power structure is still influenced by colonial laws, and elected representatives are often corrupted by market forces, leading to a lack of ownership of the city by its residents. He emphasized the need to design for impermanence to enable a transition to a culturally acceptable identity and to create a sense of identity in a changing urban landscape. He also stressed the importance of empowerment at the local level and planning at a local level rather than relying on centralized systems.

The question to Ar. Kishore Thapa was about the importance of balancing social, cultural, and economic development in cities, instead of just focusing on physical development. The question also asked if Ar. Thapa tried to change this traditional focus during his tenure. Ar. Thapa acknowledged that Nepal's urban planning has been mostly focused on physical infrastructure and has neglected social, cultural, and environmental aspects. He emphasized the importance of unlearning past mistakes and focusing on people's lifestyles, expectations, and the impact of global warming, climate change, and natural disasters. Ar. Thapa believed that Asia, specifically Nepal, can learn from its prosperous past and shift the power back from west to east. He also emphasized the importance of local community empowerment in field of urban planning and the need to urbanize people in urban areas.

Ar. Dip Pandey asked Ar. Ishtiaque Zahir Titas to give an example of a contemporary city where the space between buildings has been focused on instead of just the buildings themselves. Ar. Ishtiaque Zahir Titas explained that when he talked about space in between, he meant open space, and it exists in Bhaktapur and many European cities. He believes that designing open spaces can catalyze urban regeneration, create socially and culturally inclusive spaces, and combat inequalities in challenging cities. He gave an example of Mani Dixit's cafe in Bangladesh, where every inch of space between the buildings has been designed to be used and enjoyed by people. Ar. Ishtiaque Zahir Titas also emphasized the importance of public engagement, co-creation, co-design, and co-finance for new city solutions, and the need to engage stakeholders during the planning and implementation process. Ar. Sonam Lama asked about the role and forces of education in shaping the identity of a city. Ar. Dibya Bush expressed the need to focus on basic education and let children develop their own skills and research to build a better society. Ar. Bijaya Shrestha stated that architecture is the first order design while urban design and planning are the second order design, but the latter is not well defined in their context and needs to be synchronized with the former.

Panel Discussion: Role of Architecture in the Creation of Identity of Contemporary Cities

Session Moderator



Dr. Jagdish C. Pokhrel

Dr. Jagdish Chandra Pokharel is the former Vice-Chairman of the National Planning Commission of Nepal. He has a Master's degree in Urban and Regional Planning from the University of Hawaii, Manoa, a Ph.D in Regional Planning from the Massachusetts Institute of Technology (MIT), Cambridge USA and a B. Arch, from University of Thessaloniki, Greece. He has nearly 35 years of experience in the field of urban and Regional Planning, Urban Economics and Development Studies.

Dr. has published a book in 1996 with the title, "Environmental Resources Negotiation Between Unequal Powers" that elaborates on the bargaining leverages that weak nations can bring in when they are engaged in negotiation with more powerful countries. He has written numerous seminar papers and news-paper articles. Understanding the role of power in planning and policy making is his research interest.



Participant 1

Ar. Madhav Raman

Madhav Raman is an architect and urbanist. He co-founded an architectural practice in partnership with Vaibhav Dimri after they graduated from the School of Planning and Architecture Delhi in 2001. Formally established in 2004, Anagram Architects is internationally recognised as amongst the top emerging practices in the world with a commitment towards delivering deeply contextual designs that encourage sustainable lifestyles.

Over the years the practice has garnered much international acclaim including a nomination for the Aga Khan Award 2010 and inclusion in the Wallpaper* Magazine's "Architects Directory 2009".



Participant 2

Ar. Kishore Thapa



Ar. Kishore Thapa is the director of Nepal Institute of Urban and Regional Studies (NIURS). He is a former secretary of the government of Nepal. He has Bachelors of Architecture degree from Calcutta University, India and Master's degree in Urban Planning with specialization in housing from the School of Planning and Architecture (SPA), New Delhi, India. He has served in various capacities in different government institutions as architect, urban planner, project director and secretary of various ministries. His field of expertise is architecture, housing and urban development. He is former present of SONA and former secretary at MoUD. He is currently the president of SAARCH.

Participant 3

Ar. Pei Ing Tan



The first female President of the Malaysian Institute of Architects (PAM), Pei Ing Tan also served as President and is currently an advisor of the Architects Regional Council of Asia (ARCASIA). She is also a Member of the Board of Architects Malaysia as well as the Australian Institute of Architects National Committee on Gender Equity (2020-2021) in addition to being an International Chapter Council member. Ms. Tan has served the UIA in various capacities such as Region IV Council member as well as being a member of the Professional Practice Commission and International Women in Architecture committee. Ms. Tan is a strong advocate for social responsibility, diversity, equity and inclusion as well as climate resilience. She was conferred with Honorary and Fellow membership from AIA, KIRA, RAIA, FCARM and MIID and received a number of prestigious awards, such as: The CIDB MCEIA 'Construction Lead-

ing Lady award 2015; Distinguished Australian Alumni Award 2016; Board of Architects Malaysia President's Award 2017; Malaysian Institute of Architects Gold Medal for Service 2019.

Participant 4

Dr. Ishtiaque Zahir Titas



Ishtiaque Zahir Titas, a practicing architect from Bangladesh, is the 1st Vice president and the Board member of the International Union of Architects (UIA) from Region IV. He is the fellow of IAB, also the Honorary fellow of the American Institute of Architects (AIA). He is the Co-founder of the architecture practice VITTI. His architecture & urban design practice won national and international recognition in the last 3 decades. Designing sustainability through participatory process and designing public spaces are his key point of interest. He believes that sustainability should be the core of all development works and architecture should focus more on research and innovation. He is the current adviser of UIA SDG Commission and former Co-chair of PCG Professionals World Urban Campaign WUC, an initiative of UN Habitat.

01

Presentation Session: Introductory Presentation Session

Session Chair: Ar. Saifuddin Ahmed

The session led by Ar. Saifuddin Ahmed delved into the concept of contemporary cities, particularly in the context of Asian cities. As cities around the world continue to urbanize and modernize, the definition of a contemporary city has become a pressing issue. Many Asian cities are struggling to maintain their unique identity and values while keeping up with modernization. The session aimed to address this dilemma and explore ways to identify contemporary cities.

Ar. Saifuddin Ahmed emphasized the importance of considering Asian values when designing and developing modern cities. While cities like Islamabad, Canberra, Brasilia, and Putrajaya were designed with their own identities as capital cities, it is essential to question what makes a city contemporary. The session sought to explore how cities evolve while still retaining their unique identities.

Ar. Manoj Datta spoke about the role of architects in creating a city's identity. Ar. Kiran Mathema discussed imaging cities through equitable mobility. Ar. Bijaya K. Shrestha presented a case study on strategic spatial planning for the capital city of Lumbini Province, Dang, Nepal.

Following the presentations, Ar. Saifuddin Ahmed summed up the key takeaways from the session. He emphasized the need to prioritize people's happiness in city design and to promote public transportation while reducing private transportation. He also stressed the importance of mobility, as highlighted by Ar. Kiran and balancing economic, environmental, and social factors while planning and designing contemporary cities.

Overall, the session provided valuable insights into the challenges and opportunities in creating contemporary cities that reflect their unique identities and values while meeting the needs of their residents. The presentations emphasized the critical role of architects, mobility, and strategic spatial planning in creating cities that prioritize happiness, equity, and sustainability.

Session Chair

Ar. Saifuddin Ahmed



Diploma in Architecture (1980, University Teknologi Malaysia) Bachelor of Architecture (1983, Deakin University, Australia) Saifuddin Architect (Principal) SNO ARCHITECTS SDN BHD (Managing Director).

Ar Saifuddin is a fellow of Pertubuhan Akitek Malaysia, Registered Asean Architect, APEC Architect and Honorary Member of Australian Institute of Architects, Association of Siamese Architects by Royal Patronage, Council Member (Alternate) Region IV the International Union of Architects (UIA) (2017- 2021), Vice President Zone B Arcasia (2019-2021), ARCASIA President-Elect (2022-2023) Past President on Council of Pertubuhan Akitek Malaysia (2015-2022), President (2011-2013). Ar Saifuddin is a member of the Board of Directors Mass Rapid Transit Corporation Sdn Bhd since February 2021. He is a Chairman of its subsidiary Lingkaran MRT Sdn Bhd. Ar Saifuddin was a member of the Board of University Directors at Universiti Malaya from 2011 to 2022.

Presenter 1

Ar. Kiran Mathema



Kiran is an internationally recognized, award winning architect and urban planner whose practice, teaching and research have engaged the cities of Washington DC, Istanbul, New York, Houston, Dresden, Kathmandu, Singapore, Qingdao, Rio de Janeiro, Hanoi and Shanghai. With design experience spanning over two decades, Kiran brings a distinct cross-disciplinary expertise in the fields of regional/urban planning, architecture, landscape design and public infrastructure. One of his key focuses is sustainable cities where he has been retained by both the public and private institutions in developing transit-oriented developments. The common thread that ties his wide range of work is his ecologically sensitive approach, and the rigor with which he designs projects to smallest details. His revolutionary design solutions are based on evolutionary and inclusive process. Divergent goals and interests are integrated to identify unique opportunities – eventually resulting in designs that are distinct and striking. Spirit of inquiry, challenging preconceptions

and testing conventions sets apart all his work. In addition to his professional practice, Kiran continues to be involved in academia. He served as lecturer, and visiting faculty, for numerous graduate and undergraduate programs.

Presenter 2

Ar. Manoj Dutta



Manoj Dutta graduated in 1970 with a degree in architecture from the Indian Institute of Technology in Kharagpur. Since 1971, he has worked in a variety of positions in both the commercial and public sectors in India, Tanzania, Iraq, Zambia, Zimbabwe, and Botswana, ranging from architectural assistant to principal architect and manager technical. Additionally, Intercontinental Consultants and Technocrats (ICT), Delhi employed him as an external consultant in Nepal, Puntland, and Lesotho. He worked on projects involving international airport terminals, group housing, bank buildings, senior secondary schools and their renovation, vehicle testing centres, road border posts, district hospitals, public offices, revenue offices, small university complexes, executive house designs, the campus of the Road Training Center, the renovation of State House (the house of the State President), and the campus of the National Health

Institute, which includes an administrative building, library block, and classrooms. He is a member of the Council of Architects, a life member of the Indian Institute of Architects, and a member of the Royal Institute of British Architects (RIBA). Additionally, he is a member of the Botswana Association of Architects, the South African Institute of Architects, the Zambia Institute of Architects, and the South African Institute of Arbitrators as an Associate Member.

Presenter 3

Dr. Bijaya Krishna Shrestha



Dr. Bijay Krishna Shrestha is an accomplished urban designer with extensive experience in the field of architecture and urban development. He pursued his Bachelor's degree in Architecture from the Indian Institute of Technology, Roorkee. He furthered his education and obtained a Master's degree in Urban Design from the University of Hong Kong, where he again secured the first position in the program. He later completed his Doctor of Engineering in Urban Design and Development from the University of Tokyo.

After completing his education, Dr. Shrestha began his professional career as a researcher at the United Nations Centre for Regional Development (UNCRD) in Kobe, Hyogo, Japan. After his time at UNCRD, Dr. Shrestha returned to Nepal and worked as a Manager at the Town Development Fund. In 2016, Dr. Shrestha joined UN-HABITAT, Kathmandu, Nepal, as a Coordinator of the Open Space Management Program.

IMAGING CITIES THROUGH EQUITABLE MOBILITY

oKiran Mathema*

Abstract

More than half the world live in Cities now. This trend is expected to continue, with the urban population more than doubling its current size in the next 30 years. In the process of rapid urbanization, have cities in developing economies lost more than what they have gained? Continuous depletion of open spaces, destruction of cultural heritage, degradation of ecology among others contributing to soulless masses of concrete jungle where its inhabitants suffer from pollution, overcrowding and diseases on one hand and isolation, exclusion, and lack of identity on the other. There are ways to build cities that balance the economic, environmental, cultural, and social needs at the same time. Among many tools, this presentation focuses on 'land use' and 'equitable transportation' nexus a.k.a. Mobility Oriented Development (MOD). Through examples and benchmarks from across the world, the 3 D(s) of MOD: Design (form and imageability), Diversity (range of land uses) and Density (compactness and Floor Area Ratios) will be explored, giving architects and planners the necessary tools to reimagine, restructure and repurpose the 'concrete jungles' into a dynamic, sustainable, and most importantly livable environs with sense of identity.

IDENTITY OF THE CONTEMPORARY CITY

Architect's Role; Ekistic

○Manoj Datta*

Abstract

Cities have a feel and identity of its own. It may be its magnificent buildings, green areas, open spaces, pedestrian friendly transport system, extensive use of ICT, architectural heritage tourism significance etc. There is something unique about each city which makes it great. It can be defined as a permanent and densely settlement with administratively defined boundaries whose members work primarily on non-agricultural tasks. Cities generally have extensive systems for housing, transportation, sanitation, utilities, land use, production of goods, and communication. A city-region's identity is its DNA: a unique, inherited collection of assets, history, traits, and culture that distinguishes it internally and externally, and has the potential to unite people and place. Happiness; Resilience; Settlement; Interconnectivity; Size; Quality are some of the parameters that distinguishes one city from the other.

Ekistics is the science of Human Settlement and its understanding is essential for creating cities of the future. This science takes into consideration the principles that man takes into account when building his settlements and evolution of human settlements through history related to its size and quality. A Happy and Resilient settlements are vital principles that are looked into this submission. Such a settlement is found to be productive and possesses the capability to absorb and prepare for economic, environmental, social and institutional future shocks. Human happiness and its resilience play vital roles in the growth and development of a settlement. Ensuring functional and spatial interconnectivity is very critical in achieving a successful settlement. Efficiencies of cities are measured with respect to economics only with little reference to Happiness and Resilience. The importance of Happiness and Resilience are often overlooked. The submission highlights the issues related to Happiness and Resilience where architects play important roles.

1. Introduction

More people will move to Cities (urban Settlements) in the next 40 years than in the entire human history. Unprecedented urban boom seems to have the strongest effect so far. Speaking positively, such a boom has potential for employment opportunities and break ground for innovation and technology amongst other factors.

Advent of industrial era brought in differentiations in the living, working and recreational activities in the inhabitants of the settlements for the sake of "efficiency" on the basis of which the growth is measured. In almost all instances growth is measured by "Economics" and not by "Happiness" and "Resilience". The last two are the Identities of the Contemporary City.

Contemporary and emerging cities are urban laboratories for testing new business models, state of the art technologies and lifestyles of the future that are happy and resilient. Some such business models are:

i. **Public Private Partnership (PPP)** where well designed partnerships offer to address conflict areas like:

- Developing land to maximize profit at the expense of provision of public space
- Targeting high income populations at the expense of having affordable settlements
- Citizen participation in City Management

There are immense potentials in this PPP model. Such as:

- Ensuring a clear and fully focused vision is laid out at the onset
- Involving national, regional and local authorities early in the planning process and maintain support throughout construction and implementation stages
- To ensure that viable interests of all sectors are addressed
- Separating operations and City building from issues related to purely political interference while respecting their roles.

ii. **Roles of Technology and Design** Building identity and sense of Community in emerging meaning designs and developments should be purely people centric.

- Is it possible to have bold and futuristic urban vision reconciled with industry needs and emerge as thriving settlements?
- How can technology help in creating Happy Cities?
- Extent of the Planned Urban growth?

Some thoughts for achieving the above goals are:

- Inclusive vision to include explicitly designed compact city
- Encourage density and proximity oriented developments by applying effective regulatory tools / measures, appropriate locations and synchronization of Urban and Rural land use.
- Enhance quality of life. Promote walking and cycling
- Minimise adverse negative effects like congestion, unaffordable housing, less of public space greening of built up areas.

iii. **Life styles** include use of nature, respect architectural tradition, culture, light, water etc to make a place memorable. The vision must include all inhabitants and not only elite. To ensure cities are walk able and aim for happiness.

The world is yet to recover fully from the global economic crisis where competitive cities offer the promise of resilient innovative economies that can reinvent themselves, create value, drive new markets and respond to future need. Economic output alone does not suffice requirements of competitive cities. Social and environmental features like happiness can bring together various components that constitute a City.

People oriented cities is not about the gadgets, the buildings, the transportation and the infrastructures it's about the spaces in between it is about how we create the public experience- streets, squares, parks urban water etc. Smart city concept also addresses these issues amongst others.

Key Words: Ekistics; Happiness; Resilience; Settlement; Interconnectivity; Size; Quality

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Architects play vital role in manifesting all the above business models

The submission intends mainly to dwell upon

- A. Ekistics - Science of Human Settlements
- B. Happy City Principles and
- C. Resilience of Cities

A. Ekistics

A science of Human Settlement is essential for creating cities of the future is Ekistics. It takes into consideration

- (i) The principles that man takes into account when building his settlements
- (ii) Evolution of human settlements through history related to its size and quality.

The idea is to have a City of optimum size that respects human dimensions. As we are unable to resist development we must therefore try to use technological evolution and needs of man within the same settlement. The entire range of Human settlements is a very intricate system comprising of following **five** elements –

- nature,
- man,
- society,
- buildings (shells) and
- networks.

And such a system can be seen in many ways –

- economical,
- social,
- political,
- technological and
- cultural.

Thus there is a need for science dealing with Human Settlement to understand and view them in a reasonable way. There are two examples to show that such a science is possible and is in existence, though may be dormant at times.

Example 1 – Vitruvius in ancient Greece written down the science and practiced it. Otherwise how people have created such cities that are still admired?

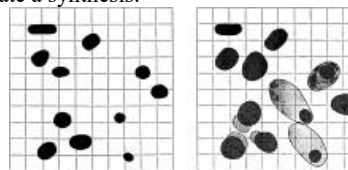
Example 2 – Man obeyed general principles and laws that are an extension of their biological characteristics, thus we could be dealing with biology of larger systems.

To achieve the essential knowledge and develop Ekistics we must move from interdisciplinary to condisciplinary science, making mere links between disciplines is not enough.

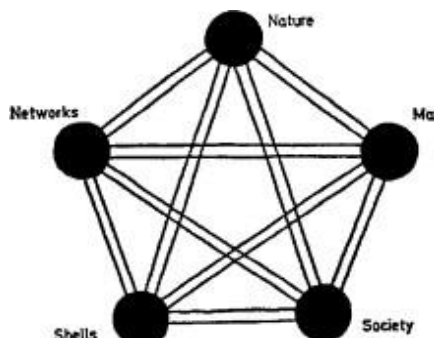
The Principles – Man always acted in obedience to **Five** following principles to shape the settlements:

1. Maximisation of man's potential contacts with the elements of nature (eg water and trees), with other people and with manmade works (eg. Buildings and roads)
2. Minimisation of the effort required for the achievement of man's actual and potential contacts. Select routes, shape and structures that require minimum effort.
3. Optimisation of man's protective space meaning the selection of such a distance from other person, animals or objects that he can keep his contact with them (1 above) without any sort of psychological or sensory discomfort.
4. Optimisation of the quality of man's relationship with his environment like nature, society, shells and networks (ranging from roads to telecommunications)

Man organizes his settlements in an attempt to achieve an optimum synthesis of the above four principles. The optimization is dependent on time and space, on actual conditions and ones ability to create a synthesis.



Static – group of people | Same group as given by as in plans energy measurements



Optimisation of the Quality of Man;s relationship with his environment, (Principle 4)

Extent of Human Settlement is defined by only one consideration and that is – the distance man wants to go or can go in the course of his daily life. The shortest of the two distances defines the extent of the real human settlement.

Quality of Human Settlements can be made in several ways in terms of the relation of every individual to his environment like nature, society, shells, and networks and the benefit that we derive from these contacts. We can measure his relation to

- (a) Air and its quality,
- (b) Water in his home, in the river and in the lake and at sea (both quality and access to them),
- (c) Land resources (their beauty and accessibility) and
- (d) Recreational and functional facilities provided.

The issue now is to know if we can do anything to ameliorate conditions in cities where condition is not high. The probable answer is that man has often faced such questions by giving his static settlements a proper structure. Beijing is probably the only no.1 settlement created before the 17th Century. This structure led to the shape and forms of the cities we admire today. It is time to see how the transformations came about, it is time we examined the morphogenesis of Human Settlements.

Two Myths

1 .Question arises that if we can analyze the quality problem and appreciate morphogenetic process which should enable people to build properly and improve undesirable situation, then why conditions are so poor in our cities. The fact is that though some problems are not related to the physical structure of the City they can be attributed along the following:

- It is not true that forces and laws that work in small units of settlements are valid for the big ones also
- New forces – motor cars have entered the game and their impact on the city has not been understood well
- We have neither learnt about the new problems nor seem to be interested in them before it becomes critical. We became

more confused to the point of mistaking poverty for an Urban Problem, whereas it is a huge human problem that becomes more apparent in the urban areas because of the proximity of the rich, who have not been previously exposed to poverty of the poor.

2. Optimum city size is a myth. But a city can be divided into physical units of optimum size and may be used as a basis for planning that envisions an optimum number of inhabitants in a settlement. Our cities are continuously growing, they need a development policy leading to a Master Plan Program which is expressed in space, by physical development plans supported by economic, social, political, administrative, technological and aesthetic programs.

The IDEA (Isolation of Dimensions and Elimination of Alternatives) method can eliminate the weakest proposal and minimize errors based on mistaken belief that “I know”. Its application to the very difficult problem of The Urban Detroit Area has demonstrated its usefulness.

If we can develop a science of Human Settlements by recognising the guiding principles of laws and procedures of man’s action related to terrestrial spaces we can achieve a much better settlements. This can be done by synthesizing considering lessons from past, with new frame formed on the basis of the new forces that are in the game. At the same time, the guiding principle of real freedom of choice for all can be implemented for the benefit of everyone and become a better place to live and of importance and a matter of pride for the inhabitants.

B. Happiness

“The purpose of our lives is to be Happy” Dalai Lama

When Montgomery first talked about human happiness people laughed at him. Domiguez explained “Happiness is kind of an out – there concept for some people”. A Canadian organization named after Montgomery makes the case for retrofitting cities for happiness and argues that streets, parks, shopping centers housing complexes and most of urban infrastructure can be designed to make people feel happier, behave better and kinder.

“If we give a damn about human well beings in cities, we need to study the emotional effects of spaces and systems” says Montgomery. “We need to use evidence to help fix the horrific mistakes we’ve made over the last century”. Evidences can be obtained from psychology, neuroscience, public health and behavioral economic.

Eg. Hospital patients who can see trees through their bedside windows feel better and heal faster than those who only see brick walls; commuters at rush hours suffer more anxiety than pilots if fighter planes or riot police combating angry mobs. Friendliest front gardens are precisely 3.0 meter deep.

People feel nicer to each other when they move slowly and have time to make eye contact. For a community of 8,000 inhabitants in Punawala happiness interventions were

- a) Breaking up of imposing superblocks
- b) Investing in quiet streets that are safe and friendly for pedestrians and creating a village heart to which residents could walk and shop.

In a city like Mexico where the key concern is safety the best intervention is to generate a trust and calm by design. It is found that “Building healthier, happier places is not more expensive. In fact, these places save society money in the long run”.

People are more resilient and more productive when they are socially connected. Social interaction also found to foster greater levels of creativity and trust that contribute to better GDP growth.

Six steps that make Cities Healthier and Happier are:

1. **Go Green** – It should form an important part of any urban ecosystem. It helps to reduce aggressive behaviors, provide clean air and in turn improve a person’s sense of wellbeing even when seen from the home.
2. **Child friendly Cities** – Today children do not spend half as much time playing outdoor as their parents as cities are not welcoming kids any more. Providing playgrounds are not enough. In Hamilton, Canada policy makers provided camera to young ones to photograph where they wanted to play and suggest how spaces could change to accommodate them.



3. **Listen to women** – Urban planning is male dominated. In UK about 60% of women feel unsafe in urban public spaces compared to rural towns. A study in Vienna revealed just how differently women use urban space and public transport. Women drop kids at school, do grocery shopping caring for relatives and working and use more mixed mode of transport do more walking than their male counterparts who only travelled to work and back home. Vienna widened pavements to accommodate buggies, expanded public transport networks and ramps for push chairs etc.



4. **Mind and Matter** – Studies show that urban dwellers are at significantly increased risk of depression, anxiety and schizophrenia. The spaces in which we live also play a significant role in contributing to stress level and unease like loneliness. In Melbourne, kindergartens are integrated into nursing homes and senior homes. In Colorado public confession booths are built to vent out their worries while moving throughout the city.
5. **Designing –out crime** – Perception of high crime levels increase the risk of depression and poor mental condition. Improving street lights, improving transport links from night clubs reduced the buildup of drunk partygoers and minimize risk of street fights.
6. **Active living** – Many large cities are not conducive to an active life. Due to uncontrolled air pollution there are very limited spaces in which to do exercise, like jogging, walking etc.

Architecture has an important role in achieving Human Happiness. When thinking about happiness in Architecture there are following key elements that can affect how people experience spaces and how their emotions will be tapped. These are:

FREEDOM – gives people the freedom to choose their experiences as they like to feel that they have control over what steps they take in their life, where they go, what they do, how they do etc.

UNEXPECTED – Elements that surprise people. They change the status quo of the architecture that surrounds them.

COMFORT – A person needs to feel a certain level of comfort and safety in order to stay in the place.

NATURE – Direct exposure to nature improves happiness / productivity

INTIMACY & INTERACTION- People need moments to be alone, moments of reflection. Yet as Humans are social beings and our happiness depends on the quality of our relationships with each other. Our interaction with others influences our well beings.

In addition to the above Organisation for Economic Co-operation and Development's (OECD) findings are the following:

- a) Strong evidences reveal that the places and systems we build has effect on the way the inhabitants of the settlements move, live and feel leading the way they treat each other. Urban design principles has the potential to reinforce Happiness for all. There are objective ways to measure how people feel. The issue is how to incorporate Happiness into the policies and translated into design principles in Urban Design. Following are some basics:
 - Feel more Joy than Pain
 - Feel secure
 - It is important to thrive – wealth matters, but it does not suffice
 - Community feeling
 - To have a sense of meaning in life
 - Must have social connections
- b) Subsequently, it is found that longevity of connected people is upto 15 years longer than their counterparts who are less connected and likely to suffer heart ailments and cancer etc. Therefore to invoke Happiness in the environment the Happy City is one where:
 - Neighborhoods are dense and connected
 - Mixed use environment enhances diversity
 - Short blocks with sound mobility option
 - Streets to offer interaction and face to face contact
 - Streets where activities take place
 - Trust among inhabitants enhance Happiness, productivity and overall dynamism

Cities must be **Healthy** to be a **Happy** one. Thus followings are some of the salient points for a Healthy City.

- Healthy Cities foster health and well-being through governance, empowerment and participation on, creating urban places for equity and community prosperity, and investing in people for a peaceful planet.
- Healthy Cities lead by example, tackling inequalities and promoting governance and leadership for health and well-being through innovation, knowledge sharing and city health diplomacy.
- Healthy Cities act as leaders and partners in tackling our common global public health challenges, including non-communicable diseases (NCDs), communicable diseases, environmental challenges, health inequalities, anti-microbial resistance, health emergencies and the pursuit of universal health coverage.



C. Resilient Cities

Resilient cities have the ability to absorb, recover and prepare for future shocks (economic, environmental, social & institutional). Resilient cities promote sustainable development, well-being and inclusive growth. The OECD is investigating how cities can increase their resilience.

“A **Resilient City** is one that has developed capacities to help absorb future shocks and stresses to its social, economic, and technical systems and infrastructures so as to still be able to maintain essentially the same functions, structures, systems, and identity.”

Urban resilience has conventionally been defined as the "measurable ability of any urban system, with its inhabitants, to maintain continuity through all shocks and stresses, while positively adapting and transforming towards sustainability".

Resilient cities as explained by Godschalk (2003) are cities which are capable of withstanding severe shock and stress without either immediate chaos/damage or permanent deformation or rupture. These cities acquire a certain level of resiliency as they are designed in advance to anticipate, weather, recover, and bounce back from the impacts of natural or technological hazards, The concept resilient cities are based on principles derived from past experience with disasters in urban areas. While they may bend from hazard forces, they do not break. Composed of networked social communities and lifeline systems, they are able to adapt and rebound to new levels of sustainability with minimum loss or damage.

Resilience is a New Paradigm of Smart Urban Planning.

The contemporary city often fails to cope with several urban problems such as: energy inefficiency, poor performance of services and infrastructure, non-optimal waste management, misuse of land and non-renewable resources, air and water pollution, technological risk, social segregation and low safety.

This failure is due not only to the complexity of the city, but also to political and technical difficulties in governance. Additionally, new methods of city construction, operation and systemic logic are needed to promote resilience.

The resilient city is an achievement of contemporary planning, which uses smart tools on cities and urban settlements to administrate and manage urban transformations Resilience is a concept included in the meaning of the smart city and is contemplated in the paradigm of smart planning. A smart city is a result of smart planning that has resilience as one of its main aims.

It has already been observed how the concept of resilience plays a pivotal role in strategic urban design in the Netherlands. The new paradigm of smart planning and how this concept will involve all levels of urban interventions such as national, regional, provincial and municipal authorities, architects and urban planners, firms and enterprises, citizens and communities.

All the mentioned authorities and professionals play a leading role in making a city less vulnerable; however, to pursue their common aim, it is crucial that every public and private space within a city is made available for such implementation. Hence, urban visions and strategies can be developed to achieve the creation of a more pleasant city that adapts itself to nature's transformation, creating a more pleasant environment for living.

The approach pursued would encourage resilience and flood protection through smart planning and the guidance gleaned from the architectural and urban project. Thus, considering public space as strategic soil to develop the resilient city, using engineering technical climate defense as a new space for citizens and communities.

The theme of resilience is included in all levels of government, in municipal plans and in spatial and strategic development policies, such as in some projects concerning public and private space. The urban defense structures should bring into existence new pleasant space for the city. These actions will not only contribute to the making of a more resilient city, but they will also contribute to the creation of a more pleasant and attractive urban environment.

Often, the definition of resilience is not associated with urban planning tools. Indeed, in the literatures, a gap exists between the resilience approach and resilient actions within administrative and urban governance. There is a lack of appropriate visions and strategies to enable the production of immediate effects on the main urban planning instruments for the control of urban transformations. Therefore, there is an urgent need for a scientific and pragmatic approach to the resilient city, which innovates urban planning by integrating resilience into a new and flexible smart planning tool that can manage and govern the territorial complexity. It is necessary to implement urban resilience actions that are able to mitigate natural risks by converting territorial problems into territorial resources and opportunities. Implementing a conscious and smart urban governance and undertaking urban awareness actions are fundamental. The aim is to create a community actively participating in promoting urban resilience policies and in creating a sustainable city.

The **10** points to guarantee the resilience of a city are:

1. Ensure that within the local administration a coordination structure is set up to identify and reduce the risk of disasters, based on the participation of citizen groups and on alliances with the civil society. Ensure that all sectors of the administration are aware of their role in reducing the risk of disasters and are ready to take action.
2. Allocate specific resources to reduce the risk of disasters and give economic incentives to homeowners, to low-income families, to firms and to the community investing in risk reduction.
3. Maintain an up-to-date system of data on local risks and vulnerabilities, carry out risk assessments and take them into account in plans and decisions on urban development.
4. Ensure that the information and urban resilience plans are easily accessible to the public and have been publicly discussed.
5. Invest in resilient and sustainable infrastructures that help reduce risks, ensuring maintenance and necessary adaptations to climate change.

6. Check the safety of all schools and health facilities and adjust them if necessary. Introduce and apply appropriate risk criteria in building regulations and land use planning.
7. Identify, where possible, safe land to be allocated to low-income citizens and develop regeneration programmes for unregulated settlements.
8. Ensure the implementation of risk reduction training courses and education programmes; protect ecosystems and areas that naturally act as prevention, mitigating the effects of flooding and other intense weather events to which the city is vulnerable. Adapt to climate change through effective risk reduction actions.
9. Implement local monitoring programmes concerning preventive alert systems and emergency management plans, involving citizenship.
10. After each disaster, ensure that the needs of the victims are placed at the heart of the reconstruction matter and that civil organizations and the people damaged are directly involved in the definition of solutions.

The **City Resilience Index** is helping **cities** understand and **measure** their capacity to endure, adapt and transform. People are drawn to **cities** as centers of economic activity, opportunity and innovation. As one of the UN's Sustainable Development Goals, **city resilience** is now accepted as a critical urban agenda.

4 DIMENSIONS

Research suggests that resilience of a city relates to 4 key Dimensions:

1. **Health and wellbeing Systems** that ensure the health and wellbeing of people living and working in the city.
2. **Economy and society** The social and financial systems that enable urban populations to live peacefully, and act collectively.
3. **Infrastructure and Environment** Built and natural systems that provide critical services, protect and connect urban citizens.
4. **Leadership and strategy** The need for informed, inclusive, integrated and iterative decision making in our cities.

12 GOALS

Underpinning the 4 Dimensions are 12 Goals that cities should strive towards in order to achieve resilience.

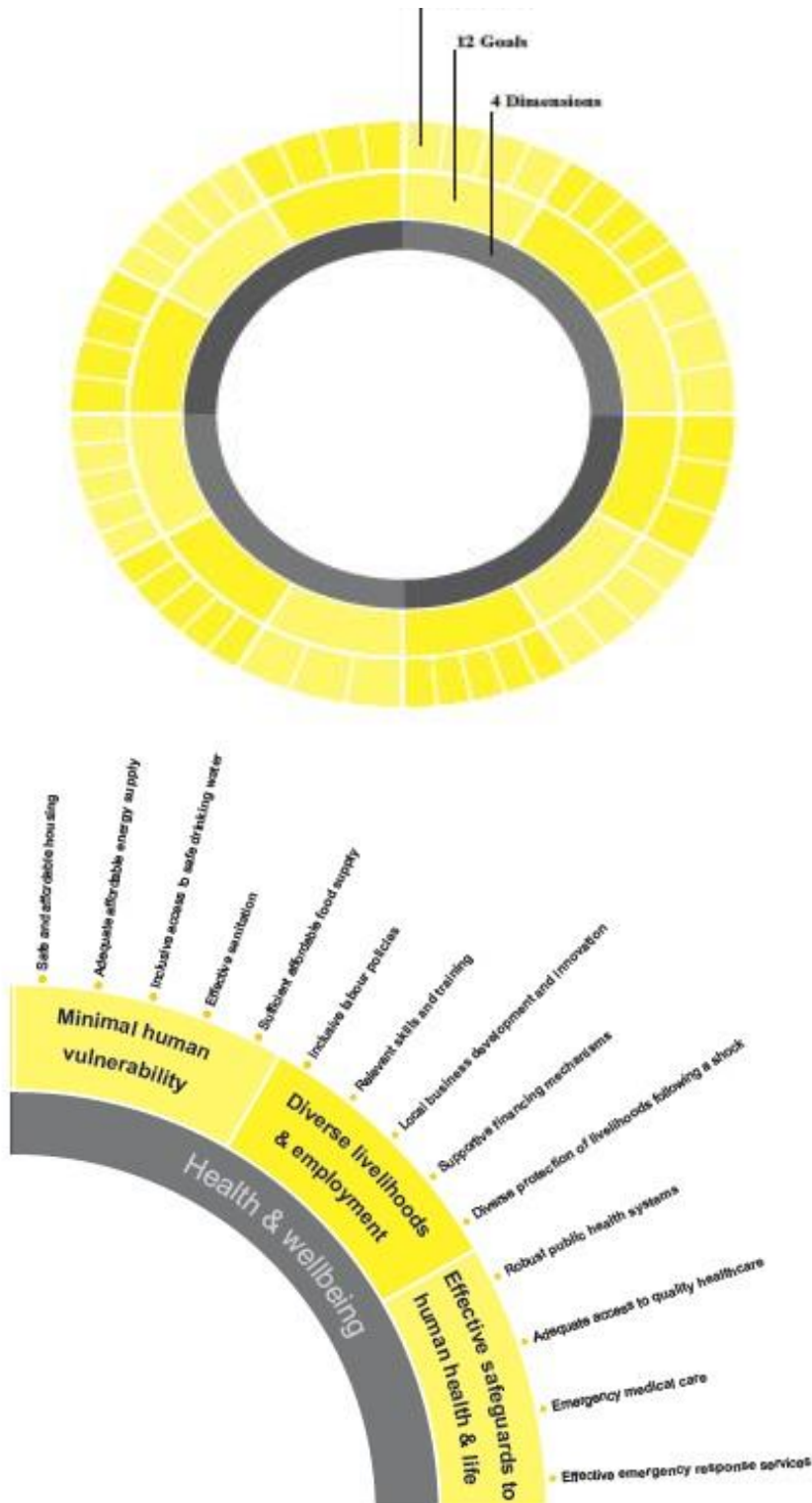
Goals are **what matters most** when a city faces a wide range of chronic problems or a sudden catastrophe. They range from how successfully a city provides for its residents' basic needs to ensuring inclusive economic participation, competency in infrastructure management to robust plans and strategies for the future.

52 INDICATORS

52 Indicators add further definition to the 12 Goals.

Indicators are a detailed array ranging from sanitation to availability of financing, crime prevention measures to continue it plans for critical assets. They are **observable, critical factors that contribute** towards the resilience of urban systems.

Structure of the CRI



4 Dimensions

Our research suggests that resilience of a city relates to four key dimensions:

Health and well-being, ensuring the health and wellbeing of everyone living and working in the city;

Economy and society, the social and financial systems that enable urban populations to live peacefully, and act collectively;

Infrastructure and environment, man-made and natural systems that provide critical services, protect and connect urban citizens, and

Leadership and strategy, the need for informed, inclusive, integrated and iterative decision making in our cities.

12 Goals

Underpinning these four dimensions, there are 12 goals that each and every city should strive towards in order to achieve resilience. Our research tells us that universally these are what matters most when a city faces a wide range of chronic problems or a sudden catastrophe. However, it is recognised within the framework that the relative importance of each goal and how they are realised will be unique for every city.

52 Indicators

Research to develop the City Resilience Framework and Index has identified 52 indicators. The indicators add further definition to the 12 goals and identify the critical factors that contribute towards the resilience of urban systems. The indicators also integrate the 7 qualities of resilient systems (e.g. robust, inclusive, flexible) that Arup's empirical research has identified as of vital importance.

Health and well-being

This dimension relates to **people** – the health and well-being of everyone living and working in the city.

This dimension considers the extent to which the city enables everyone to meet their basic needs (food, water, and shelter), particularly in times of crisis. It considers how well the city supports diverse livelihood opportunities, including access to business investment and social welfare. Finally, it considers if a city is able to safeguard the health of its population through its normal and emergency healthcare provisions.

Minimal human vulnerability

This relates to the extent to which everyone's basic needs are met.

- 1.1 **Safe and affordable housing** Safe housing that is affordable for all city residents.
- 1.2 **Adequate affordable energy supply** Sufficient and affordable energy supply for all.
- 1.3 **Inclusive access to safe drinking water** Access to an adequate supply of safe drinking water.
- 1.4 **Effective Sanitation** Safe, reliable and affordable sanitation provided to all areas of the city.
- 1.5 **Sufficient affordable food supply** Sufficient and affordable food supplies for all.

Diverse livelihoods and employment

This is facilitated by access to finance, ability to accrue savings, skills training, business support, and social welfare.

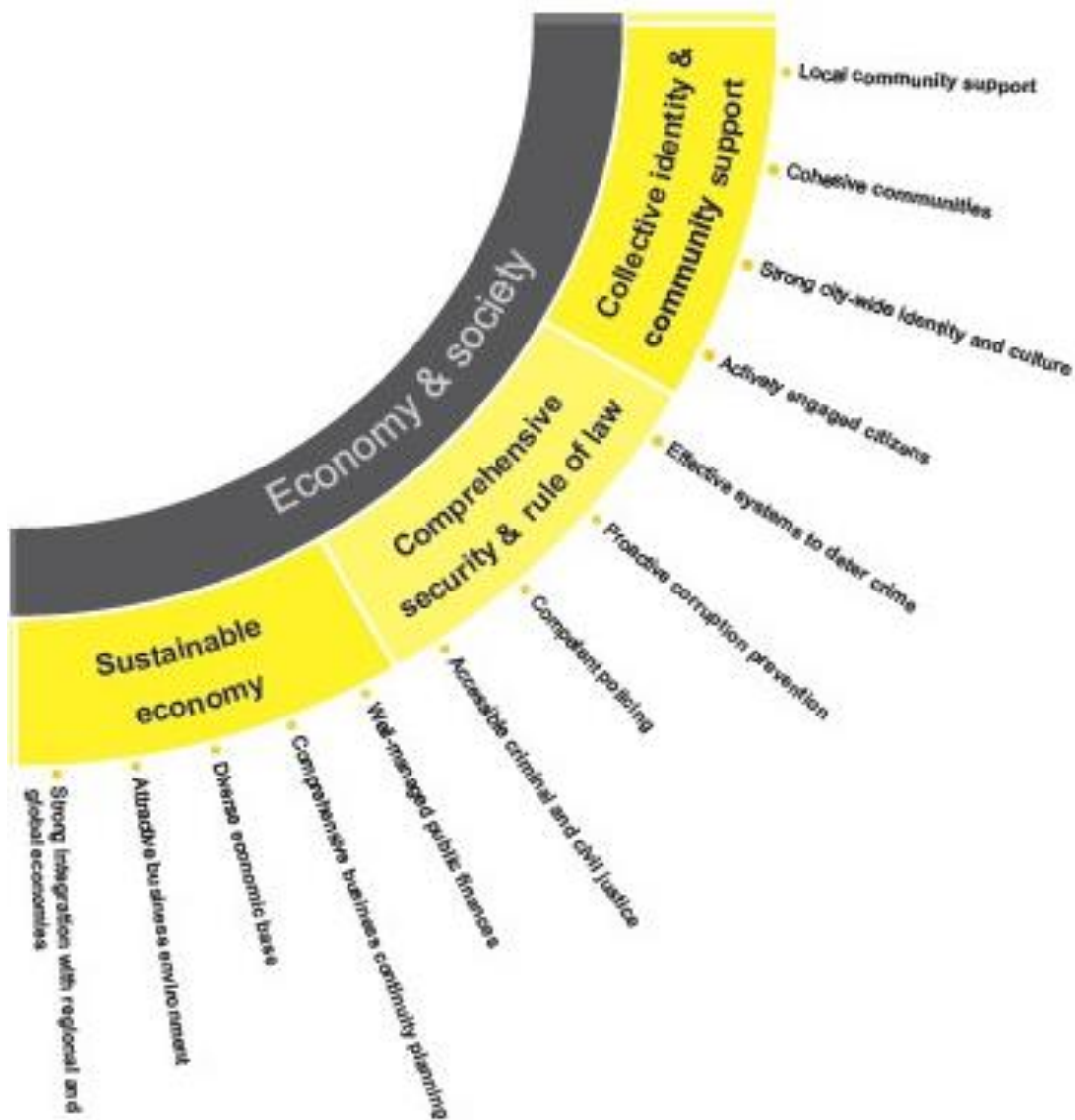
- 2.1 **Inclusive labour policies** Inclusive labour policies and standards, with an effective welfare system for low income groups.
- 2.2 **Relevant skills and training** Effective mechanisms for matching skills to the current and emerging employment marketplace.
- 2.3 **Local business development and innovation** Thriving, adaptable and inclusive local business environment.
- 2.4 **Supportive financing mechanisms** Inclusive and resourceful finance mechanisms to enable businesses to adapt to changing circumstances and put in place contingencies for shock events.
- 2.5 **Diverse protection of livelihoods following a shock** Resourceful and inclusive measures to support businesses and workers following a shock.

Effective safeguards to human health and life

This relies on integrated health facilities and services, and responsive emergency services.

- 3.1 **Robust public health systems** Robust monitoring and mitigation of public health risks.
- 3.2 **Adequate access to quality healthcare** Adequate and inclusive access to quality general healthcare.
- 3.3 **Emergency medical care** Adequately resourced emergency medical services.
- 3.4 **Effective emergency response services** Adequately resourced emergency response services.





Economy and society

This dimension relates to the **organisation** of cities – how social and economic systems enable urban populations to live peacefully, and act collectively. Included within this dimension are the systems that enforce law and order and ensure fiscal management. The environment within a city that creates collective identity and mutual support is also considered – open spaces and cultural heritage play an important role in this.

Collective identity and community support

This is observed as active community engagement, strong social networks and social integration.

4.1 Local Community Support

Cohesive social structures providing support at individual, household and local community level.

4.2 Cohesive communities

Cohesive, harmonised communities across the city.

4.3 Strong city-wide identity and culture

Cohesive local identity and culture, in which all citizens feel a sense of belonging in the city.

4.4 Actively engaged citizens

Citizens actively engage, express opinion and participate within society.



Comprehensive security and rule of law

This includes law enforcement, fair justice, and prevention of crime and corruption.

5.1 Effective systems to deter crime

Integrated, collaborative and resourceful mechanisms to deter crime.

5.2 Proactive corruption prevention

Fair and transparent systems to fight corruption and promote justice.

5.3 Competent policing

Effective policing measures and systems for a safe and secure city.

5.4 Accessible criminal and civil justice

Effective, affordable, impartial and accessible mechanisms to promote justice and resolve civil disputes.



Sustainable economy

This is observed in sound management of city finances, diverse revenue streams, and the ability to attract business investment, allocate capital, and build emergency funds.

6.1 Well-managed public finances

Adequate public finances and sound fiscal management.

6.2 Comprehensive business continuity planning

Resourceful, reflective and flexible business continuity planning across both public and private sectors.

6.3 Diverse economic base

Robust, flexible and diverse local economy.

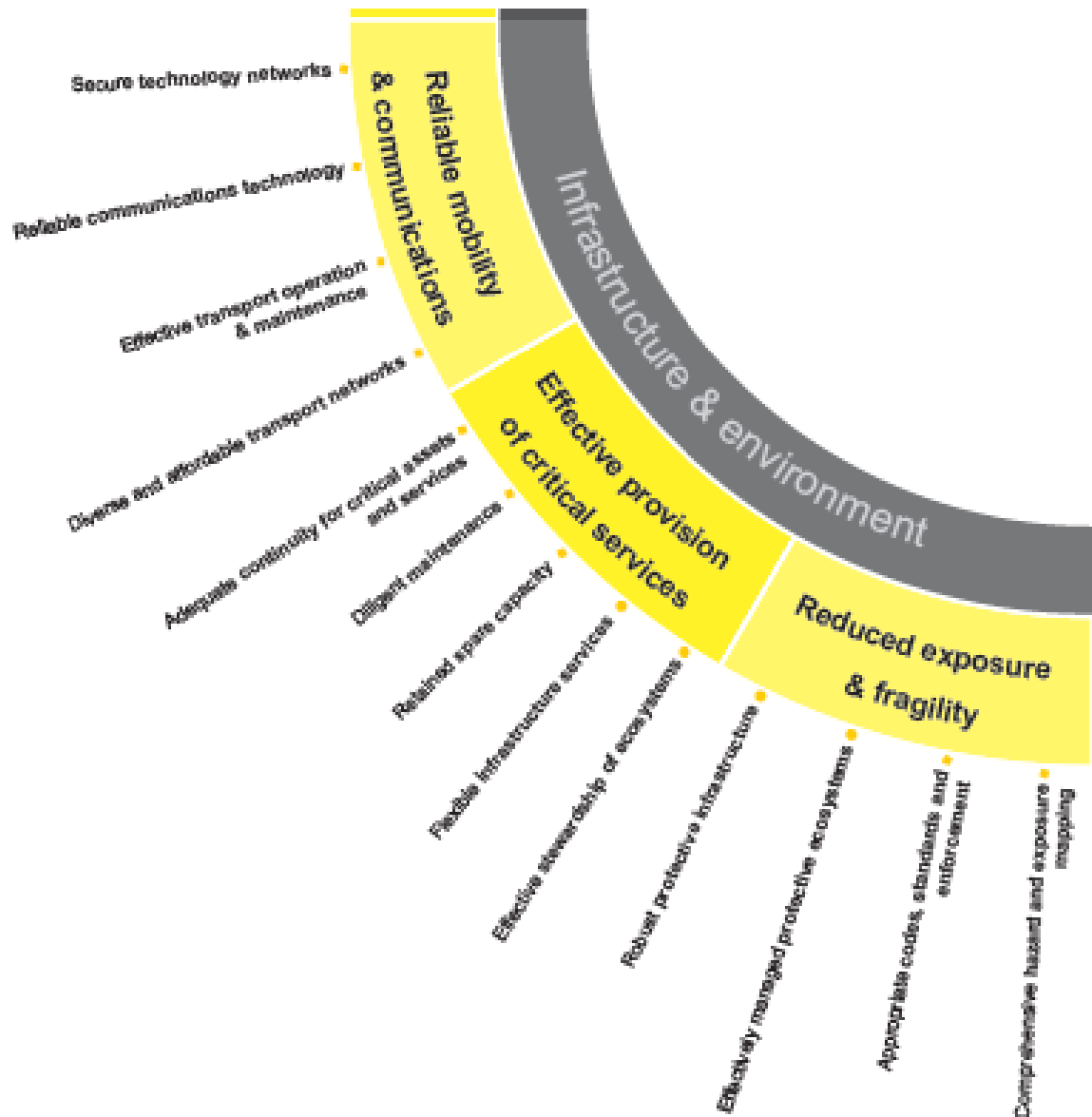
6.4 Attractive business environment

Diverse and resourceful investments within the city, driven by a strong urban brand and economic and social environment.

6.5 Strong integration with regional and global economies

Strong integration between the city's economy and wider economic systems.





Infrastructure and ecosystems

This dimension relates to place – the quality of infrastructure and ecosystems that protects, provide and connect us. The CRI considers the robustness of infrastructure and ecosystems that protect us from natural hazards. The continuity of critical services, under shock or stress situations are also important within this dimension. In particular, water supply, power distribution, and solid waste management; the transportation systems that enable the flow of goods, services, people, and information.

Reduced exposure & fragility

This relies on a comprehensive understanding of the hazards and risks to which a city is exposed, the extent to which this understanding then informs the development of integrated strategies to physically protect the city combining sound environmental stewardship, robust design and maintenance of man-made infrastructure, and enforcement of appropriate building codes and regulations.

7.1 Comprehensive hazard and exposure mapping

Robust systems in place to map the city's exposure and vulnerability to hazards based on current data.

7.2 Appropriate codes, standards and enforcement

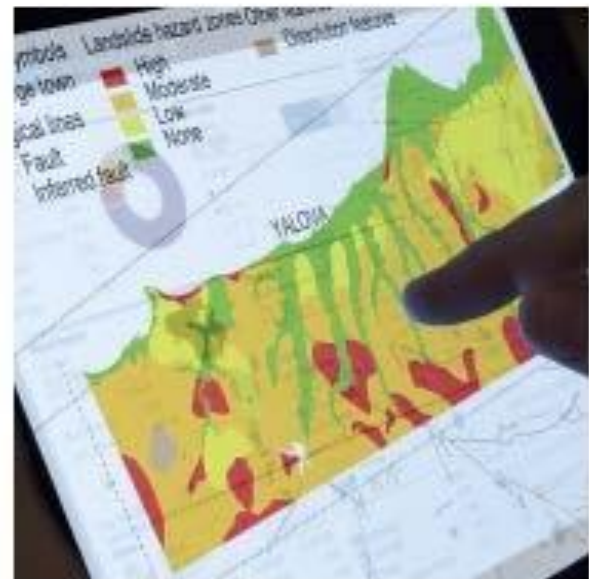
Building and infrastructure codes and standards are forward looking, appropriate to local context and risk profiles, and enforced.

7.3 Effectively managed protective ecosystems

Well-developed understanding and acknowledgement of the role of ecosystems in providing physical protection to the city.

7.4 Robust protective infrastructure

Integrated, forward-looking and robust network of protective infrastructure that reduces vulnerability and exposure of citizens and critical assets.



Effective provision of critical services

This results from active management and maintenance of ecosystems, and from diversity of provision, redundant capacity, and adequate maintenance of essential utility services, combined with robust contingency planning.

8.1 Effective stewardship of ecosystems

Robust mechanisms are in place to maintain and enhance the ecosystem services that benefit city residents.

8.2 Flexible infrastructure

Critical services within the city are supported by diverse and robust infrastructure, which has been appropriately planned and delivered.

8.3 Retained spare capacity

Demand on critical infrastructure is minimised through the resourceful and flexible use of key resources.

8.4 Diligent maintenance and continuity

Robust monitoring, maintenance and renewal of essential utility infrastructure, with effective contingency planning.

8.5 Adequate continuity for critical assets and services

Resourceful, reflective and flexible continuity plans to maintain utility services to critical assets during emergency situations.



Reliable mobility and communications

This is enabled by diverse and affordable multi-modal transport systems and information and communication technology (ICT) networks, and contingency planning.

9.1 Diverse and affordable transport networks

Diverse and integrated transport networks, providing flexible and affordable travel around the city for all.

9.2 Effective transport operation & maintenance

Effective management of the city's transport network to provide quality, safe transport.

9.3 Reliable communications technology

Effective and reliable communication systems that are accessible by all.

9.4 Secure technology networks

Robust, effective mechanisms in place to protect the information and operational technology systems on which the city is dependent.



Effective leadership and management

This is enabled by trusted individuals, multi-stakeholder consultation, evidence-based decision-making and disaster risk reduction activities.

10.1 Appropriate government decision-making

Transparent, inclusive and integrated government decision-making and leadership.

10.2 Effective co-ordination with other government bodies

Integrated and flexible communication and collaboration between city, state and national government.

10.3 Proactive multi-stakeholder collaboration

Inclusive and constructive collaboration between all actors involved in decision-making.

10.4 Comprehensive hazard monitoring and risk assessment

Effective systems to monitor potential hazards and assess risk.

10.5 Comprehensive government emergency management

City leadership that has sufficient capacity and flexibility to effectively manage emergencies.



Empowered stakeholders

This is underpinned by education for all, and relies on access to up-to-date information and knowledge to enable people and organisations to take action.

11.1 Adequate education for all

Affordable, quality education for all.

11.2 Widespread community awareness and preparedness

Inclusive efforts to build public awareness of risks.

11.3 Effective mechanisms for communities to engage with governance

Inclusive, integrated and transparent mechanisms for consultation and coordination between the city government and citizens.



Integrated development planning

This is indicated by the presence of a vision, an integrated development strategy, and plans that are regularly reviewed and updated by cross-departmental groups.

12.1 Comprehensive city monitoring and data management

Regular monitoring and analysis of relevant data undertaken to inform all planning and strategies.

12.2 Consultative planning process

Transparent and inclusive process to develop planning policies and strategies.

12.3 Appropriate land use and zoning

Integrated and flexible land use and zoning plans that ensure appropriate development of the city.

12.4 Robust planning approval process

Transparent, robust planning approval mechanisms, consistent with plans policy and strategy.





Leadership and strategy

This dimension is underpinned by **knowledge**. A resilient city learns from the past and takes appropriate action based on evidence. This means a city must have effective leadership and urban management, characterised by inclusive governance involving the government, business and civil society, and evidence based decision-making. A city must also empower its stakeholders by providing access to information and education, so that individuals and organisations can take appropriate action. It is equally important to ensure that the city develops in an integrated way that aligns the city's vision with sectoral strategies and plans at individual projects.

Conclusion

The identities of a contemporary city are happiness and resilience

1. The need for innovation in the relationship between the Private and Public sectors is immense and as such must be explored at the development stage for project specifics rather than one generic model.
2. Involvement of local, regional and national authorities early in the planning ensures sustained support throughout the life cycle of the project till its implementation and commissioning.
3. Identify – Sense of Community and Inclusion
4. Using nature, its unique features like architectural tradition, culture, light, water etc. make the place memorable and provide a sense of purpose for all and not only for elites.
5. Create an optimally dense, diverse and mixed use neighborhoods that include rather than exclude.
6. Components like socio-environmental systems, individual development concerns, etc must be integrated thematically

and territorially to achieve security, resilience, happiness, efficacy and efficiency in the cities.

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STRATEGIC SPATIAL PLANNING FOR THE CAPITAL CITY OF LUMBINI PROVINCE, DANG, NEPAL

oBijaya K. Shrestha*

Abstract

Around 480 sq. km of area covering all wards of Rapti rural municipality, Gadhawa rural municipality (wards 1, 2 and 3 only) and Sitaganga municipality (wards 8 and 9) in Deukhuri valley, Dang was declared as provincial capital city of Lumbini province on 6 October 2020. The main purpose of this paper is to prepare the strategic spatial planning for the capital city with threefold objectives of studying of site context, of proposing conceptual development planning, and of formulating planning and urban design framework. The study methodology combines both qualitative and quantitative data, collected through site visit and conducting semi-structured questionnaire survey and consulting with concerned agencies through workshops, key informant interview and focus group discussion. Profile of the capital site was prepared analyzing population growth trend, settlement patterns, socio-economic condition and natural hazard situation including regional connectivity, which acts as the base for the spatial planning. The conceptual plan translates the Buddhist philosophy and learning namely 'Peace, Coexistence and Respect' correlating with planning goals, sustainability, balance between conservation of heritage and modern amenities and natural resource management and ecological balance. Moreover, the five elements of the life – West Rapti river as 'water', agriculture land as 'earth,' forests as 'fire' and the peripheral mountains as 'air' and finally to 'sky' were linked with development of road and greenery network towards north-south direction thereby making all five elements physically, visually and psychologically visible and accessible. To conserve natural landscape, agriculture land and balanced growth, thirteen 'development nodes' comprising of one primary node, five secondary nodes (institution, industries, sport and transport) and seven tertiary nodes (service, residential and culture) were proposed at strategic location covering all three areas. Strategic road network and planning norms were also formulated.

1. Contextual background, objectives and study methodology

After declaration of Deukhuri valley as the capital of Lumbini province by the provincial assembly meeting, the 'Provincial infrastructure development authority (PIDA)' of Lumbini provincial government (LPG) intended to prepare the strategic master plan of the provincial capital with all necessary facilities. The proposed Lumbini provincial capital city (LPCC) is located at the foothills of the Chure hills, near the Rapti River and East-West Highway. It was formed by combining all areas of the Rapti rural municipality, Gadhawa rural municipality (Ward no 1, 2 and 3) of Dang district and Shitaganga municipality (ward no 8 and 9) of Arghakhanchi district with approximately total area of 480 sq.km. (Fig. 1). The proposed area basically consists of agriculture land, riverbanks and some settlements and rural market centres. Those rural settlements include Laurikot, Anpghat, Bhulke, Jurpani, Kohalawa, Maurighat, Lalmatiya, Ramnagar, Pipara, Bhagwanpur, Basantapur, Ratnapur, Badhara, Dhairani, Ghopte, Bhalubang, Pakhapani, Chalthe, Chisapani, Rupakot, Devikot, Ghorahibas, Ratamata, Jaluke, Sidhara and so on. Among these three territory of three different local levels, Rapti rural municipality covering larger area is densely developed. Ward no 8 (Juluke) and 9 (Siddhara) of Shitaganga municipality have basically a scattered low density development.

Gobardihi (ward no 1, 2 and 3) of Gadhawa rural municipality has development along road network. West Rapti River and East-West Highway, running from the centre of the study area anchors these three territory.

The main aim of this study is to develop a strategic master plan for LPCC covering about 480 sq. km. area. The specific objectives are threefold: contextual analysis of the site, preparation of conceptual master plan and then formulation of planning and urban design guidelines. To fulfil the above mentioned objectives, the investigation has been carried out at different steps in a sequential form so that each activity complements the following other. The methodology adopted is of a participatory approach combining different techniques using both 'top-down' and 'bottom-up' approaches (Fig. 2). It uses both qualitative and quantitative data. The 'bottom-up' approach constitutes contextual understanding of local contexts through primary information collection by carrying out ward-wise workshop, focal group discussion (FGD) and key informant interview (KII) as well as visual survey of the site. The 'top-down' strategy is essential to set the development framework carried out at national and provincial levels including critical review of major development plans, programs and implemented activities.

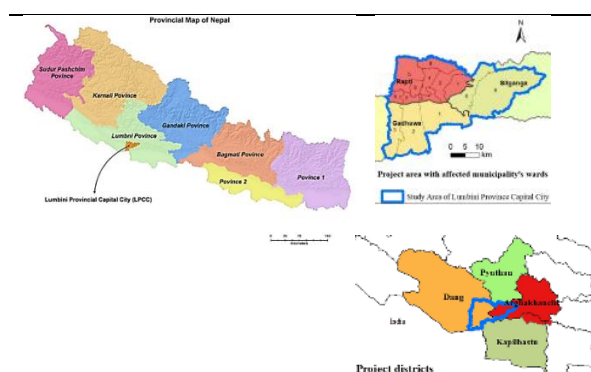
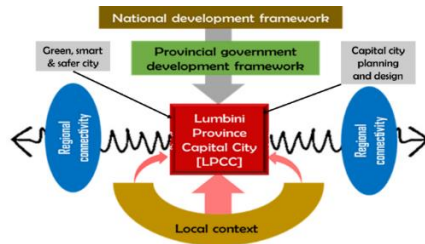


Figure 1: Proposed LPCC area within the framework of districts in Lumbini province

Key words: Capital city, strategic spatial planning, Buddhist philosophy, planning and building regulations

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(a) Study method



(b) Stakeholders workshop (c) Site visit

Fig. 2: Study approach and methodology

2. Profiling of LPCC area

As the proposed LPCC area is distributed over three rural municipalities, preparation of profiling of LPCC area is essential to understand local context in detail. It includes major sectors such as topography, land use and geology, population and family structure, economic condition, social situation and physical development including forest and environment.

2.1 Topography, land use and geology

The topography of the LPCC area is mixed with hills, plain area, undulations and rivers. The plain area lies along the banks of the West Rapti River while hills are situated on all three sides except the west. Though the Rapti rural municipality is extended from 'Inner madhesh' to 'Mahabharat' mountain via 'Chuire' region, significant areas lies under 'Chuire' with wards 2, 3, 4, 6, 7 and 8 on the plain area (Rapti rural municipality, 2076 BS). Wards 1, 2 and 3 of Gadhawa rural municipality has majority of area plain with some places with up and down topography (Gadhawa rural municipality, 2075 BS). There is a gradual increase in elevation of land topography in ward no 8 and 9 of Shitaganga municipality from west to east side (Shitaganga municipality, 2076 BS).

Existing land use in the three local levels reveals domination of forest, as the study area is surrounded by dense forest from three sides, except on the west (Table 1). Rapti rural municipality has 51.84% of its land as forest, whereas the corresponding figures for Gadhawa rural municipality and Shitaganga municipality are 65.27% and 83.14% respectively. In Rapti rural municipality, 43.03 % (69.62 sq. km) area is occupied by agriculture land, majority of them spreading on the northern part of the West Rapti River up to the edges of mountains. There also exist agriculture land on the south side of ward 1, 2 and 3 of Gadhawa rural municipality too. However, available agriculture land in ward 8 and 9 of Shitaganga is limited, as those wards are mostly dominated by mountain and ridges.

S N	Classification	Rapti rural municipali- ty (sq. km)	Gadhawa rural municipali- ty (sq. km)	Shitaganga municipali- ty (sq. km)
1	Agriculture/c ultivation area	69.62 (43.03%)	52.02 (14.50%)	97.69 (13.38%) + 0.95 (0.13%) (uncultivated land)
2	Gazing area and orchard	1.65 (1.02%)	10.32 (2.87%)	11.59 (1.59%)
3	Forest	83.88 (51.84%)	234.03 (65.27%)	607 (83.14%)
4	Road network	0.66 (0.41%)	-	-
5	River and water body	1.41 (0.87%)	2.61 (0.73%)	1.80 (0.243%)
6	Barren land/ sand	3.67 (2.27%)	22.31 (6.22%)	9.55 (1.31%)
7	Other (bush, etc.)	0.09 (0.06%)	34.90 (9.77%)	
8	Cliff			1.52 (0.21%)
	Total	161.79 (100%)	358.57 (100%)	730.11 (100%)
			Ward1: 58.41 + Ward2: 64.48 + Ward3: 37.59 = 160.48	Ward8: 39.77 + Ward9: 118.77 = 158.54

Source: Department of Survey in Rapti rural municipality, 2076BS; Gadhawa rural municipality, 2075 BS; Shitaganga municipality, 2076 BS

Table 1: Classification of the existing land use in three municipalities

Geological condition of LPCC area can be better understood by analysing larger area, Deukhuri valley, located in the sub-Himalayan in the mid-western Nepal. Its basin floor mainly consists of terraced and unconsolidated deposits called 'the Dun Gravel' (Sharma, 1990). Dun valley are intermontane basins in the Sub-Himalaya, which is a foreland fold-and-thrust zone lying between the Main Boundary Thrust (MBT) and the Frontal Churia Thrust (FCT). The Garhwa 1 Terrace on the left side of the West Rapti River is more than 8 m in thickness and their base is situated below the present flood plan (Kimura, 1998). However, the Garhwa 2 Terrace is developed along the Rapti River consist of fresh yellowish gray to yellowish brown sand of several meter thick and some fragments of woods. Geology of Rapti rural municipality consists of two sub-groups: bedrock geology covering about 101 sq. km area and sedimentary succession of about 60 sq. km distribution (Rapti Rural Municipality, 2020). Siwaliks lithounits made up of mainly mudstones and sandstones of varying proportions cover the whole rural municipal area. All the settlements developed along East-West Highway have terrace deposited floor.

2.2 Population study

At present, total population of LPCC is about 68,615 (Table 2): 18,232 in three wards of Gadhawa rural municipality, 44,433 of all nine wards of Rapti rural municipality and 5,950 of two wards of Shitaganga municipality (Gadhawa rural municipality, 2075 BS; Rapti rural municipality, 2076 BS and Shitaganga rural municipality, 2076 BS). In the study area, the population of Rapti rural municipality is almost seven fold of Gadhawa rural

municipality and of is three fold larger than that of Shitaganga municipality (of wards 8 and 9 only). Among different wards of three municipalities in the study area, ward 6 of Rapti rural municipality has the highest population density of 576.6 person/sq. km whereas ward 9 of Shitaganga municipality has just 25.97 person/sq. km. of area.

Municipality/ Rural municipality	Ward no.	HH	Population				Population density (per sq. km)
			Male	Female	Third gender	Total	
Rapti rural municipality	1	1166	2674	2424	7	5105	224.0
	2	1342	3511	3281	0	6792	284.18
	3	1241	3402	3238	1	6641	71.22
	4	1215	3075	2887	0	5962	377.3
	5	756	1963	1939	2	3904	92.5
	6	918	2667	2523	0	5190	576.6
	7	845	2219	2333	2	4554	548.6
	8	920	2380	2182	0	4562	495.88
	9	360	892	830	1	1723	79.7
Total		8763	22783	21783	13	44,433	274.9
Gadhawa rural municipality	1	1154	2700	3190	0	5890	101
	2	856	2395	2472	0	4867	75
	3	863	2236	2329	0	4565	121
Total (only 3 wards)		2873	7331	7991	0	15322 (18,232 in 2020)	99
Shitaganga municipality	8	671	1275	1591	0	2866	72.06
	9	642	1519	2564	1	3084	25.97
Total		1313	2794	4155	1	5,950	49.01
Grand total		12949	32908	33929	14	65,705 (68,615)	140.97

Note:

(a) The population of Gadhawa rural municipality is based on 2011 census and it was assumed that total population of three wards is 18,232 in 2020, as per Health Profile of the same rural municipality at <http://103.233.56.101:5003/profiling/main/gadhawa>

(b) The population distribution of the remaining two (Rapti rural municipality and Shitaganga municipality) are based on 2076 household survey, mentioned in their profiles.

Source: Compiled and calculated from Gadhawa rural municipality, 2075 BS; Rapti rural municipality, 2076 BS and Shitaganga municipality, 2076 BS

Table 2: Population distribution by wards and gender in LPCC area

2.3 Agriculture farming and livestock production and income of households

In the case of Rapti rural municipality, about 73.07% of total population are directly and actively engaged in agriculture and

livestock (Rapti rural municipality, 2076 BS). Settlements in Gadhawa rural municipality are also dominated by farming communities producing staple crops like rice, maize, wheat, buckwheat, soyabeans, potatoes, lemons, and fruits in summer. In Shitaganga municipality, agriculture sector (70.73%) contributes to economy (Shitaganga municipality, 2076 BS). Out of 6372 households (HHs) adopting agriculture and livestock, 565 households (8.86% of 6372 HHs) in ward 8 and 477 (7.48% of 6372 HHs) in ward 9 rely on agriculture and livestock (ibid). Households in all three territory of LPCC area engaged in livestock for milk, meat, fertilizer, agriculture work and for transportation. Major domestic animals include buffalo, ox, cow, swine, goat and chicken and duck. Cow and buffalo give milk; oxes are used for land cultivation; and goat, swine, sheep and chicken are raised for meat.

2.4 Social development condition

In Rapti rural municipality, either basic schools or high schools exist in all wards, besides madarsha in some places. Students need to spend a lot of time to reach basic schools: 40.34% students arrive their basic schools in less than thirty minutes on foot; 47.16% need at least 30 min to 60 min, and the remaining 12.50% takes more than one hour on foot to attain their schools (ibid). In the case of Gadhawa rural municipality, only 66.5% of people living in wards 1, 2 and 3 can read and write and nearly one third (31.22%) can not read and write (Gadhawa rural municipality, 2075 BS). There is only four educational schools in Gobardiha: one secondary school, two basic schools and one primary school (Dang district profile, 2071 BS). There is no schools for higher education. Among 86 no of basic and high schools, five schools (four basic and one high school) are located in ward 8 and another ten schools are operating in ward 9 (Shitaganga municipality, 2076 BS). Almost all of them are basic schools with only two (Shankar Jyoti School and Pankuri School) offering classes up to eight grade.

There is only two health centre (with birthing facility) (located in wards 1 and 5) and three community health unit (wards 4, 6 and 9) and two health service centre (wards 2 and 3) in Rapti rural municipality, besides two polyclinic and about 34 medical/drug shop (Rapti rural municipality, no date). Mobile health clinics have been operated in wards 2 and 7. Both birthing centre has 32 female community health volunteers (FCHV) with 4 and 3 skilled birth attendants (SBA) (ibid). Out of four health posts in Gadhawa rural municipality, there is only one centre in ward 1 in LPCC area. It also has birthing centre with 30 FCHV and two SBA (Gadhawa rural municipality, no date). It offers family planning using 5 methods (condom, pills, depo, implant and IUDs (ibid). Available health facilities in Shitaganga municipality is not satisfactory. Local people have been using local health centres for services, but treatment of different types of diseases is not possible there due to lack of adequate physical infrastructure, medicine and above all qualified doctors.

2.5 Public open space and recreation facilities

All three territory of LPCC area has public open spaces in different forms for socialization, recreation and sports. At least fifteen playgrounds, parks, picnic spots or recreation places are found in different wards of Rapti rural municipality (Rapti rural municipality, 1976 BS). In Gadhawa rural municipality, they are disorganized, lack clear boundary and access road and community facilities such as public toilets, hand washing, lighting at night and sheds for protection from rain and sun. Majority of them in Shitaganga municipality are not planned, lack basic amenities such as access road, drinking water, public toilets and fencing. Out of 22 number of playgrounds in the municipality, ward 8 have

two different playgrounds: Lahape playground and Tinkhande playground, besides individual playground of schools (Shitaganga municipality, 2076 BS).

2.6 Drinking water and sanitation

In Rapti rural municipality, about 44% (3858 HHs) households use piped drinking water whereas 43% (3803 HHs) households drink water from tubewell (Table 3) (Rapti rural municipality, 2076 BS). Out of 3420 HHs in wards 1, 2 and 3 of Gadhawa rural municipality, 1197 HHs are connected with drinking water pipe line whereas 1303 HHs drink water from open well or springs and another 681 HHs still depend on tubewell for drinking water (Gadhawa rural municipality, 2075 BS). In Shitaganga municipality, 161 HHs and 380 HHs in wards 8 and 9 respectively (out of 671 and 642 HHs) drink water from piped line whereas 89 HHs and 177 HHs in wards 8 and 9 respectively rely on open well or spring for drinking water (Shitaganga municipality, 2076 BS).

Territory	Ward no	Piped water	Tubewell	Covered well or spring	Open well or spring	Main tank	River/stream	Other	Not mentioned	Total
Gadhawa rural municipality	1	808	161	68	266	5	42	9	14	1373
	2	71	312	12	599	1	19	4	1	1019
	3	318	208	23	438	15	0	8	18	1028
Sub total		1197	681	103	1303	21	61	21	33	3420
Rapti rural municipality	1-9	3858	3803	361	693		12	35	0	8762
Shitaganga municipality	8	161	51	325	89	5	34	2	4 (mineral water)	671
	9	380	0	3	177	23	58	1	0	642
Sub total		541	51	328	266	28	92	3	4	1313
Total		5596	4535	792	2262	49	165	59	37	13495

Source: Compiled and calculated from Rapti rural municipality, 2076 BS; Gadhawa rural municipality, 2075 BS; Shitaganga municipality, 2076 BS

Table 3: Households using different sources of drinking water in three territory of LPCC area

In Rapti rural municipality, about 70% HHs have toilets as per standard norms. Out of that 41.01% HHs with septic tanks. Out of 3418 HHs in wards 1, 2 and 3 of Gadhawa rural municipality, only 58 HHs have toilets connected to public sewer line and another 508 HHs have toilets with septic tank (Gadhawa rural municipality, 2075 BS). Still 819 HHs use ordinary toilet and above all 2000 HHs have no toilets in their houses (ibid). In Shitaganga municipality, out of 671 HHs in ward 8, 413 HHs have flush toilets linked with septic tanks whereas this figure for ward 9 is 383 HHs (Shitaganga municipality, 2076 BS).

2.7 Settlement pattern and housing development

Though there is no planned or well defined settlement pattern in LPCC area, nonetheless, they can be grouped into three typology based on the nature of their growth (Fig. 3). First, earlier villages were developed far away from West Rapti River north and south sides, near hills edges. Those villages inhabited by ethnic groups have small groups of houses clustered around community spaces with road network and hills as edges. Second, linear development pattern following the major road network. One can see small branches spreading on both sides of the major roads for commercial activities. Such development can be seen along East-West Highway as well as major north-south roads. Third typology is sprawl development on ad-hoc basis. Some of the buildings along the road but others in the middle of the agriculture lands, connected by pedestrian ways.

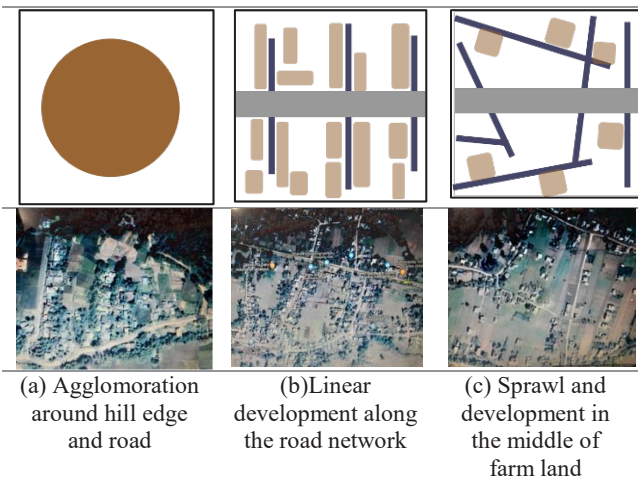


Fig. 3: Existing typology of settlements in LPCC area

2.8 Climate change and disaster risk

Three local areas of Lumbini provincial capital city have been impacted by different disasters, as perceived by local inhabitants (Table 4) ((OPM, 2019). In the case of Rapti rural municipality, the most devastating hazards are flood, fire and landslide whereas it is drought, crop and livestock diseases and flood in Gadhawa rural municipality (ibid). Landslide, fire and drought are the three major hazards in Shitaganga municipality (ibid). In addition to these, these local areas have been impacted by wind storm, heat waves, cold waves, avalanche, and epidemics including earthquake in the past.

S.N.	District	Top ten hazards in the last one decade
1	Rapti rural municipality	(i) Flood (ii) Fire (iii) Landslide (iv) Drought (v) Cold wave (vi) Epidemics (vii) Wind storm (viii) Heat waves (ix) Crop and livestock disease (x) Earthquake
2	Gadhawa rural municipality	(i) Drought (ii) Crop and livestock disease (iii) Flood (iv) Hailstone (v) Fire (vi) Earthquake (vii) Heat waves (viii) Epidemics (ix) Landslide (x) Avalanche
3	Shitaganga municipality	(i) Landslide (ii) Fire (iii) Drought (iv) Flood (v) Cold waves (vi) Heat waves (vii) Wind storm (viii) Crops and livestock disease (ix) Epidemics (x) Earthquake

Source: Field survey done for Oxford Policy Management (OPM) (2019).

Table 4 Top ten hazards perceived by the inhabitants in three municipalities

Another study carried out by Province Planning Commission in 2075 BS has identified many vulnerable wards and settlements

from different type of disaster (Table 5) (ibid). Both wards 8 and 9 of Shitaganga municipality are vulnerable to flooding and fire (ward 8) whereas wards 5, 6 and 9 of Rapti rural municipality and ward 3 of Gadhawa rural municipality are vulnerable to flooding (ibid).

Local area	Ward no. and settlements	Disaster type
Shitaganga municipality	wards 8 and 9	Flooding
	8 (Jaluke), 9	Fire
Rapti rural municipality	6 (Majeriya, Bhagwanpur, Bagarapur), 8 (Kohaluwa)	Flooding
	9 (Debikot, Muslim tole, Jakine, Shotitole, Lower Ghokkhola and Lama khola	Landslide
	5 (Kalapani, Pahruwa, Lathahawa, Singe)	Inundation
Gadhawa rural municipality	3 (Dhereni, Khirakhal)	Flooding
	1 (Chisapani, Jurauni, Malmala), 2 (Chaffa and Kalipurua)	Inundation

Source: PPC, 2075 BS

Table 5: Ward no and settlement vulnerable to different disasters in three municipalities

3. Urban growth trend and population projection

Most of the traditional settlements in LPCC area are located at flood plain area on both sides of the Rapti River in Rapti rural municipality as well as in Gadhawa rural municipality. In the recent past, new settlements have been developed along the East-West Highway and concentrated at various road cross junctions. Majority of the settlements lie within Rapti rural municipality whereas the villages at wards 8 and 9 of Shitaganga municipality are scattered with low density.

Annual population growth of Lumbini province (1991-2001), Dang district (2001-2011) and Rapti rural municipality (2011-2018) was analysed. Among them, the highest population growth of Dang district, 1.8% is considered for population projection of LPCC area for the year 2031. It is assumed that the population will increase after 2031, as most of the provincial capital infrastructures will be established by then. Hence, annual population growth of 2.4% is assumed for LPCC area between 2031 - 2041 and then for the next 10 years, the growth will be only 2.2%. With these assumptions, the LPCC area has 65,705 population which will be increased to 82,855 in the year 2031 and 130,564 by 2051. Developable area is calculated by deducting all constraints such as forest, river setback, road right of way and set back, existing settlements and so on. Agriculture land on both sides of the West Rapti River are available for future growth.

4. Concept evolution and development

As Lumbini province was named after the Lumbini, the scared place of birth of Gautam Buddha, the strategic development plan of Lumbini provincial capital city should have some symbolic representation associated with it. Lumbini is one of the holiest places of one of the world's great religions. It has been enlisted into the UNESCO's world heritage site.

4.1 Five forces of nature

According to an ancient eastern thought, there are five basic elements or forces of nature which compose the Universe. These five forces often known as 'Pancha Mahabhootas.' They are five great basic physical elements, which according to Hinduism, is the basic one of all cosmic creation. These elements are Earth, Water, Fire, Air and Ether (or Sky). These elements having

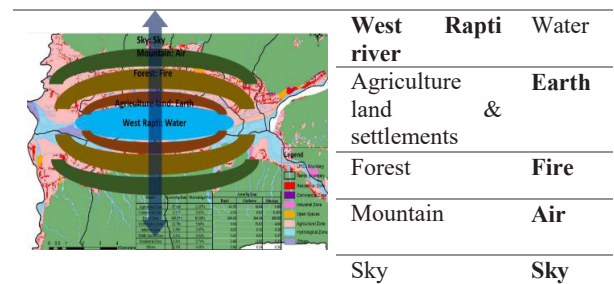
different characteristics account for different faculties of human experience. In Ayurveda, the body of human is said to be made of the five elements.

The depiction of these elements in tattoo art design appears as a column of separate symbols which represent each of these five elements. At the base is a square, which represents the Earth element. Then, there is Circle symbolizing the Water element. The triangle denotes for the Fire element and upturned and open crescent for Air. A dot suspended above the crescent represents the Ether or Sky. Such identical form is also seen in the graphic representation of the Stupa.

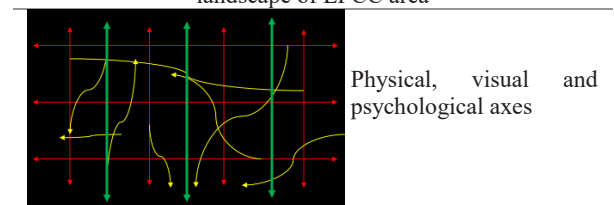
4.2 Planning philosophy and master plan

The three key words associated with Buddhist learning and teaching are Peace, Coexistence and Respect and it can be correlated with three development planning goals namely sustainability, respect of conservation (past heritage) and adaptation of present day needs and natural resource management and ecological balance. Peace can not be achieved without socio-economic modernization and improving quality of life of inhabitants. Harmonious coexistence between urban and rural lifestyle is required. Conservation and modernization is possible only with coexistence of nature and human habitat. Respect of nature and culture is also essential.

LPCC area is rich in natural resources and comprises of river, agriculture land and mountain. The west Rapti River is the back bone of the inhabitants. It can be correlated with 'Water' of the five basic elements (Fig. 4a). Agriculture land along with newly developed area along the East-West Highway corresponds to 'Earth' whereas the forest acts as 'Fire' of the basic elements. The peripheral mountains resembles to 'Air' and finally the 'Sky.' To strengthen this cycle or linkages, major road network as well as greenery network are developed towards north-south direction so that all these five elements are physically, visually and psychologically visible and accessible (Fig. 4.b).



(a) Correlating five basic elements of life with the landscape of LPCC area

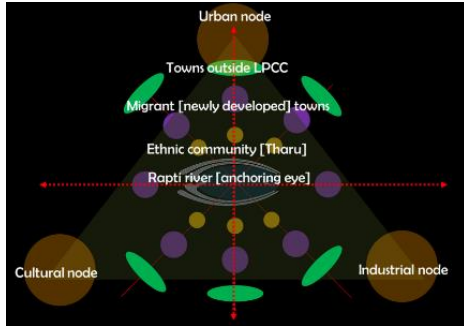


(b) Strengthening the five element cycle through major transportation and greenery/open space network

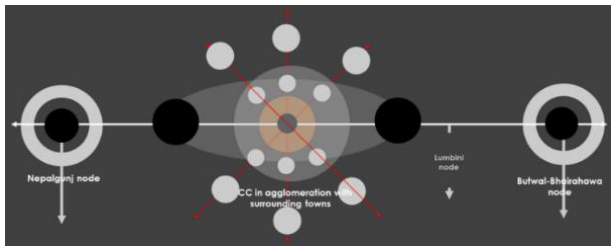
Fig. 4: Translating five basic elements of life into physical plan of LPCC

Moreover, the 'Three Treasures of Buddhism' and 8 'Truth Paths' are translated symbolically into strategic spatial plan (Fig. 5). Three distinct settlements namely 'Tharu' community around the

West Rapti River, newly formed settlements along the East-West Highway and villages outside the LPCC area correspond to 'Buddha,' 'Dharma,' and 'Sangha'. Tharu community is ethnic inhabitant of this place and thus identity of the area. Moreover, it can be further correlate to the three distinct nodes: urban node, cultural node and industrial node. All these different hierarchy of settlements along with various development nodes along the Highway (outside LPCC area) not only symbolize the three treasures but they are also anchored by the West Rapti River.



Tharu settlements (traditional)	Buddha
Newly developed towns	Dharma
Neighboring villages outside the LPCC area	Sangha



Dense nodal development along the East-West Highway along with hierarchy of villages within and outside LPCC area, anchoring by the West Rapti River as the central spine

Fig. 5: Resembling various settlements (traditional and recently development along with outside villages) as three treasure of Buddhism and eight truth path

The present landscape of LPCC area is still of rural character dominated by agriculture land, forest and river system. Based on the past trend of population growth, it is assumed that the population growth up to 2030 will be moderate and after that it will be high till 2050, as most of the infrastructure needed for capital city would have developed by 2030.

In order to onserve the natural resources and landscape, it is decided to encourage compact development around certain strategic locations only in the concept of 'development growth nodes' and the remaining peripheral huge areas, mostly dominated by agriculture and forest will be preserved (Fig.4.4). One primary node is proposed at the centre location of LPCC area above the Highway. Among other areas, this location has multiple advantages: nearby from the Highway, still virgin lands for planning and centrally located so that inhabitants from different parts of the LPCC can conveniently visit the area. The present 'Bhaluwang bazaar' area, which lies across two Highways will be developed as 'secondary node' in future. This area has at present already developed as commercial area due to junction of two major roads. However, this area has land constraints for future growth. Numerous scattered traditional settlements on north and south sides of the West Rapti River at present lack minimum

services. So, numerous 'territory nodes' are proposed to cater these population. In addition to these, some 'territory nodes' proposed at the east and west sides are mainly associated with facilities related to agro based industries, transportation and industrial activities.

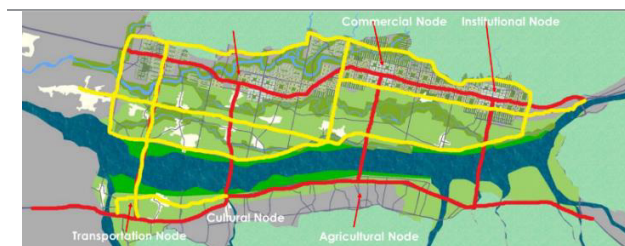
The central axis – the West Rapti River is surrounded by greenery and marsh lands, followed by vast agriculture lands (on both sides) with existence of traditional settlements, mainly dominated by residential use. Institutional development is between Maurighat and Lalmatiya supported by commercial development. Sishinya and Pipara will have mix use of mainly commercial, institutional and entertainment activities. Major land use includes commercial, institutional, residential, open spaces and industrial area.

The proposed nodes located on both sides of West Rapti River results not only supporting existing indigenous settlements but also cause balance development of the whole area. All nodes will be developed in relation with surrounding context and linking with major land use activities (Fig. 5).

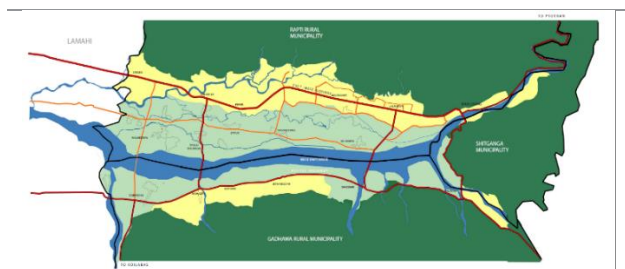


Fig. 5: Proposed planning within nodes

Different hierarchy of road network has been proposed to link various proposed nodes based on the concept of transit oriented development (TOD). Two north south road connecting proposed cultural node at Sisaniya and Mahadev and also road connecting Institutional node at Lalmatiya and service node at Bansbari are proposed to be of Arterial standard with 50 m proposed right of way. These two road connect the two strategic road Mahendra (East West) highway and Postal highway (Fig. 6). By 2051, additional North-South road connecting Maurighat and Jethangoan may require to meet business and commercial activities between north and south of West Rapti River. Sub-arterials roads are somewhat lower level of travel mobility than the arterial roads. These road provided access to adjoining area more than arterial roads. Parking loading and unloading are usually restricted and regulated (Fig. 6b). Pedestrians are allowed to cross only at intersections or at the designated crossings. The roads to be upgraded or constructed include (i) road through Jitpur, Basantapur, Khurirya, which is parallel to East-West highway, (ii) north-south road through Majheriya to Goberdiya, and (iii) parallel road East-West highway through Maurighat to Bhaluwang, both side of East-West Highway. A collector road is one intended for collecting and distributing the traffic to and from local roads and also for providing access to arterial/sub-arterial road. They are mainly located in residential neighbourhoods, business areas and industrial areas (Fig. 6c). Normally full access is allowed on these roads from abutting properties.



(a) Strategic road and urban arterials



(b) Urban sub-arterials



(c) Urban collector roads

Fig. 6. Proposed different hierarchy of road network linking various proposed development nodes

Primary node is expected to have population density of 250-300 person/ha, secondary node with 150 - 200 person/ha and tertiary node with 100 - 150 person/ha. A population density of between 30 and 100 person/ha is suitable for a transit city. Higher urban density will allow the frequency of trips to increase as the buses fill up faster and more often. This decreases the travel time for passengers and further improves the transport mode's level of service. Without public transport it would be impossible to deal with the increase in traffic. Bus system is the most conventional type of public transport that can serve as the public transport. Initial cost is relatively low; therefore, it is easy to introduce especially in small-sized cities such as those with a population of less than a million. The following bus routes are proposed: (i) Route 1 – Circular route through east west highway and postal road (Pink Line), (ii) Route 2 – Circular route along the proposed ring road in Rapti municipality (Green Line) and (iii) Route 3 – Bus route from Sitganga to Bhaluwang (Fig. 7).

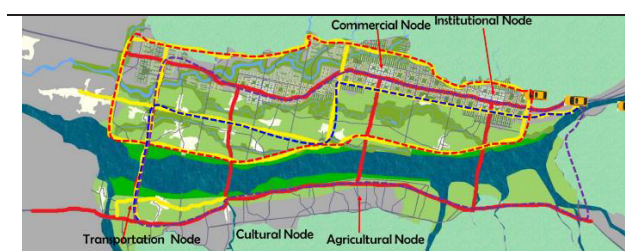


Fig. 7 Public transportation system

5. Planning norms and standards

Planning norms and standards for LPCC area are required to protect natural resource as well as agriculture zone (Table 6). The present haphazard urban growth dictated by road alignment does not lead to long term sustainable development and optimum utilization of scarce resource, i.e., land. Instead of that, urban growth is regulated to a desirable prescribed locations for integrated infrastructure development. Various natural and man-made hazards are also to be considered in proposing new development areas.

Norms	Standards
Development zone	
<i>Primary node</i>	
Major economic and commercial and tourism related area proposed at the centre above the East-West Highway	<i>Physical features:</i> Central business district with all modern facilities; well road network connected with pedestrian friendly environment, eco-friendly and green buildings and infrastructure. <i>Proposed land use:</i> Mainly commercial, financial institutions, hotels, private corporate buildings, tourism related activities, services, taxi parks, housing and apartment, public plazas and greenery open spaces, and so on. <i>Population density:</i> 250-300 pph (gross)
<i>Secondary node</i>	
The proposed institutional zone and surrounding areas are included into the secondary zone. This zone will have government institutions, health and education related facilities, training institutes and so on. It lies on the east side of the primary node and is located on the northern part of East-West Highway	<i>Physical features:</i> institutional zone with modern facilities; it will have well road network connection within the zone and other development nodes; the roads will be pedestrian friendly and buildings and infrastructures will be eco-friendly. <i>Land use:</i> Mainly institutional buildings, educational and health facilities, commercial and retail shops along with high density housing and apartment including plazas, open spaces and parks. <i>Population density:</i> 150-200 pph
Territory nodes	
<i>Transportation node</i>	
This node is proposed in ward no 3 of Gadhawa rural municipality	<i>Physical features:</i> The node will be well connected with transportation network (50 m ROW-Postal road as bypass road for East-West Highway). <i>Land use:</i> Transportation related facilities such as Bus park, ware houses, repair and service centres, offices, etc. <i>Population density:</i> 100-150 pph
<i>Cultural node</i>	
This node is also located in Gadhawa rural municipality, south of West Rapti River. There exists numerous traditional 'Tharu' settlements on both sides	<i>Physical features:</i> its lies in developmental area in close proximity to traditional settlements and it is linked with major transportation network including local road network.

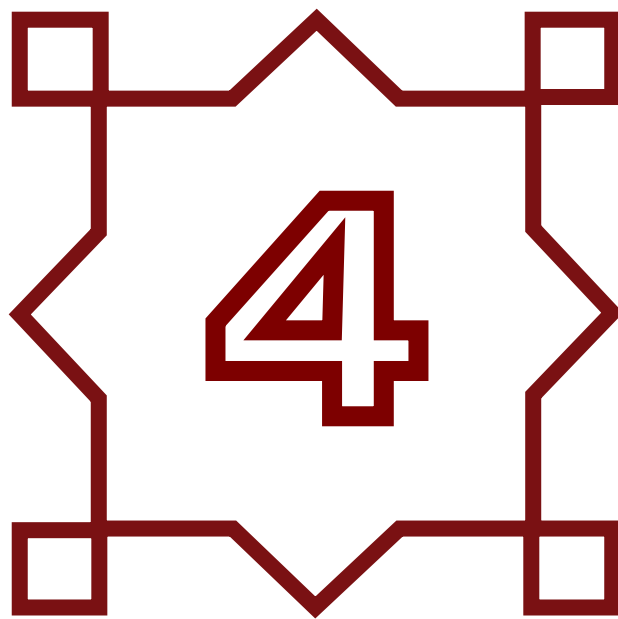
of the River and to promote them, this node is proposed.	Land use: Cultural promotion activities such as museum, cultural centre, dance institutes, souvenir shops, home stay and retail shops, restaurants and other service facilities catering to visitors Population density: 100-150 pph
Agriculture node	
This node is located at Gadahwa rural municipality and is proposed to promote agriculture sector, the main source of livelihood of the inhabitants	Physical feature: This node is also link with postal road and other local road network. Land use: Agriculture promotion activities such as livestock farms, agriculture farms, cold storage and mills, dairy farm, and so on. Population density: 50-100 pph
Industrial node	
This node is proposed in Shitganga municipal side on the south-east corner of the LPCC area, near West Rapti river	Physical feature: It is connected with major road network and away from the main settlements and human habitat but located along the West Rapti River. Land use: Industries associated with sand, aggregates, building and road blocks and other value added facilities including offices, ware houses, truck yard and so on Population density: 100-150 pph
Sports and recreation node	
This is also located in Shitganga municipal side on the north-east corner to promote sports and recreation facilities	Physical features: well road connected with diverse public open spaces. It is away from the main settlement areas; Land use: Sport related facilities such as various sports, physical fitness centre, service activities for visitors, recreation facilities such as parks and promenades, public facilities and so on.

Population density: 100-150 pph	
Service centres (ward level)	
There are multiple service centres or nodes located in various wards to cater the scattered villages	Physical feature: located among many villages connected with load roads. Land use: Daily use activities such as ward office, service areas, retails, restaurants, homestay and so on Population density: 50-100 pph

Table 6: Identification of physical development area and proposed norms and standards

Key reference

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IDENTITY AND HERITAGE

02

Panel Discussion: Heritage and Urban Identity: Constraints of the Past?

Session Moderator: Ar. Kai Weise

The panel discussions on “Heritage and urban identity: constraints of the past?” was moderated by Ar Kai Weise and the panellists were Dr Suresh Suras Shrestha, Dr Mohan Moorti Pant, Dr Inu Pradhan Salike, Dr Jharna Joshi, Ar Shova Maharjan and Ar M Qazi Arif. The session was organised that four members of the panel presented certain issues, and three panellists were chosen to provide a comment.

Dr Suresh Suras Shrestha presented on the changing ‘governance of cultural heritage in Nepal’, beginning from the pre-Licchavi period and ending with the present circumstances. During the early periods, the community maintained their heritage, but this already began to change with the Licchavi rulers, which was the basis for establishing terminology which was elaborated on by each of the following dynasties. This was the basis for the establishment of the Department of Archaeology and the act of parliament empowering the state to protect both tangible and intangible heritage. However, a gap has grown between the authorities and the communities and the question was raised how best to bridge the gap, to ensure stakeholder involvement in decision making and equal rights to resources. How do we bring back the community in the process of protecting cultural heritage? Dr Inu Pradhan Salike, Dr Jharna Joshi and Ar M Qazi Arif commented on this. Dr Pradhan Salike pointed out how this gap existed during the response phase to the Gorkha Earthquake, with the government using blanket-approaches, without considering specific contexts and linking to the communities. Dr Joshi pointed to the need to link the tangible to the intangible and that many activities were carried out by the communities, whenever possible, such as rituals and festivals, and in some cases even resorting to activism. Ar Arif provided a perspective from Bangladesh, which is defined by the policies and politics of those who are in power.

Dr Mohan Moorti Pant provided the second presentation on ‘heritage issues in the development of historic town settlement quarters’, providing an in-depth analysis of the settlements, from the point of view of physical fabric, as well as socio-cultural requirements. The identity of these historic towns are linked to the community spheres, and the cooperative process of the communities is essential. His concern was how to improve the quality of the dwellings, considering plot divisions, leading to lack of space, lighting, ventilations, etc. His presentation ended with definitions of terminology, of san-kirti (the synthesis of creative work), bikriti (discord of creative

works) and rudi (without original intention), and raising the question of how to deal with change. Dr Jharna Joshi, Ar Shova Maharjan and Ar M Qazi provided comments. Dr Joshi pointed out that the function of the open spaces are changing (agriculture, laundry, etc.), particularly with people moving indoors, so how can the courtyards be revived? Ar Maharjan explained how people require more space and even though there are regulations, people usually build taller buildings, constructing numerous additional floors. Ar Arif again provided a comparison to the situation in Bangladesh, suggesting that it is only possible to protect certain parts the traditional city, which is closely linked to the professions of the inhabitants, and provide mechanisms.

Dr Inu Pradhan Salike provided the third presentation on 'post-disaster reconstruction and traditional buildings', highlighting the change in buildings built after the earthquake, illustrating this with a study on Barpark. The buildings were built based on some standard designs, which might be strong, but do not take into account the requirement and cultural sensibilities of the community. The question that was raised was on the future of traditional buildings after a disaster. Dr Suresh Suras Shrestha, Ar Shova Maharjan and Dr Mohan Moorti Pant provided comments. Dr Shrestha explained that societies are changing, but the legislation has not been able to provide means of protecting traditional historic buildings, which clearly was the case also in Khokana. Ar Maharjan pointed out that all the settlements have their own identity, but during reconstruction only the strength of buildings were considered, while the lifestyle and culture of the communities still need to be studied. Dr Pant commented that many buildings were in need of maintenance even before the earthquake, and the policies of the government did not consider quality of the dwelling, ensuring that they are stronger, but not better.

The final presentation by Dr Jharna Joshi on 'heritage settlements, their identities and challenges', stated that the identity was based on the amalgamation of numerous attributes, which include monuments, houses, streets and squares, but also people, food, festivals, livelihoods, and events; it is where people live, work, play and make memories. The definition takes into account, age, form and scale, architecture and infrastructure and people and culture, and all these components need to be considered. The question that was raised, how to we should deal with the challenge of change caused by new aspirations, new possibilities, social media and globalisation. Dr Mohan Moorti Pant, Ar Shova Maharjan and Ar Kazi Arif provided their comments. Dr Pant remarked that we need to know how the settlements evolved to be able to understand their identity, with basic principle being the use of local resources, technologies and traditions. Ar. Maharjan stated that identity is based on both tangible and intangible aspects, and that is why open spaces and water spouts need to be revitalised. Finally, Ar Arif reminded us that we need to accept reality and that we can only protect certain part of our heritage.

Panel Discussion: Heritage and Urban Identity: Constraints of the Past

Session Moderator



Ar. Kai Weise

Kai Weise completed his Masters in Architecture from the Swiss Federal Institute of Technology, Zurich in 1992 and is presently a Doctoral Researcher at Durham University. He has been working as a planner and architect in the Himalayan Region, designing primarily educational institutions, and working on the municipal planning of Madyapur Thimi from 1997 to 2005. Since 2004, Kai Weise has been facilitating the establishment of management systems for World Heritage properties: Kathmandu Valley and Lumbini in Nepal, Samarkand in Uzbekistan, Bagan and Mrauk U in Myanmar, and worked on the Mountain Railways of India. After the 2015 Gorkha Earthquake in Nepal and the 2016 Chauk Earthquake in Myanmar, Kai Weise was the UNESCO consultant responsible for Culture Sector response and rehabilitation planning. He was a member of the Expert Team for the reconstruction of the Kathmandu. the Disaster Risk Reduction plan for Angkor in Cambodia.



Participant 1

Ar. Suresh Suras Shrestha

Cultural Heritage Expert, Joint Secretary, Head, Culture Division, Ministry of Culture, Tourism and Civil Aviation, Government of Nepal, [Executive Director - Narayanhiti Durbar Museum]. Education: PhD on Conservation and Management of Kathmandu Valley World Heritage, Property (Case study on Swayambhu Protected Monument Zone) in 2016; Master Degree in Nepalese History, Culture and Archaeology; Master Degree in Sociology; Bachelor Degree in Law; Bachelor Degree in Education from Tribhuvan University, Nepal; Secondary Level of School from Shree Sharada Secondary School, Thosey Bazar, Ramechhap, Nepal.

Activities: Due to keen interest in socio-cultural and legal research, worked for FREEDEAL for three years during 1999-2002 as a Research Associate. Associated with Patan Museum as a Gallery In-Charge for 20 months during 2005-2006 and entered into Department of Archaeology as an Archaeological Officer in 2006 February until May 2013 (Under-Secretary).



Participant 2

Ar. Inu Pradhan Salike

Dr. Inu Pradhan Salike has completed her PhD in Architecture in 2019 under CNRD scholarship. She is also alumni of DAAD scholarship program (for Master's degree) and COLOMBO plan of Indian Embassy (for Bachelor's degree). She is currently working at Department of Architecture, Pulchowk Campus, Institute of Engineering, Tribhuvan University. Her subject of interest lies in Climate change, Urban Disaster Risk Management, Hospital Preparedness for Emergency and Risk management of Cultural heritage. She has guided student research in similar topics and also worked in Centre for Disaster studies in Institute of Engineering. She has experience working with different agency like ADB, Unhabitat, UNESCO, UNDP-Nepal departments of Nepal government in the analysis of Risk Data, Vulnerability assessment of Kathmandu Valley, Hospital Preparedness for Emergency training etc. She is also vice president of ICOMOS Nepal and worked with Department of archeology-Nepal to analysis the reconstruction of Cultural heritage after 2015 earthquake. She has contributed on behalf of Center for disaster studies in Damage assessment data collection of affected districts during 2015 earthquake for Shelter cluster of Nepal jointly with ACTED initiative.



Participant 3

Ar. M. Qazi Arif

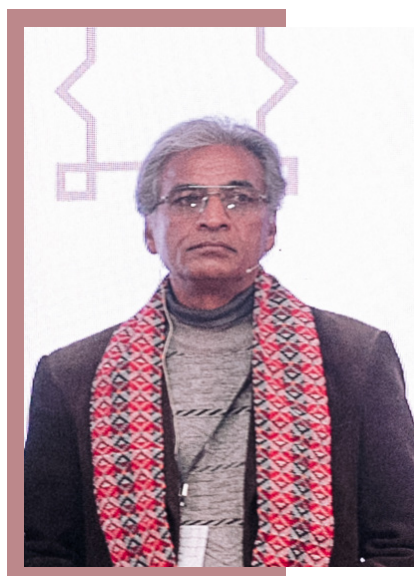


Qazi M Arif is an architect in practice and pedagogy for the last 3 decades. Having a Bachelor in Architecture from Bangladesh University of Engineering & Technology (BUET), he has an M Arch from the School of Architecture and Environmental Design of Kent State University, USA, where he was awarded the Outstanding International Scholar in 1997. Currently Ar. Arif is the Co Director of Community Architecture & Human Right Work Program of UIA. He is the Immediate Past Chairman of ARCASIA Fellowship. He is the past Chairman of ACGSA (ARCASIA Committee on Green and Sustainable Architecture), past Head of Architecture & Renewable Energy Sources Work program, UIA Region IV and a FELLOW & the Past General Secretary of the Institute of Architects Bangladesh (IAB). He has got working experience for a brief period in the USA following his graduate school in the late Nineties of the last millennium. He is involved in teaching as adjunct faculty in the

schools of architecture of Bangladesh University, BRAC University & State University of Bangladesh along with heading practice at ENVISION architects in Dhaka. Professional Practice and issues of Sustainability & Resilience are the topics of his interest of Practice & Pedagogy. He is the Principal Architect of ENVISION since 1999 which indulges in designing small & medium scale architectural projects ranging from single family-multi family residence to commercial and industrial buildings.

Participant 4

Dr. Mohan Moorti Panta



Mohan Moorti Pant is an architect and served for long as Professor in the Dept of Architecture, and Postgraduate Department of Urban Design and Conservation in Khwopa Engineering College. He did B. Arch (1982) and M. Arch (1990) in architecture from Tongji University, Shanghai, China. Since 1990's, research studies led him to the documentation of the historic development of town settlements of the Kathmandu Valley with focus in urban planning principles, urban design, and architectural heritage leading to PhD (2002) and Post doctoral research (2004) from Kyoto University, Japan. Dr Pant's published research works on the Kathmandu Valley urbanism are 'Stupa and Swastika' on Patan (2008), and 'Community and Structure of a Town--Thimi' (2019). Numerous other research works of Pant are published in journals and conference proceedings. His contributions on the study of Nepal's vernacular settlements

are Chimang of Mustang (2018), Thabang of Rolpa (2019), Taka of Rukum (2021), both Magar settlements, and a Tharu settlement of Simariya, Morang. He worked as Visiting Professor in Kyoto University (2019-2020), and is currently adjunct professor in Khwopa Engineering College.

Participant 5

Dr. Jharana Joshi

Jharna Joshi has more than twenty years of experience in architecture, conservation, tourism and teaching in Nepal, China, Hong Kong, USA, Vietnam, Greece, Pakistan and New Zealand. She has worked as a heritage and infrastructure specialist with national and international agencies as well as educational institutions. Her notable project includes the Bandipur Eco Cultural Tourism Project that developed Bandipur, a hilltop town in Nepal as a new tourism destination by promoting and preserving the local culture and heritage engaging the local stakeholders and international partner cities. Currently, she is involved in designing and restoring traditional buildings as well as teaching at architectural institutions and consulting in various projects. Jharna obtained her PhD from the Victoria University of Wellington (New Zealand) in 2019. Her dissertation is titled, Landscape aesthetics, tourism, and change: Case studies in Nepal. Previously, Jharna obtained her masters in historic preservation from the University of Pennsylvania (USA) and in the management of cultural landscapes from Jean Monnet University (France) after a bachelor's in architecture from Tsinghua University (China). Her passion lies in studying and preserving landscapes that include the built and the natural environments with the people and their culture at its centre.



Participant 6

Ar. Shova Maharjan

Shova Maharjan holds a Bachelor's degree in Architecture from Kathmandu Engineering College and a Masters in Urban Design and Conservation from Khowpa Engineering College. In 2012, she was appointed as an Engineer in the Department of Archaeology. Currently, Shova works in the World Heritage section where she is responsible for coordinating between stakeholders for conservation works, providing technical support, supervising, and guiding for the construction, conservation, renovation, and reconstruction of privately owned buildings within all Protected Monument Zones of Kathmandu Valley World Heritage Property. After the earthquake, Shova's main responsibility became the conservation and management of cultural heritages, which she finds interesting and challenging. She is mostly engaged with the conservation works of Kirtipur, Dakshinkali, and Kathmandu areas. Shova has successfully completed projects such as the restoration of Jalbinayak Temple, Adinath Temple, Loh: dega, Chilancho stupa of Kirtipur, Dakshinkali Temple, and Manakamana Temple. Currently, she is also involved in the JICA project for the restoration of Shiva Temple at Hanumandhoka Durbar.



02

Presentation Session: Identity and Heritage

Session Chair: Ar. Jibaraj Pokharel

The Identity & Heritage session was chaired by Prof. Dr. Jibaraj Pokharel, a conservation architect, former VC of the Nepal Academy of Science & Technology, and former Dean IOE/TU. The session included five presentations by various speakers. Bisma Sami Askari presented on 'Unraveling the City of Identities' in Karachi. Prajwal Hada talked about 'Architecture Style and Open Space as the Identity of Kathmandu Valley'. Anie Joshi focused on 'The Reconstruction of the Kasthamandap, the Eponym of Kathmandu'. Sumnima Bhandari and Sanjaya Uprety presented on 'Socio-Cultural Life and Architecture in borderland: A Tale from an Unchartered Territory'. Lastly, Dip Pandey talked about 'Grand Paradoxes in Place-Making: Experiencing 'Cityness' in Bharatpur'.

After the presentations, Dr. Jibaraj Pokharel put forward his observations about heritage and identity. He emphasized that heritage is about what the earlier generation transfers to the new generation and requires an understanding of history. Kathmandu has a profoundly interesting heritage, with traditional architecture and more temples and images than houses and humans. However, conservation efforts need to focus not just on buildings but also on the city or place in which they are located. Dr. Pokharel noted that city planning used to involve diverting the river towards the north, three roads going north-south, three going east-west, and a palace square at the center. Courtyards were then used to create a market square, a community square, and a domestic square, which helped to provide identity. He also mentioned Charles Correa's book, *The Open Landscape*, which highlights how merging quarters can create interesting spaces. While modern cities were inspired by Chandigarh, Dr. Pokharel believes that budding architects and urban planners will help steer urban design in a better direction and maintain the identity of the cities they work on.

Session Chair

Ar. Jiba Raj Pokharel



Prof. Jiba Raj Pokharel is a retired Professor of the Institute of Engineering. He is the Immediate Past Vice Chancellor and Academician of Nepal Academy of Science and Technology. He is also a former Dean of the Institute of Engineering and President of Nepal Engineers Association as well as Society for Democratic Thinking. An architect by Profession, Dr. Pokharel is the designer of Maya Devi temple in Lumbini.

At the present, he looks after Kantipur Engineering College in the capacity of Principal. He is the writer of books such as Architecture, Oh !Architecture, written in Shakespearean Sonnets, Sikchhak Sisya Sambad, written in classical Nepali meters, Patan Ko Krishna Mandir, written in folk style. Prof. Pokharel has developed technologies for disaster risk reduction such as fire resistant thatch roofing, landslide prevention technology and Earthquake damping technologies to name a few. He has recently completed an indigenous landslide prevention technology in Gorkha district.



Presenter 1

Ar. Bisma Sami Askari

A graduate from the Indus Valley School of Art & Architecture in 2007, Ar. Bisma Sami Askari is the Head of Design at Arshad Shahid Abdulla (Pvt.) Ltd., one of Pakistan's oldest and renowned architectural firms. She has worked on projects across the length and breadth of Pakistan, as well as internationally. She balances her projects by working on both commercial and socially responsible projects, which she believes extend beyond the realm of architecture, for the betterment and growth of society, thus enriching her architectural experiences.

Her passion to impart architectural knowledge and experiences has led her to teach at her alma mater and advise thesis students from different universities on many different occasions. One of the courses initiated and taught by her titled 'City Orientation', stems from her love for her city, Karachi, creating an awareness of the city and its unchartered areas in students, by them experiencing both the perils and quirks of the city with hands on experiences, honing a sense of ownership of the city, within the students.



Presenter 2

Ar. Prajwal Hada



Prajwal Hada is actively working in Architecture, interior, Landscape, Conservation as well in Teaching Architecture. The Founder of Prajwalhada N Associates 2003 AD work includes several project, including the CIVIL MALL which is largest MALL in Nepal. He is working in variety of project types including public building, Schools and college, Hospital, Hotel and Resort, Commercial and Private Residence. He received Master degree in urban planning from Institute of Engineering in 2011 AD, Nepal and Bachelor in Architecture from Bangladesh University of Engineering and Technology, Dhaka Bangladesh in 2001 AD. He is also working as lecturer at Institute of Engineering Since 2004 and Life member of SONA. After graduation he worked in Kathmandu Valley Preservation Trust to sharpen his knowledge in Nepalese architecture for a year and also worked with Ar. Gotz Hugmuller in restoration project of Garden of dreams project as site architect for another one year.

Presenter 3

Ar. Anie Joshi

Anie Joshi is a practicing conservation architect from Nepal with a Post-master degree DSA “Architecture et Patrimoine”, a specialization degree in Heritage and Conservation from ENSA-Paris Belleville in 2015. Since, she has been working in the cultural heritage sector including research, documentation and restoration of the monuments and sites in Nepal and the Himalayan Region with various national and international organizations.

After the 2015 earthquake in Nepal, she worked as a UNESCO Consultant at the UNESCO Kathmandu Office on various post-earthquake responses activities for heritage sites in the Kathmandu Valley. Later as an individual consultant for the government, INGOs and local committees, she has been responsible for architectural and damage mapping documentation as well as restoration of the monuments damaged during the 2015 earthquake. Working with multidisciplinary team of architects, engineers, archaeologists, historians, conservators and traditional craftsmen in various projects, she has enriched her experience in the cultural heritage domain from broader understanding of larger context to the minute details of the traditional construction techniques.



Presenter 4

Sumnima Joshi

Sumnima Bhandari is currently pursuing her bachelor's degree in architecture from Pulchowk Campus. Fascinated by the diversity in the lifestyle and culture she often finds herself travelling around different parts of the nation. Having been born and brought up in the northernmost hilly landscape of Kathmandu valley, Bhandari has witnessed the beauty of nature and culture from an innate perspective. Meanwhile, her final year thesis revolves around the issues of socio cultural and architectural response to the social tension in and around cross country borders, especially the Indo-Nepal border. Her underlying interest over anthropological and socio-political dimensions of architecture sets the tone for her research and storytelling.



Presenter 5

Ar. Dip Pandey

Dip Pandey is a Nepalese freelance architect who has been working in the field of architecture for over a decade. He was born and raised in Nepal, where he attended Sathya Sai Shiksha Sadan for his school education and later completed his intermediate level education from Birendra Sainik Awasiya Mahavidyalaya. In 2005, Dip enrolled in the Bachelor of Architecture program at the Institute of Engineering, Tribhuvan University, from where he graduated in 2010. After graduation, Dip started his career as an assistant lecturer at Kathmandu Engineering College. He taught design studios, basic design, and architectural drafting for a year before being promoted to the position of lecturer. During his time as a lecturer, Dip taught courses on contemporary and modern architecture, as well as the history of Nepalese architecture. Dip has been working as a freelance architect since 2013. In November 2021, Dip joined the faculty at Chitwan Engineering Campus, IoE, Tribhuvan University, as a full-time lecturer. He continues to teach courses on architecture while also pursuing his freelance practice.



KARACHI; UNRAVELING THE CITY OF IDENTITIES

○Ar. Bisma Sami Askari

Abstract

A city is an arena where we identify ourselves and interact with others and our environment; the city of Karachi, is an epicenter of interaction, transition and fusion of diverse communities and their many varied cultures and traditions. Karachi's DNA is a unique one; inherited collection of assets, history, demographics, ethnicities, linguistics, traits, and culture that distinguishes it internally and externally. Karachi is consistently transforming and adapting to the needs of its citizens, the eventuality of these changes bear consequences on architectural and urban spaces and their products in the context of the city's identity. This paper aims to explore and unravel the multi-layered, multi-faceted and diverse identities that the city of Karachi dons for its inhabitants.

24.8607° N, 67.0011° E // Latitudinal and longitudinally placements at 24.8607° N, 67.0011° E; 'Kolachi' or 'Kurrachee' or Karachi as many know it today, was originally founded by Baloch tribes from Makran and Balochistan, as a small fishing community. This village became a settlement called 'Kolachi-jogoth', which by the 18th century became an important hub and port trading across the Arabian Sea and recognized by the Greeks, Arabs and British alike. With origins dating back to the Bronze Age; Karachi is a city entrenched in history and culture. Archaeological excavations have unearthed a period going back to the Indus Valley Civilization; the earliest known urban culture of the Indian subcontinent. The port city of Banbhore was established before the Christian era which served as an important trade hub in the region, the port, known to the Greeks as Krokola, Morontobara port, and Barbarikon, a sea port of the Indo-Greek Bactrian kingdom and Ramya according to some Greek texts, while the Arabs knew it as the port of Debal, from where Muhammad bin Qasim led his conquering force into Sindh (the western corner of South Asia) in AD 712. Lahari Bandar or Lari Bandar succeeded Debal as a major port of the Indus; it was located close to Banbhore, in modern day Karachi. After missions to the area, the British East India Company captured Karachi in 1839 and the town was annexed to British India in 1843 by Major General Charles James Napier. Karachi was then made the capital of Sindh, and the British developed the first modern port city near Manora Island (now Manora Peninsula) was established during British colonial Raj in the late 19th century, from where the tale begins. The city was eventually connected to the rest of British India by rail in 1878 and public buildings were constructed. By 1880, the community was mostly comprised of indigenous Balochis and Sindhis. This development also led to many migrants to the city, including Arabs, Jews, Christians, Hindus, Parsis, Goan Christian, Chinese, Marathis, and Gujaratis, with a population that hit 105,000 by the end of the 19th century. By the time of Pakistan's independence in 1947, the city was a metropolis with just under one million people. Over the decades, the city by the sea, has experienced an influx of people from different ethnic backgrounds and cultures, with migrations from across the Indian subcontinent. Karachi has always welcomed all with open arms

and has become a home to refugees from numerous Muslim countries, namely Afghanistan. It has proliferated in the last few decades, and the metropolitan area has more than 23 million people, with a population density of over 24,000 people per square kilometer, or 63,000 per square mile, meaning Karachi is by far more dense than any other "megacity" with an urban population of more than 10 million except Dhaka and Mumbai. 'Mini Pakistan' as it is popularly referred to, Karachi is an assimilation or rather a melting pot of not only the country's ethnic diversity but that of the region as well, with neighbourhoods named after the many ethno-linguistic groups in the country. The buildings and streets are emblems of those who lived here before and who live here now, sharing tales of the past and while writing stories of the future. Lovingly referred to the 'City of Lights', Karachi has seen a number of dark days, from political upheavals to terrorism and corruption to drastic climate change effects yet the people of the city have stood strong, resiliently adapting to all difficulties that come their way, not allowing anything or anyone to dull the charm, charisma and shine of the city. Looking from the outside, the city is chaotic, crumbling at its seams and has many a problems, but what gives it its strength, its fortification is the people of Karachi. These Karachiites; with their deep rooted history, varying culture, diversified ethnicities, linguistics, traditions, rituals, practices, customs, food, architecture and how they inhabit the city or take ownership of what Karachi is and should be in the future, plays the crucial role in the city's identity. Hence, Karachi is not a city to be seen, but a city to be experienced with all its layered and multi-faceted identities. This paper aims to explore and unravel the multi-layered and multi-faceted and diverse identities the city of Karachi dons.

Keywords: Karachi, Ethnic and Cultural Diversity, Architectural Identity

ARCHITECTURE STYLE AND OPEN SPACE AS THE IDENTITY OF KATHMANDU VALLEY

O Prajwal Hada

Abstract

The Visual texture of the Kathmandu valley is changing day by day as the growth of the city and its population. This change is transforming City from brick to plaster and now more with glass and modern façade, losing its own character. Multiple style of Architecture and Technology without responding to each other to create uniqueness is totally missing. Such things can be more observe in Public Open Spaces and new open Plaza, where we cannot see any character carrying our own identity. This new transformation of green or brown field with modern reinforced cement concrete and glass structure not only destroyed its visual identity of space, it's also destroying the Image of city. The Public open spaces, both at community and city level, is important space to reflect architecture style which not only improve the culture ties and cultural control for future generations, it also define our past and present identity. To stop this trend of transformation and to start reverse cycle to maintain and redefine our own identity we should work on architecture practice to harmonies our city as it used to be in its past glorify History. Though there are some bye laws for heritage Zone and promotion for traditional Architecture style, due to lack of proper implementation of rules as well laws, it is failure in most of the cases, which turning known cities to unknown visual texture. Basically Kathmandu valley architecture is more with human proportions and scale, which make this valley architecture itself unique in compare to any architecture practice in history of the world. However now it is transformed to undefined scale competing with each other losing its proportion. We should understand the identity of open space with culture and environment created by our ancestor which reflect Cities identity, Architecture style and people beliefs of that period. Knowing all these facts we need to merge with new technology, materials of this modern age and style so that it regenerate our identity again and can reflect our cultural and harmonies city image back for new generations. For such vision we need to aware to all people and practicing such things from student level to institutional and mainly to those who are working in design and planning sector. Since many of us have known to these facts, from few years back specially couple of years after 2072 BS we can see some Trader Architecture style coming up to make more sense to revive our image back. Now a day most Architect and people understand that we need to preserve our own identity to stand ourselves in the world and it is reflecting in works. We need to recommend and make awareness to save our own identity of architecture as well as City. Also it is recommended that government and local authorities should urgently recognize the value of Identity of open space and public building Architecture style, which influences many people of community and city. The existing open spaces must be protected by the enforcement of laws. In order to make the open spaces responsive to the urban and culture need, such spaces need to be well defined in upcoming days for a good practice to revive our Image back.

KASTHAMANDAP AN ANCIENT WOODEN PAVILION AND THE EPONYM OF KATHMANDU

○ Anie Joshi

ABSTRACT

Kasthamandap, the wooden pavilion (in Sanskrit *kastha* means ‘wood’ and *mandap* means ‘pavilion’), located in the centre of Kathmandu gave the city its name. Occupying a large area of the Maru square situated on the historic trade route, Kasthamandap has been providing shelter to the travellers and traders for over a millennium. Various socio-cultural and religious activities carried out in and around the structure have animated the Maru Square. Though occupying half the area of the Maru square, its open plan has allowed for the continued activities from the square to flow into the monument. It is this relation of the monument with the people that created the dynamics in the square and has ensured the continued existence of this monument. When Kasthamandap collapsed during the 2015 Earthquake, the void it left in the Maru square and centre of Kathmandu was deeply felt by the people. The very identity of Kathmandu seemed to have been threatened. Various communities came together to ensure that the monument was rebuilt to its ancient glory.

Over the millennium, the relationship between the people and the Kasthamandap evolved, from being the centre of the cultural orbit to being the centre of the people's everyday life. This paper will examine how this monument has retained its identity of providing shelter and remaining the pride of the people of Kathmandu. Further, the relationship that evolved after its collapse in the 2015 Earthquake will be examined, leading to the discussion on how the continuity of this dynamic between the monument and its people can be ensured.

1. Introduction

The historic urban core of Kathmandu is characterised with the presence of innumerable squares and courtyards, a concept of a communal society living in a compactly planned areas. Dotted with monuments of various architectural style, scale and purpose, these squares in Kathmandu have been the lifeline of the communities living in and around them, ensuring the continuity of the rich traditional cultures of the Newars, aboriginals of the Kathmandu. From providing space for the cultural activities like feast and festivals to serving the everyday needs of the local community as market square, these public spaces have been critical in shaping the city. The monuments within the squares provide enclosed space for social, religious and cultural activities. Shrines and temples are where rituals take place while the rest houses and pavilions provide sheltered space for communal activities and platforms are provided to stage the performances. These squares become the centre of animation during the festive season. Among the numerous squares in Kathmandu, this paper will focus on the square at the Maru tole where the historic wooden pavilion of Kasthamandap is located. Kasthamandap, the wooden pavilion (in Sanskrit *kastha* means ‘wood’ and *mandap* means ‘pavilion’), located in the centre of Kathmandu gave the city its name. Kasthamandap is the oldest and largest standing monument of Kathmandu which with its unique open plan hall on three levels has been providing shelter and space for the various communities. It is this link of the monument and the people which ensured the standing of this monument over a millennium which shall be assessed in this paper.

Firstly, the paper will examine how the presence of Kasthamandap in the centre of the city has shaped the historic core of Kathmandu and the neighbourhood of Maru tole in which it resides. The changing function and use of this monument over the millennium and its association with various communities in the history shall be analysed in regards to its location at the centre of the city. Further, how this monument over the time became the identity and pride of the city giving its name shall be studied. The second section shall present how the collapse of the Kasthamandap during the 2015 earthquake impacted the space and its dynamic relation with the

people. This will help to assess if it was the monument itself or the location which created this dynamics. In addition, how the identity of the city and this monument changed with the collapse of the monument shall also be studied. Further this section will introduce various new communities associated with this historic monument during its rebuilding leading to the conclusion with discussion on how could the existence of this monument in future can only be ensured through continued dynamics between the monument and its people.

2. Kasthamandap, from centre of trade and culture to centre of people's life in Kathmandu

2.1 Monument giving identity to the city

The city of Kathmandu historically was divided into upper town, *Yambu*, and lower town, *Yamgal*, and the Kasthamandap lies at the northern perimeter of the lower town, *Yamgala*, to which it actually belonged to administratively. Here, we see that the division of the city into the two parts has been indicated by the location of Kasthamandap at its centre. Though Kasthamandap belonged to the lower town it should have been of great importance to the people of the Upper town as well which is indicated by the content of the inscriptions stuck inside the Kasthamandap. Many inscriptions found inside the Kasthamandap from different period in history, earliest to be of 1334 CE interestingly does not mention information on the monument itself but of the activities and donation for various activities performed in and around the Kasthamandap and its larger extent. The content of these inscriptions as information to general public or announcements also indicates Kasthamandap to be a public building of great prominence with accessibility to all since its ancient times.

When did the name Kasthamandap become synonymous to the city cannot be exactly dated but historical records show numerous examples where the name, city of Kasthamandapa as '*Kasthamandappure*', '*Kasthamandapamahanagare*' and '*Kasthamandapanagara*', being referred to, to identify the residence of the city since the 12th century CE. Literary Centenarian late Dr. Satya Mohan Joshi published a silver coin from the 16th century issued during the reign of King Mahendra Malla (1560-1574 CE) with the inscription '*Srimat Kasthamandupasyadhipati*'. (Joshi, 1962: 33) which he interprets as the 'Suzerain of Kasthamandap', the city named after this ancient wooden pavilion. The first graphical representation of Kasthamandap is seen in a 16th century pictorial diagram of Kathmandu Valley commissioned during the renovation of the Swyambhu Stupa where *Sriyamgaladesha*, the southern half of Kathmandu, also known as *Yamgala*, is represented by this iconic monument. (Slusser, Vajracharya Fuller 2005: 336). These records clearly indicate the long standing of the monument at the centre of the city and its importance for the identity of the city. Witnessing the numerous chariot festivals and processions, the *jatras*, that pass through the Kasthamandap throughout the year, it indicates how important this monument has been throughout the history for its location at the centre of the Kathmandu. The legend associated with the construction of the Kasthamandap by the Kalpabriskya using a single tree is also staged during the festival of Machindranath, on the day of Lagan Jatra where the chariot passes by the Kasthamandap indicating the importance of its location at the Maru tole. The 16th century pictorial diagram of Kathmandu Valley with the Kasthamandap indicating the Yamgal has people sitting on the projected balcony of the pavilion, which indicates the use of this building by public for observing the *jatras*.

It is also important to understand how this identity of the city linked to this monument of great importance continued in the contemporary society. With the establishment of the Guthi Sansthan and the Department of Archaeology, the government authorities took over the responsibility of conservation and protection of the historic monument in Nepal. It is noteworthy that, the Kasthamandap was taken as the first example in Hanumandhoka Durbar Square for a joint restoration project by Guthi Sansthan and Department of Archaeology. To set a model and standard for restoration work in Nepal, again, this monument of great significant both for the identity of the people and the city is taken as an example in 1966 CE. With this restoration project completed, the open accessibility of the monument to all was also restored. After the Nagar Panchayat elections in 1982 CE, the newly elected mayor of Kathmandu initiated the campaign to restore the identity of Kasthamandap linked to the city's identity by presenting the key to the city as a gesture to welcome many foreign dignitaries inside the Kasthamandap. Red carpet leading to the Kasthamandap during these events portrays how Kasthamandap continued to be emblematic to the city and its identity in contemporary society as well.

2.2 Monument bringing life in the square of the Maru tole

The socio-cultural significance of the square at the Maru tole is indicated by the presence of four public rest houses including the Laxmi Narayan sattal, Kabindrapur, Singha Sattal and the Kasthamandap. Though occupying half the area of the Maru square, the Kasthamandap with its open plan has allowed for the continued activities from the square to flow into the monument. It is during the social, cultural and religious events in the square that the monument provides the sheltered space for the people. Various ritual and cultural activities including the processions and performances takes place in Hanumandhoka Durbar Square area. It is during such activities, Kasthamandap become the meeting point where the preparatory activities are performed inside. During the Gai Jatra procession, the residents of the Kathmandu arrive here to get ready for the procession, the guthi members of Ta Chantan Guthi prepare the rice for the Panchadan inside the Kasthamandap which is then offered to the Gurju communities sitting in the square on the southern side of the Kasthamandap. Similarly, Sa Guthi members boil the wheat to feed the cow during the 1st of Magh each year inside the Kasthamandap while most of the ritual and cultural activities associated to this guthi are performed around Kasthamandap. With its sheltered large hall, multiple activities continue in this monument without just a community having its claim onto the monument. Since 1998, Anjali Maskey representing the universal sister organises Bhai Tika ceremony at the Kasthamandap in Tihar every year.

The 1860s watercolour painting by Henry Ambrose Oldfield records the architecture of the Kasthamandap and its context within the busy square of the Maru tole. This painting illustrates the makeshift market within the square and its extension onto the plinths of the monuments which still can be seen to have continued till date. Further in the painting, the extension of the shops on the south east corner of the Kasthamandap which faces onto the square and along the crossroad of two historic roads is seen which continued till the 1966 CE when a major renovation of the monument was done and the ancillary structures and residents were removed. Even after the renovation in the 1966, the market activity continued in the square. However, with the picket fencing introduced around the monument to restrict misuse, the extension of the market into the monument was significantly reduced. However, the makeshift stall owners seems to continue the storage of their materials inside Kasthamandap. Later in the early 1980s many sections of the picket fencing is seen to have been damaged and the market slowly extending into the monument mainly to the southern east corner and the eastern entrance area. This community behaviour of encroachment has been allowed again by its design whose primary function was access to all.

Kasthamandap is in the memories of many local living in the neighbourhood as a space for social interaction. Childhood memories of hanging out with friends to play inside the Kasthamandap are shared by many of the local residents. Many older generations as well as younger ones continue to visit Kasthamandap regularly to meet their friends. It is also a place for many devotees to perform rituals in presence of the Brahmin priest

who install themselves inside the Kasthamandap during the day. Social activities like blood donation, fundraising stalls were also put up in the Kasthamandap where as one of the resident living to the western side of Kasthamandap recalls the memory of having gotten her *nagarikata*, the national ID, from a stall placed inside Kasthamandap. Its location at the centre with the market square outside and an open hall inside had allowed all these activities to continue. People who use it for their purpose should also be responsible for cleaning and maintain the monument which was not the evident in the early 21st century. Being open, local community also reports of many incident of misuse of the monument including the beggars sleeping and polluting inside the monument and the monument becoming haven for the drugs abusers in the dark. This changing unfavourable interaction of the monument and the people aggravated the deteriorating condition of the monument.

2.3 Monument providing shelter

Building rest house along the trade routes and pilgrimage routes was meritorious act as it provided shelter to the travellers and traders. Kathmandu being at the centre of these historic routes has many such public buildings built since the ancient times. Maru tole with its square lies within the crossroad of the historic trade route and the main thoroughfare between the upper and the lower town of Kathmandu where along with Kasthamandap, three other rest houses are located. The function of the Kasthamandap as shelter for these visitors is supported by its architectural plans of open halls, allowing a large number of people travelling along Kathmandu to find shelter in it.

Referring to the *Himvata Savyata*, Literary Centenarian late Dr. Satya Mohan Joshi glorifies Nepal as the centre of the scared Himalayan landscape where learned people from the region travelled back and forth. Kasthamandap being the centre of Kathmandu Valley, which historically was known as Nepal, it became the place for these learned people to stay during their travel to the Himalayas. The continued use of this monument by the pilgrim travellers including the Gorakhnathis whose first reference of connection with the Kasthamandap is attested in 1417 CE inscription existing inside the Kasthamandap before the 2015 earthquake. The donations made to perform the Jogi Chakra puja in these various inscription by the pilgrims indicates the continued use of this pavilion as the rest house by the Gorakhnath community. In later period many Kaplis families used Kasthamandap as their resident which is also evident in the painting by Oldfield where the monument is provided with many enclosed spaces for residential quarters. It is stated by Ramesh Jung Thapa that 53 families were living inside Kasthamandap when the major renovation of the monument was done in 1969.

Historically Kathmandu lies within one of the trade routes between India and China. Along the trade route numerous market places would develop and it would also require the traders to halt overnight in different areas. Kasthamandap as a wooden open pavilion also served to the need of these traders with a market

square immediately outside the sheltered space. The present day demographics of the Newar merchant community surrounding the square in Maru tole indicates the thriving marketplace it should have been during the existence of the trade route between India and China via Kathmandu. Reminiscence of the market place is still replicated in the early mornings and late evening hours when the market is allowed to be installed nowadays. The morning market is dominated by the ritual offerings while the evening by the daily supplies of fruits and vegetables both of which now caters to the daily needs of the local community in which it is located. The significance of the market at the centre of the city of the ancient time has however been lost with the time. With the vehicular traffic creating chaos during these busy market hours, the ambience of the market should have also changed over time.

Despite of the discontinuity of the Kasthamandap as the shelter for traders and traveller, it still is a place of shelter for the vendors and passer bys during extreme weather events. It still continues to be the rest house for the national and international tourists who visit the Kathmandu Durbar Square.

3. Impact of Gorkha earthquake in 2015 CE

3.1 Threat to the loss of identity of the city with the collapse of Kasthamandap

During the morning of the 25th April 2015, there was a blood donation campaign taking place inside the Kasthamandap. It was almost noon and the event was coming to closure with mostly members of the organising committee left inside the monument when the earthquake struck. Few of them were able to run out while remaining people were stuck inside when the Kasthamandap collapsed. The people living in the Maru tole were horrified by the collapse of the historic monument; others were shocked to hear the news of its collapse and could not believe it until they saw it for themselves. With the collapse of this historic monument which even survived the Great Bihar Earthquake in 1934 CE, the local community projected the extent of the damage that might have taken place in Kathmandu. As people were buried inside the rubble, human rescue became urgent and was immediately organised by the people present around with the means available. Though human rescue was the priority, local community was also salvaging the historic architectural elements of the Kasthamandap manually. Later with the mobilisation of the Nepal police, JCB was brought in to ease the rescue effort. The use of JCB however did damage the remains of the monument, its foundation plinth. Kasthamandap, the historic wooden pavilion has been standing at the square in the Maru tole for over a millennium so each of its historic components had a story to tell about the history and the personal memories still afresh in the minds of the local community. With the collapse of the monument there was danger that there will be loss of the rich history it carried and memories associated with it if this monument could not be rebuilt to its ancient glory. With the scale of destruction in the country, the residence of the Kathmandu doubted the priority the government would be putting forward to rebuild this historic monument which

played a significant role for the local community and symbolised the pride of Kathmandu. Local communities initiated various efforts to ensure that Kasthamandap be rebuilt as soon as possible. The mural painting of the Kasthamandap at the prominent location of Maitighar produced by the artist community was manifestation of this uncertainty. Local community organised various events like marathon and cycling events starting at the Kasthamandap with intention of promoting its rebuilding. Various discussions were also organised in community level as well as local government level to ensure the rebuilding of the Kasthamandap as soon as possible.

With the loss came also the opportunity, the opportunity to do the scientific research on the founding of the Kasthamandap. With the superstructure collapsed and parts of the foundation damaged, the team of archaeologists were able to do archaeological investigation of the foundations producing scientific evidence that the monument's foundations dates back to the 7th century. These new findings about the monument and its historicity gave new hopes that the oldest dated monument of Kathmandu which gives the city its name would be rebuilt following the traditions. This however became doubtful when the government proposed to rebuild the Kasthamandap using foreign interventions and through the standard procurement process. This was when along with the local community, heritage professionals and people from different parts of Kathmandu stood forward alerting the responsible authorities for a major disaster that was about to happen which could threaten the loss of the identity of Kathmandu if this monument was rebuilt disrespecting the traditions. At this point of time, the dialogue of the reconstruction turned from building it as soon as possible to building it respecting the traditions in terms of material, design, techniques as well as procedures. The rebuilding of the Kasthamandap was now not only linked to the historical identity of the city but traditional architectural identity of the city.

The loss of the Kasthamandap with the collapse of the monument and the delay of the rebuilding of the Kasthamandap for three long years due to procedural issues however did allow the interaction between various communities to understand the importance of this monument in various levels; personal, communal, professional, national and international.

3.2 Impact on the continued interaction between the monument and the people

In recent practice Kasthamandap became the meeting place for the visitors of the Kathmandu Durbar Square, like a landmark. It provided vendors and passer bys shelter during extreme weather events and resting place for the visitor after a tiring walk around the durbar square. With the collapse of the monument, this sheltered space was lost. However, its location being central, it continued to remain as a landmark and people visited to see the loss of the monument that gave the city its name. During the aftermath of the disaster, shelter tents were installed onto its plinth and the open space created by the collapse of the monument became gathering space during the aftershocks which continued for

months. The local community put up shelter tents on the plinth of the collapsed Kasthamandap to guard the artefacts fallen from the collapse monument which reflects their deep concern and connection with the monument and its hopeful rebuilding. For the local community, the value of the monument lied in various elements of the monument which had stories and memories engraved in it.

The emptiness felt in the Maru tole with the collapse of Kasthamandap was most prominent to the locals living immediately around who mentions that the entire square looked empty with the monument gone. It completely changed the perspective while one entered the square from different directions or from the narrow alleys around. For them the identity of the space that they were used to was lost with the collapse of the monument. Kasthamandap was part of their everyday life even though many of them did not use to enter inside the monument. For many local residents it was part of their morning ritual to visit the four Ganesh and Gorakhnath and this discontinued with the damaged statues being relocated inside the Palace complex. They were the first responders for the emergency rescue and also to show concern for the rebuilding of the Kasthamandap as soon as possible as for them more than its identity linked to the city, it was linked to their everyday life. It took several months for the people in the locality to come out of their trauma and the square picking up its regular activities. The resilience of the community was tested at this difficult time of personal loss. And the communal cultural and religious activities became the means for people to get over their grief. With the preparation for the festivals and Guthi activities, the Maru tole was reanimating while the preparatory activities also continued on the plinth of the collapsed monument. The shelter was lost but the value of its location was still intact. During the *jatras*, people gathered at the plinth of the Kasthamandap to witness it passing by the Kasthamandap like they did when the monument was still intact. It continued to be the meeting point for the various social and cultural processions. This clearly indicates that the central location of the Kasthamandap has been of great value to this monument and its interaction with the people.

In a larger community of Kathmandu, with the loss of the monument arose the sentiment of the loss of the identity of the city. People of different age and profession started raising their voice towards the rebuilding of the Kasthamandap. This larger community engaging for the efforts towards the rebuilding of the Kasthamandap was mainly concerned with the monument and had no direct interaction with the monument in a regular basis. For many it became the opportunity to do research on the history, intangible culture and traditional construction technique of this unique architecture. 2015 Earthquake became a critical point in the history of Kasthamandap where a wider range of communities were coming together at the same time to contribute for the continued existence of this historic monument. It was during this process that the community associated with Kasthamandap grew from the local communities to local government, local artisans to

national and international professionals and scholars who came together to rebuild the Kasthamandap to its ancient glory.

4. Conclusion

The Kasthamandap, standing in the centre of the city over a millennium has been subjected to various changes with the changing social, economical, cultural and political scenario in the city. The dynamics of the people, place and the monument has allow the Kasthamandap to retain the identity of providing shelter and remaining the pride of the people of Kathmandu. Its function and user communities have changed over time so has its custodian with the formalisation of the protection of the heritage under the Department of Archaeology. With these changes also came the challenges of ensuring the regular maintenance of the monument. With multiple stakeholders, this major responsibility was overlooked with minimum regular maintenance taking place degrading the condition of the monument which ultimately became one of the reasons for its collapse during the Gorkha Earthquake 2015.

However, in the time of the great loss the earthquake brought with the collapse of the monument, diverse communities came together to ensure its rebuilding. For some, it was part of their daily lives and routine linked to their religious, social and cultural activities while for others it was the sense of pride linked to its historicity and great architecture of the ancient times. With the loss also came the opportunity of interaction between various communities linked to the Kasthamandap and exchange of their stories, memories and knowledge associated with the monument. The rebuilding of the Kasthamandap with participation and support of various communities reflects the sense of responsibility each one of them took to rise the monument to its ancient glory but the major question now remains is how do we ensure its continued existence in the future. So here arises the questions who shall be responsible for its regular upkeep and maintenance?

The local community living in the Maru tole were well aware of the degrading condition of the monument before the earthquake but they never imagined it would collapse someday within blink of a second. With this experience of the collapse in the 2015 earthquake, the local communities now realises the need of ensuring the regular maintenance and emphasises on it. The Kasthamandap Reconstruction Committee involved in the research, documentation and rebuilding of the Kasthamandap also concludes that the lack of maintenance leading to deterioration of the structural wooden members have contributed significantly for the collapse of the Kasthamandap during the 2015 earthquake.

Traditionally, the regular upkeep and maintenance were done by the guthis but with limited resources of the private guthis and passiveness of the Guthi Sansthan, it is confirmed that these existing guthis will not be able to take this major responsibility. In addition, without the participation of the communities who have the knowledge and skill, it would be difficult to perform such a task. With still multiple stakeholder who actually came together

during the reconstruction, it is a big opportunity to revive this traditional concept of Guthi adapted to present circumstances and requirements. With due consideration to ensure the continuity of the Kasthamandap and its values linked to the communities associated, The Kasthamandap Reconstruction Committee has proposed the formation of the Kasthamandap Management Guthi with participation of the authorities, local community including Guthi members, artisan community and technical community. With the completion of the reconstruction, slowing these communities who came together to ensure the rebuilding are dispersing. So it would be very important to have a formal setup with predefined responsibility of the upkeep and regular maintenance to be put in place soon possible rather than waiting for decades to setup a restoration project when an urgent situation takes place.

5. References

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Figure 1 Map of the core city of Kathmandu with the central location of the Kasthamandap at the Maru Tole. Map: Ateliers AJ (Based on 3 maps: Ground survey map by Land Revenue Office in 1999, Buddhist Kathmandu by Anil and Bijay Basukala, Niels Gutshow and Yogendra Shaky in 2001 and Google earth in 2020)



Figure 2 The 16th century coin issued during the reign of King Mahendra Malla with the inscription 'Srimat Kasthamandupasyadhipati' Photo: Anie Joshi



Figure 3 The 16th Century pictorial map of Kathmandu Valley commissioned during the renovation of the Swayambhu Stupa with Yamgala being represented by the Kasthamandap. Photo credit: Mary S. Slusser, On a sixteenth-century Pictorial Pilgrims Guide from Nepal



Figure 4 Red carpet leading to the Kasthamandap decorated to welcome Queen Elizabeth II in 1986 Photo credit: Tej Ratna Tamrakar

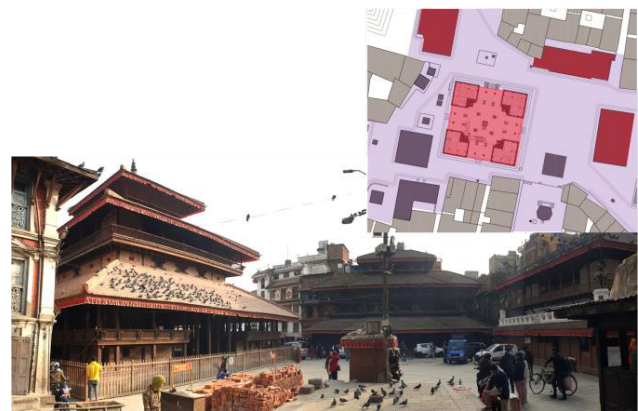


Figure 5 Kasthamandap with other three sattals in the square at Maru Tole Map and Photo: Anie Joshi



Figure 6 Crowd extend into Kasthamandap during an event in the square Photo Credit: Ananta Ram Baidya



Figure 7 Kasthamandap with permanent stalls on the southern perimeter before the 1966 restoration Photo: Ganesh man Chitrakar, 1965



Figure 10 Mural Art of Kasthamandap prepared by the artists at Maitighar Photo: Bhishan Rajbhandari



Figure 8 Market extends into the Kasthamandap in early 1980s Photo: Department of Archaeology



Figure 11 Crowds observing Jatra from the plinth of collapsed Kasthamandap Photo credit: Maru Twa Pucha facebook page



Figure 9 The ongoing rescue after the collapse of the Kasthamandap in 2015 Gorkha Earthquake Photo: Kiran Chitrakar



Figure 12 The chariot procession during the Kumari Jatra passing by the Kasthamandap Photo: Anie Joshi

SOCIO-CULTURAL LIFE AND ARCHITECTURE IN BORDERLAND: A TALE FROM AN UNCHARTERED TERRITORY

○ Sumnima Bhandari Sanjaya Uprety

Abstract

The binary concept of space is the characteristics of the border and boundary to include the limits or discontinuities in space. Within the purview of the political meaning of a separate nation, the term border refers to territorial lines of division as well as socio-cultural boundaries. In a conflict situation, territorial division and socio-cultural differences are associated with strong notions of national identity. Such identities are based on lived experiences of everyday life and expressed in material and non-material practices of the local people living in the areas near disputed borders. This paper aims at highlighting the identity issues based on the lived experience of local people in a disputed and uncharted border village of Susta as a representative case of borderland communities spatially distributed along an 1800km long stretch of the Indo-Nepal border. The exploratory case study was used to collect data that involved direct field observations, interviews, and social discourse methods. The qualitative data collected were analyzed and presented in the form of stories and narratives. The study finds that while there is a strong sense of national identity characterized by the notion of us and them, the local identity is porous when it comes to social and cultural relationships between the communities divided by a territorial line of division. The community tries to make up for the sense of loss of national identity through symbolic activities as manifested in architecture, social-cultural practices, and economic activities.

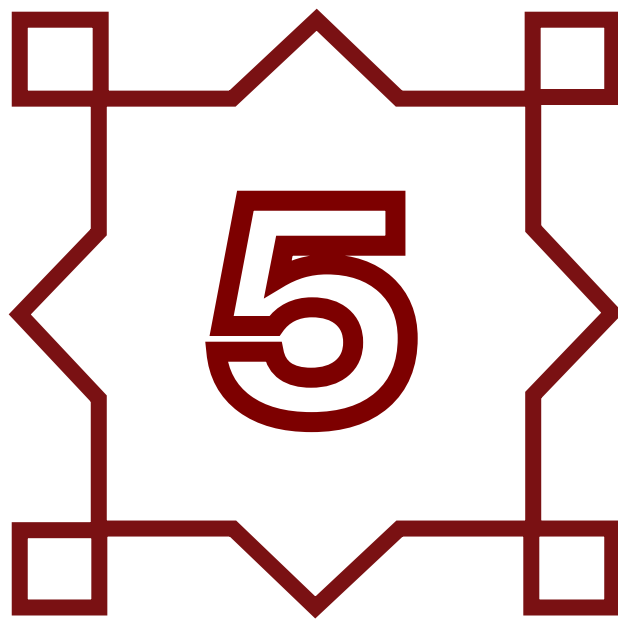
GRAND PRADOXES IN PLACE-MAKING: Experiencing ‘Cityness’ in *Bharatpur*

○Ar. Dip Pandey

Abstract

This paper studies the significance of contemporary architecture in defining the urban landscape of *Bharatpur*, *Chitwan*. Drawing insights from theories on city, the paper aims to explore place-making, imageability and genius loci. From a cursory visual analysis, the built environment of *Bharatpur* exhibits a rather impoverished urban character – bizarre architecture failing to create public open space amid engulfing consumer culture – typical to many other coeval cities in Nepal leading to a difficulty in orientation. Since a city is ultimately more about how people are connected to the place than the materiality of its built environment, it should orient towards cultivating transcendental values as can be deciphered in many exemplary cities from the past. The lived experiences of key informants on cityness of *Bharatpur* converge with opinion by the experts on tragic urban consciousness stirred by a sudden exposure to western culture. The paper concludes by identifying paradoxes in place-making and recommends a serious deliberation and discourse to form a commonly shared vision of the city as a way forward before it is too late.

Keywords: Paradox, Place-making, Cityness, Imageability, Orientation



SUSTAINABILITY AND DESIGN

03

Panel Discussion: City Transformation with Sustainable Development

Session Moderator: Ar. Tushar Sogani

The Plenary Session on “City Transformation with Sustainable Development” was a crucial event at the conference. The session was moderated by well-known architect Ar. Tushar Sogani, who is the Chair ACGSA, President IIA Rajasthan Chapter, and Principal Architect TSDPL. The panelists were Dr. Sanjaya Uprety, Mr. Autif Sayyad, Ar. Hisila Yami, Dr. Daniel Neyer, and Ar. Thomas Cheung. The discussion aimed to address the challenges and opportunities in transforming cities towards sustainable development.

Session Moderator Ar. Tushar Sogani highlighted the importance of sustainable development in city transformation and presented 10 sustainable features that cities require to foster green infrastructure. He emphasized the need for carbon neutrality, resilience, adaptability, self-contained social neighborhoods, zero-emission transportation systems, making space for nature, energy innovations, energy-conscious architecture construction, drainage and waste management systems, and biophilic architecture. Dr. Sanjaya Uprety’s presentation traced the evolution of sustainable development from the industrial revolution, which led to a mechanistic view of nature and the exploitation of natural resources. He highlighted the problems that have arisen as a result of this development and discussed the different planning traditions in Europe and Nepal. Uprety introduced the idea of the sustainable triangle and discussed the different forms of ecological thinking that have emerged, such as shallow ecology, deep ecology, social ecology, and ecofeminism.

Autif Sayed discussed the importance of green buildings in combating climate change and emphasized the need to measure whether a building is truly green or not. He discussed the responsibility of architects in making green cities and taking the right decisions. Autif mentioned the growing demand for air conditioning, particularly in South and East Asia, which is causing significant energy consumption and air pollution. Dr. Daniel Neyer discussed the four principles for sustainable development, which are efficiency first, optimization of building and active systems, the inclusion of renewable energy, and increased comfort at a certain cost. He emphasized the importance of reducing energy demands, especially peak loads, and avoiding air conditioning to reduce greenhouse gas emissions. Dr. Neyer provided examples of energy-efficient HVAC systems in Guangdong and discussed the need

for conscious heating and ventilation systems. Ar. Thomas Cheung emphasized the need to consider social, cultural, and economic factors before deciding which buildings to keep, demolish, or modify. He argued that local professionals are best suited to understanding the social needs and cultural identity of their city and should be involved in decision-making alongside policymakers. Cheung stressed the importance of timing, resources, and professionals in the transformation process, as well as the adaptive reuse of existing buildings to match current social requirements. Architect and politician Hisila Yami gave a presentation on city transformation and sustainability, exploring the political aspects of city-making and the importance of designing spaces that can influence community behavior. Yami emphasized the need to consider gender equity in city planning, pointing out that women often face barriers to accessing public spaces and calling for the creation of safe, accessible spaces for women. She also highlighted the role of women in sustainable housing and urbanization, and the need for architects to turn houses into sustainable housing and urbanization into sustainable urbanization. Yami further noted the importance of considering the impact of globalization and digitization on living and working spaces, as well as the need to incorporate the animal world into city planning. She stressed the role of anatomy and diverse food intake in promoting sustainable housing and urbanization, and concluded by calling on architects to take a global responsibility in designing for a sustainable future.

During the subsequent discussion, moderator Ar. Tushar Sagoni asked Dr. Sanjaya Uprety about the challenges of achieving sustainability without commercializing too heavily. Dr. Uprety responded that there are numerous challenges, including market politics, societal awareness, education, and the need to customize solutions for local contexts. For instance, developers may push energy-efficient air conditioners without realizing that alternative materials may be more sustainable in the long run. He also called for government investment in sustainable solutions.

Mr. Autif Sayyad emphasized the importance of understanding clients' needs and finding sustainable solutions to their problems, rather than resorting to expensive, environmentally damaging shortcuts like air conditioning. He suggested that architects needed to work with building owners, investors, and other stakeholders to promote sustainable design. Dr. Daniel Neyer noted that research on energy efficiency needed to be adapted to local climates, and emphasized the importance of adapting design guidelines to specific locations and situations. He stressed the need for scientific work and monitoring to inform design decisions.

Overall, the discussion highlighted the complex challenges of achieving sustainability in architecture, from political and societal issues to the need to adapt to local contexts and balance economic concerns with environmental responsibility.

Panel Discussion: City Transformation with Sustainable Development

Session Moderator



Ar. Tushar Sogani

Tushar Sogani graduated with a degree in architecture from Malaviya Regional Engineering College in Jaipur, and he currently serves as the chairman of the Rajasthan chapters of the Indian Institute of Architects, GEM Rajasthan Chapter, and the Arcasia Committee on Green & Sustainable Architecture (ACGSA). (An Association of 21 Countries) and Co-Chairman ASSOCHAM – Rajasthan State Development Council, as well as an exclusive member of the Government board of experts established in accordance with the state's construction byelaws.

He belongs to The Indian Institute of Architects as a fellow. His aim is to always look for a sustainable architectural solution that will satisfy the client while also taking the local context and conditions into account. He has also built a number of green structures that are not just energy-efficient but also sustainable for the surrounding ecosystem.



Participant 1

Dr. Sanjaya Uprety

Dr. Uprety holds a bachelor's degree in Architecture from SPA, New Delhi, MSc in Urban Planning, and Ph.D. in Architecture from TU and has over 20 years of experience working in Nepal and Bhutan. He currently serves as the associate professor and head of the Department of Architecture, Institute of Engineering of Tribhuvan University. He has expertise in architectural design, and urban planning focusing on energy efficiency and disaster risk reduction. His works range from design of TU management building and others, smart city planning of Lumbini, Strategic Plans and Risk Sensitive Landuse Plans of several municipalities. His research interest covers the energy efficient and sustainable buildings, disaster resilient planning, architecture and planning pedagogy. He has presented over two dozens conference papers within the country and beyond. He served as a thematic group member of "housing and settlement" in Ministry of Urban Development for the preparation of National Adaptation Plan (NAP) and was contributory author for the Nepal's National Reports of Habitat III, Smart City Indicators, National Urban Resilience Scorecards and energy efficiency guidelines. He has several publications on energy efficiency, urban planning, DRR and conservation to his credit in both national and international journals.



Participant 2

Ar. Autif Sayyad

Ar. Autif Sayyad leads the South Asia Green Building program for International Finance Corporation, the private sector arm of the World Bank Group. The program aims to mainstream construction of resource efficient buildings through targeted investments, setting of market standards, and government policies. Autif has supported mandatory Green Building codes for 7 national and local governments and facilitated green building code compliance for over 18 million square meters of built space. He is currently facilitating certification of more than 100 projects using IFC's EDGE green building certification. Autif also led the development and implementation of IFC's Green Building course that has been delivered to students in over 30 universities globally. A trained Architect and Building Sustainability Expert, Autif previously worked with Johnson Controls in USA as an Energy Program Manager. He has over 18 years' experience consulting governments, building developers and designers on resource efficiency.



Participant 3

Ar. Hisila Yami



Ar. Hisila Yami is a renowned architect, educationist and political figure from Nepal. After completing her high school education from Kanyamandir High School, Yami went to Delhi, India, where she enrolled at the prestigious School of Planning and Architecture in 1979. She completed her Master's degree in Architecture from the University of Newcastle upon Tyne, UK in 1995. Following the completion of her Master's degree, Yami returned to Nepal and resumed her teaching career at the Institute of Engineering in Pulchowk. In 2007, at the age of 48, Yami was appointed as the Minister of Physical Planning and Works in the Nepalese government, followed by the Minister of Tourism and Civil Aviation in 2008, and Minister of Land Reform and Management in 2011. In August 2011, while serving as a member of the legislature, Yami became the First Lady of Nepal when her husband, Baburam Bhattarai, was appointed as the Prime Minister of Nepal. She

continues to inspire young architects and engineers in Nepal, and her contributions to the field of education and politics have earned her respect and admiration both at home and abroad.

Participant 4

Dr. Daniel Neyer



Dr.techn. Daniel Neyer is senior researcher at the Unit of Energy Efficient Building at University of Innsbruck, Austria. In this role, he is Project Manager of the SWITCH-Asia founded Projekt BEEN – Building Energy Efficiency in Nepal. Further, he is Managing Director at neyer brainworks an certified consulting engineering office for renewable energy, building services and energy efficient buildings. In 2021, he co-founded and served as Managing Director of the social enterprise – TWIGA Sun Fruits, which is providing turnkey solar heating/cooling off-grid solutions for the agrifood sector. Currently he is building up an organic pineapple drying manufactory in Uganda. He is a mechanical & renewable energy engineer holding a PhD in technical sciences and gathered more than 15 years of R&D and professional experience in SCP relevant topics. His focus is on assessment, benchmarking and development of innovative solar heating and cooling systems in combination with energy efficient buildings and processes.

Participant 5

Ar. Thomas Cheung

Thomas Cheung graduated from the University of Hong Kong with the degree of Bachelor of Arts in Architectural Studies (1st Hon.) & Master in Architecture. He obtained his professional recognition in 1996. He has been teaching architecture in the HK Chu Hai College from 1998 and was the Head of their Department of Architecture from 2003 to 2004. He led the Department to obtain the first local architectural degree program accredited by the HKCAA.

In 2004, he formally set up his own practice in Hong Kong. He has represented the Hong Kong Institute of Architects (HKwIA) to attend various ARCASIA International Events on architectural related matters since 2011. He was the HKIA Council Member since 2019 and the Vice-President in 2021 to 2022. He is now the Chairperson of the ARCASIA Committee on Social Responsibility (ACSR) & the HKIA Honorary Secretary from 2023 onwards.



03

Presentation Session: Sustainability and Design

Session Chair: Ar. Adrianta Aziz

The Sustainability & Design session was chaired by Architect Adrianta Aziz. In his opening remarks, he highlighted the alarming situation of rising greenhouse gases, melting ice caps and the disappearance of flora and fauna. While the damage caused to the environment might not be reversible, he emphasized the importance of minimizing further harm through sustainable architecture. The session aimed to explore various ways of reducing the negative environmental impact of buildings by using materials, energy and space efficiently. The session chair then called upon the speakers for their presentations.

The first presentation was by Vinit Mirkar, who discussed the Informality of the City through Street Market - Case Study of Mumbai. Varsha Ashoka Patra and Amit Ashok Bhattacharya presented on Eco-Community Development at Kusumi Village, Similipal, India, which aimed to create sustainable living solutions. Samikshya Kandel and Luna Thapa presented on the Modern Urban Space of Pokhara, Issues and Challenges, focusing on a case study of the walking trail at Lakeside, Pokhara, Nepal. Shreenika Manandhar talked about Juddha Sadak - New Road to Our Identity, which aimed to preserve the cultural heritage of Nepal's roads. Lastly, Jit Kumar Gupta spoke on Architecture and Architects: Re-defining Sustainability, Environment and Ecology of Human Settlements.

The session chair emphasized that sustainable architectural design and green building are essential to minimize the negative impact on the environment. The UN Global Status Report 2017 shows that buildings and construction sites are responsible for 36% of global energy consumption and 39% of energy-related carbon dioxide emissions, making them one of the largest contributors to environmental harm. The session concluded with a call to apply the available knowledge and best practices in sustainability to minimize the harm caused to the environment. Architects should be responsible for using our planet's resources efficiently, keeping it green and natural, for the survival of future generations. The session emphasized that sustainable architecture is crucial to creating a healthy and happy future.

Session Chair

Ar. Adrianta Aziz



Ar. Adrianta Aziz is an Architect and Educator, a partner of AR RAD Architects and ARN Consulting and Training, which is the first architectural training company in Malaysia. He graduated from UiTM in 1997 and from Oxford Brookes, UK in Architecture and Urban Design in 1999. Upon returning from the UK in 2000, he developed different types of projects in Malaysia and currently he is involved in several place making projects for various local authorities in Malaysia. He is a Certified Trainer and has developed a learning platform programme named BeAr, LAP, ReLAP and PPW, sharing professionalism with young architects for the last 10 years. He has helped more than 400 registered young Architects in Malaysia. He has conducted many seminars and programmes related to building industry and professionalism. He is the PAM Malaysia Committee chairman for Education for the year 2021-2022 and Deputy Chairman of ACAE - ARCASIA Committee Architecture Education. Ar. Adrianta Aziz actively gives public talks in various events for organizations such as Developers, Universities,



Presenter 1

Ar. Vinit Mirkar

Ar. Vinit Mirkar is the Principal at IES College of Architecture, Mumbai. He graduated from Academy of Architecture in 1996 and has worked for various architectural and interior projects for the last 23 years Pan-India. He completed his M.Arch (General Architecture) in 2009 with first class and currently pursuing PhD in architecture at the Jamia Millia Islamia University, Delhi.

He was also Program coordinator for 6 years of M.Arch (Environmental Architecture) conducted under YCMOU and guided several students Dissertations in various current environmental issues. Involved in research activities through his institution, he has published several papers and conducted workshops and lectures on research in various architectural institutions. He has been appointed as Member of Board of Studies at the MGM University, Aurangabad, Dr. BAMU, Aurangabad, and Dr. BATU, Lonere. Fellow of IIA, he is an Executive Committee Member, Brihan Mumbai Centre of IIA. He is also a member of the Board of Examination and Education, IIA, Board of Reviewers of the Journal of IIA (JIJA) and Member representative from IIA for Arcasia Committee of Architectural Ar. Vinit Mirkar is the Principal at IES College of Architecture, Mumbai. He graduated from Academy of Architecture in 1996 and has worked for various architectural and interior projects for the last 23 years Pan-India. He completed his M.Arch (General Architecture) in 2009 with first class and currently pursuing PhD in architecture at the Jamia Millia Islamia University, Delhi.



Presenter 2

Ar. Amit A. Bhattacharya



Ar. Amit Ashok Bhattacharya is one of the esteemed members of the architectural fraternity of India. His knowledge and passion for his profession coupled with the most competitive & practical experience have led to outstanding results not only in the field of work but also in academics. Ar. Amit Ashok Bhattacharya holds a Post Graduate Degree in Masters in Design (Industrial Design) from P.I.A.D.S, Nagpur University after completing his Bachelors in Architecture from K.I.T.S, Nagpur University. He began his career as Proprietor at M/S Front Edge, taking up professional projects in the year 2003, and working on various commercial, residential, and government projects. Ever since then, he has been spearheading the amalgamation of art and design. In 2010, Ar. Amit Ashok Bhattacharya began his teaching career in Piloo Mody College of Architecture, Cuttack, and has bestowed a lot by his zealous participation in seminars, supervision of workshops, conferences, etc. He has contributed substantially to the research work of many

domains including Heritage Conservation, Green Architecture, Universal Design, Product Design, etc. He was awarded and honoured with Yuva Ratna Award for Project Guide by Aditya Birla Group in the year 2012. He has guided and empowered many students to make informed decisions, leading them through an exciting and positive architectural building process during his multitude of tenure as a guest lecturer and jury member for other prominent institutions also.

Ar. Varsha Ashoka Patra



Varsha A. Patra is a keen learner and design professional in the creative and technical dimensions of architecture. As a budding architect, Varsha A. Patra is empowered with her hunger for knowledge and new information in the ever-growing expanse in the world of architecture. This young individual is determined and focused of her vision of success, farsightedness & aggression towards achieving the laid-out goals. Being introduced into architectural studies in the year 2017, Varsha A. Patra found a doorway to indulge in her curiosity and make use of her vivid talents of design and research to contribute to the changing paradigm of planning and construction. The exploration of new, innovative ideas in the architectural arena is what drives her passion and enthusiasm for the growth and development of the profession. She had a handful of exposure to the professional work in the year 2021 in Prakriti Architects Pvt. Ltd. at Bhubaneswar, Odisha, India. She worked on some of the prominent commercial, residential,

and government projects. In her final year dissertation, she had a special inclination towards research work. The final year project initiated a sense of detailed analysis in her academic work. The paper is the resultant of the process.

Presenter 3

Ar. Samikshya Kandel

Samikshya Kandel is a dedicated and enthusiastic Architect. She has completed her Masters degree in “Energy Efficient Building” from Pulchowk Campus, Institute of Engineering T.U, Nepal. Currently, she is working as a lecturer in Department of Architecture, Pokhara Engineering College, Pokhara. Also, she is engaged as a senior Architect in Akala Interior Pvt. Ltd, Pokhara. In addition to that she has studied fashion designing in IEC College of Arts and Fashion, Bagbazar, Kathmandu which makes her creative and multi-talented designer.



Presenter 4

Ar. Shreenika Manandhar

Ar. Shreenika Manandhar is an aspiring Architect currently working at Sarosh Pradhan and Associates. Being raised in the core city of Kathmandu she has a deep relation with the rich traditional architecture while still mesmerized by the modernism of this generation. She is always looking up to new adventures and to taste and cook food from different regions. Learning the lifestyle and listening to the story of people from all over the world has always been fascinating to her. She believes that architecture is and should be for the people and her design approach is to find life or meaning behind any project and give effort in order to produce the quality output. She is interested in urban planning and plans to do her masters in related topic later. She hopes to be a part of a reformation that will help dim the current chaos happening in the country.



INFORMALITY OF THE CITY THROUGH STREET MARKET

Case Study of Mumbai

oVinit Mirkar*

Abstract:

A street market is an open-air location, along the street, for the buying and trading of necessities. This presentation looks at the informality of the street market in Mumbai, through three case-studies. Street markets are studied through photographs and mapping to understand the physical aspects like the street's edges, the landmarks present in the vicinity, analysis of formal shops with respect to their progression and the pedestrian movement, the magnets of the market and the landmarks in their proximity. The consistencies and differences between various market streets in the city and the factors affecting them are analysed on a comparative basis and inferences are drawn which can inform the planning of street markets.

1. Introduction

A street is perceived as public thoroughfare inclusive of its pavements flanked by dwellings or built forms. It encapsulates 20% of the cities' land use. It builds character of the given city apart from being the chief mode of mobility and to convey the culture and spirit of its regional context (Sharma & Mirkar, 2017).

Traditionally, street vending is defined using the dichotomous distinction between formal and informal, or regular and irregular economic activities. Informal street hawking is conventionally prevalent and deliberated regarding developing countries. However, in recent times, interest in the study of this practice has amplified in developed countries as well. Street vending is conventionally ingrained in the social and economic fabric of many countries and, in fact, street vending is no longer considered as a residual activity destined to disappear, but rather as a constantly growing phenomenon, affecting both developed and developing countries (Recchi, 2021). The street market is a typology that has evolved out of the needs of the people and the economic sustenance it promises the vendors. Being more or less of a perpetual nature, it is extremely important that the street market, which assists the masses, also responds adequately to the fabric of the street market, and subsequently the informal image of the city.

2. Methods

It is a descriptive and exploratory study of some of the street markets of Mumbai, which can be held as symbolic of the city's informal markets. The case studies are studied with the parameters of their physical growth and progression, the pull factors of the market and the landmarks in its vicinity, the existing formal shops and the built form strategy of the street market.

These parameters are studied with the help of photo-documentation and mapping. The consistencies and differences between various market streets in the city and the factors affecting them are analysed on a comparative basis and inferences are drawn.

3. Discussion

The three selected case studies are at Colaba Causeway, Ranade Road at Dadar and Linking Road at Bandra. These three street markets are examples of the informal face of the city of Mumbai. They serve various types of the city's population: domestic and tourist, all income groups, and various age groups. They are located across the linearity of the city, from Colaba Causeway at the southern tip, Ranade Road in the central part and Linking Road in the suburbs. In all three case studies we see

some differences and consistencies in various aspects of street vending.

Case Study 1: Colaba Causeway

This street market situated in Ward A stretches between Regal Cinema in the north to Cusrow Baug in the south. It is only the eastern front of this street which has been established into an informal street market. The eastern edge of this street is lined by a series of arcades which house the street from the weather. This was a frequently used architectural characteristic of the buildings of the Colonial era. This area is a well-known tourist destination with famous landmarks such as the Gateway of India and the Taj Hotel. In proximity, also, are the Chhatrapati Shivaji Museum and the Kala Ghoda Art District, which attracts international as well as domestic tourists.

Due to proximity to these tourist destinations in and around Colaba Causeway, these local and international tourists are catered to within the protected colonnade of colonial buildings on main roads instead of by-lanes is seen predominantly. The colonnade also offers the basic infrastructure for the stalls to be put up by the vendors. It also offers the ready flow of customers who may stop for impulse-buying while using the main road or pavements as thoroughfare. Though there are colonnaded pavements seen in most parts of British-built Bombay, none other is as successful in attracting the crowds, which are drawn to the landmarks here. Thus, we can say that the success of the street market here lies in its being an integral part of the tourist experience on Colaba Causeway.

Case Study 2 : Ranade Road

Ranade Road at Dadar in South Central Mumbai has always been a densely populated residential and shopping location and an important transport junction joining the western and central railways. The Dadar-Matunga-Wadala-Sion scheme of 1899-1900 was the first planned scheme in Mumbai to accommodate people after the plague epidemics of the 1890s. Being immortalized in literature by the Marathi author and icon P.L. Deshpande (n.d.), this road has everything a shopper might want to buy. In addition, Ranade Road is a connector between Dadar Railway Station to Shivaji Park and thus has a natural importance. The buyers here are mostly the local residents who shop for everyday supplies, as well the population who come here from other parts of the city to buy consumer goods as well as shop for clothes and jewellery for weddings and festivals.

Though there is no specific element such as the colonnade like at Colaba, the presence of the pavements and the fact that Ranade Road is a very busy thoroughfare for pedestrians ensures the continued success of the street market here. How it provides the different variety of shopping experience as per the various Marathi festivals is seen all throughout the year.

Keywords: Informal spaces, Physical Elements, Public, Street markets, Urban design.

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Case Study 3 : Bandra Linking Road

Linking Road lies in the south-western suburbs which is in proximity to Pali Hill, a predominantly film stars' abode along with high-end restaurants and institutional agglomerations in this area. It was during the mid-1980s that stalls started opening up on the pavements. These catered to the middle-class and included clothing, shoes and eateries. In the early part of this century, the Gazebo restaurant and the art galleries gave way to the shopping stalls.

The street market situated in H- West ward spans across from the Khar Telephone Exchange Building in the north and the National College in the south. The official edges of this street are formed by residential and commercial buildings. The ground floor is a shopping line with eateries. This road is an artery created in the 1940s in addition to S.V. Road, to connect the southern suburbs to the north. The primary buyers here are mostly the young from the institutions located here, as well as from other parts of the city. Also predominant here are female shoppers for clothes, footwear and accessories.

At Linking Road at Bandra, high-end shops which were already established here had catered to the celebrities as well as the local residents has independent shopping lines adjacent to the formal shops and has developed into full-fledged stalls, selling cheaper versions of the shoes, clothes and other accessories that were sold by their richer neighbours and establishing the identity of Linking Road as a popular shopping precinct.

4. Inference

The initiation of street markets shows how the sites are selected. At Colaba Causeway, nearness to the existing tourism area because of the presence of the Gateway of India, the Taj Hotel and the Chhatrapati Shivaji Museum with the formal shopping opportunities which exist here. Ranade Road, which connects Dadar Western Station is a major transportation node of the island city, and its surroundings. At Linking Road, the formal commercial shopping areas are affected by the proximity of Bollywood glamour and a prominent educational institution. This suggests a catalyst landmark which entices the consumer to the informal street market. This also verbalised the type of consumers that will in turn influence the type of things of goods that will be for sale in these shops. For the continued attendance of customers, the location of the street market should be in a place of mixed-use.

The physical elements which dictate the formation of these shops, are the types of edges which reduces the work required to set up the shops and the resistance or objections or demolition by owners of the more formal establishments or the local authorities. At Colaba Causeway, the colonnaded pavement helps diminish the initial requirement of building up the stands or booths. At Ranade Road, the footpath offers a pre-set surface upon which the shops are put up. The already-existing edges of public areas like gardens or parks at Linking Road, give the stalls the opportunity to rest against, and which impart a feel of durability.

5. Conclusion

Street markets are established according to the surroundings and context at the location. They may open-air or covered by semi-permanent enclosures made of various materials, put together by the shopkeepers themselves.

This presentation demonstrates a fixed, yet non-formal kind of

planning in the development of these street markets which hold up the city's fabric and also add towards the city's legibility. The built-form stratagems studied here, aid the course of urban planning and help to keep intact those places where these types of informal elements are to be removed in order to avert 'undesirable' or 'illegal' informal commercial activities. Alternatively, planners can arrange for the incentive to encourage them to progress on a non-formal basis as one of the myriad facets of the metropolis This could produce an informal give-and-take, in turn generating an individual uniqueness for the market itself, and impart a distinctive character and a specific flavour to the area and also to the city.

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ECO-COMMUNITY DEVELOPMENT AT KUSUMI VILLAGE, SIMILIPAL, INDIA

An architectural intervention for building a sustainable existence

○Varsha Ashoka Patra*, Ar. Amit Ashok Bhattacharya**

Abstract

"We do not inherit the earth from our ancestors; for we borrow it from our children."

The world today is facing a paradigm shift. Finding a new model for residential development and community growth is inevitable for the retention and re-edification of the environment.

This architectural dissertation focuses on the preservation of the Santhal tribes found in the Similipal Natural Reserve, Mayurbhanj, Odisha, who suffer the decline of biotic living systems and loss of cultural and traditional principles. This paper aims to produce mechanisms of improvisation of the living standards and build a sustainable existence without compromising cultural coherence.

1. Introduction

As constant as change is, it is also of utmost significance that we acknowledge that the ongoing changes do not allow the parallel growth of the world at large, and nature is collateral damage because of the desynchronized ideas of development as proposed by humankind.

Global warming and rapid climatic changes have been legitimate concerns about the Earth's welfare for quite some time now. Furthermore, it is not only the climate that suffers the consequences of synthetic developments proposed by mankind. Human civilization has lost touch with its values and its connection with the surrounding spaces it thrived in. People have lost their harmony with nature and are living in infinite monotony of fabricated simulations.

Great psychologists have investigated human behaviour over generous amounts of time and pointed out characteristic traits in human beings which include the creation of vivid complications and grand setbacks for oneself, then their pursuit to resolve the said issue upon which the complications lie. Scientists have now realized that in the grand scheme of derogative developmental angles, nature is now turning against society. And if the actions of our ancestors are not rectified in time, human civilization may very well perish from its ubiquitous existence.

Many working professionals have contributed to the expansive research on the topic of global warming and what we all can do to curb it. The Brundtland Report, published in 1987 by the United Nations World Commission on Environment and Development, coined the term "sustainable development" and defined it as "development that meets the needs of the present without compromising the ability of the future generations to meet their own needs".

Similipal Natural Reserve is a location, full of enchanting biodiversity, which has been facing the brunt of the issue.

Revenant forest fires, erratic patterns of rainfalls, water scarcity,

impoverished forests, and the chain of hunger continue to affect the native flora and fauna, not to mention the people residing in the many villages inside the reserve.

Many tribal groups residing amidst the forests are greatly dependent upon them for their survival, and the loss of natural lustre has induced acute cases of malnutrition, anaemia, etc. among people.

There is a need for sustenance of biodiversity and cultural heterogeneity of the forest people, to preserve their eccentricity, to develop the site through existing eco-tourism ventures, to spread awareness for conservation of the environment and species residing within, and most importantly, to develop and provide measures to uplift the existing substandard lifestyle followed by the people.

1.1 What is an Eco-Community?

The term 'eco-village' was first coined in 1985. It is used, since then, to describe a group of ecologically oriented people forming an "intentional community."

An *eco-community* considers, and addresses, multiple human needs, not just one at the exclusion of all others. It is a place where people of diverse backgrounds and perspectives feel welcome and safe, where every group has a seat at the decision-making table, and where prosperity is shared.

1.2 Typology of Eco-Communities

- *Traditional Eco-communities* – Such eco- communities are created around the concepts of preservation of age-old cultures, traditions, and belief systems.
- *Intentional Eco-communities* – Such eco- communities are more modern in nature, comprising of a group of individuals (small scale or large scale) working towards a set of goals and objectives with clear motivation for their purpose.

Keywords: Santhal Tribe; Similipal Natural Reserve; Biotic Living Systems; Cultural Coherence

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1.3 Principles of an Eco-Community

According to leading surveys of the world and research articles as specified, the eco-communities are based on the following ideologies and philosophies:



Fig 1: Three pillars of sustainable living

- *Creating a favourable social micro-climate.*
 - Physical Wellbeing
 - Meeting the increasing demand for housing.
 - Focusing on the construction of the ethnic requirements.
 - Expanding the range of leisure and recreation facilities. - Interaction of settlements with the environment.

- *The eco-equilibrium principle.*

The principle of maintaining a state of the environment provides for its self-regulation of natural resources and aims at reducing anthropogenic load, compensating for any adverse effect on the environment.

- *The energy-saving principle*

Orientation of design decisions on the use of engineering and technical systems that work based on renewable energy sources: sunlight, geothermal sources, wind energy, tides, their rational location on the territory: and the use of passive methods of energy.

- *The psycho-physiological principle.*

Creation of a space favourable from the psychological point of view, guided by the methods of video ecology, considering the peculiarities of the human visual perception of the architectural environment and the basic principles of ergonomics.

- *The traditionalism principle.*

Construction from ecologically sound, traditional materials, intrinsic to the locality of construction, taking into consideration spiritual, cultural, and national traditions and peculiarities of the development region on the design stage.

- *The social comfort principle.*

Conducting activities aimed at educating the population on the ecological principles and the concept of sustainable development, encouraging the population to have a healthy lifestyle, and developing ecotourism, and permaculture.

1.4 Present-Day Scenario of the Eco-Communities

In today's world, one of the most prominent environmental challenges is pollution. This ranges from air, light, and soil pollution to water and noise pollution. Human activity and the desire to satisfy human needs usually lead to specific effects on the environment.

Apart from the impact on the environment, such as climate change, these activities also affect human health.

Due to growing concerns about our world, people are developing sustainable communities committed to natural living.

In the present day, the eco-communities across the world work for mankind in all to reverse the effects of global warming and nature destruction. A user-centric approach is required to conserve the authenticity and intrinsic quality of tribal groups who live within the crux of nature. Tribal settlements are the ones who face the brunt of impact of nature loss and destruction and thus, venture out into the cities, foregoing their lifestyle reliance on the environment and originality of thought and culture.

Addressing the issues of particular residential communities to maintain their quality of life, values and cultural integrity is crucial to maintain diversity on the planet.

1.5 Need for this Project

Only change is permanent in the world. Civilizations, government, and traditional values may rise and fall but the natural environment of each city remains the same within which the human community builds. A city's natural environment and its urban form, taken together, are a record of the interaction between natural processes and human purpose over time. Together they contribute to each city's unique identity.

Organic intervention in architecture is the harmony in the relationship of human habitat and the diverse natural world. Harmony in built environment is based on wholeness with nature through a continuous flow of interactions between values and city form.

Wholeness accommodates biomimetic principles that link the natural world to the people in a specific 'place'. Organic intervention looks beyond imitating form and process in ecosystem to include world view that solves built environment problems and gives meaning to people in a particular 'place'.

The ultimate goal of organic intervention in this project is to achieve wholeness with nature through a continuous flow of interactions between forest and city form taking the Kusumi tribal village as the bridge between them.



Fig 2: Biodiversity



Fig 3: Eco-Tourism Ventures

- Conservation of biodiversity of the region in response to changing climatic conditions.
- To develop the site through pre-existing eco-tourism ventures and local participation.



Fig 4: Social Awareness



Fig 5: Communal Acceptance

- To create social awareness about the conservation of the environment and species residing in it.
- To generate communal acceptance for eco- communities as model for sustainable development of the region/ state/ country.

1.6 Research Quotient

Designing an experience is a unique responsibility of an architect. The **theory of phenomenology** acknowledges this responsibility by **implementing sensory design in order to establish experiential, architectural space.**

Phenomenology demonstrated in architecture is the *manipulation of space, material, and light and shadow to create a memorable encounter through an impact on the human senses.*

This theory promotes the integration of sensory perception as a function of a built form. This creates an experience that is beyond tangible, but rather abstract, observed, and perceived.

An analysis of this aesthetic through interpretation of its qualitative elements and the exploration of case studies by phenomenological theorists, Alberto Pérez-Gómez, Peter Zumthor, and Steven Holl, as supportive evidence will highlight its fundamental characteristics as a theory, in contrast to a more rationalist design approach.

An observational argument to prioritize the human experience in design will be determined by exploring the theoretical construct of phenomenology.

Architecture influences the community by incorporating human activity with adapted site context, organized programmatic and interstitial space, and exploration of material.

Phenomenological concept strategies in architectural design intend to develop a unique experience of the phenomena of space, light and form.

Light and shadow create a playful interaction of color, texture and related emotion associated to the program. The contrast between these can be sharp or blurry depending on the desired effect. This strategy can create depth and display texture and is one of the strongest design features in phenomenology. Lighting is visual, experiential, environmental, and sensual. The phenomenon lies in its effect on the human condition.

2. Analysis

2.1 Selected Site

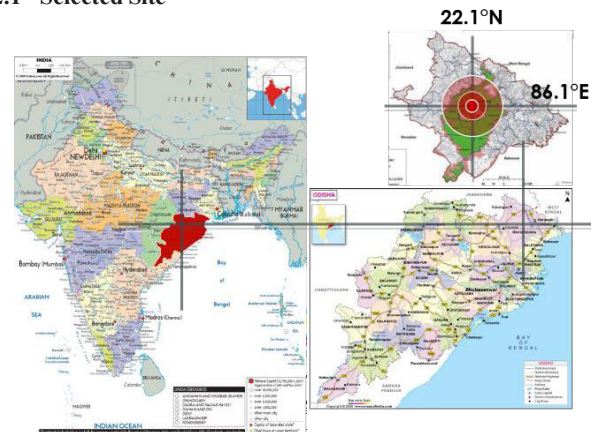


Fig 6: Location of selected site

The village of Kusumi is in Rairangpur, near Similipal Reserve Biosphere, in the district of Mayurbhanj, Odisha state. Nestled amidst the Similipal Forest Ranges and Badampahar Hills and Forest Ranges, the proposed site is lodged in the very intrinsic core of nature and lies in the protective ecological zone, Baripada.



Fig 7: Google earth image of sit

Village size: 55 acres
Village population: 478 people
Density: 2153 people/ sq. km
Total number of houses: 125 households

2.2 Santhal Tribe on site

The Santhal tribe or Santhalis are a native tribe, significant to the eastern state of Odisha, India. According to linguist Paul Sidwell, Austro-Asiatic language speakers probably arrived on the coast of Odisha from Indochina about 4000–3500 years ago.

Santhal society has much less stratification and is more egalitarian than adjacent caste Hindu society, but still has some significant status differences. The most important marker of a person when interacting with others in Santhal society is their standing as marang ("senior") or hudin ("junior").

A characteristic feature of a Santhal village is a sacred grove (known as the Jaher or Santhal Sthal) on the edge of the village where many spirits live and where a series of annual festivals take place.

This grove is set aside in the founding of the village and left undisturbed except at times of festival.

Inside is set a series of natural (uncut) stones which represent the bongas but are not substitutes except during festivals.

The Majhi Than, a raised mound of earth covered with a

thatched roof outside the headman's house, is where the Majhi's ancestors' spirits live.

During the summer, a jug of water is placed there so the spirits can drink. Here the most important decisions of the village are made, including judgments.

2.3 Settlement Layout

The Santhal tribal village consists of 125 households. These households are haphazardly placed in the village area and to a certain extent perpendicular to the agricultural and farming, and grazing lands for cattle.



Fig 8: Pictures of Kusumi Village settlement pattern

A typical Santhal village consists of straggling streets with houses on either side. Most of the houses are traditionally made from stone foundations, limestone and mud bricks, and woven twigs for reinforcements.

It is taken care that each house has some form of visual connectivity to other houses in the locality, although very irregularly and organically placed.

2.4 Tribe Housing Typologies

The dwelling houses are built in several ways.

Walls are made by fixing thin poles, tying them with cross saplings twigs, finishing with a plaster of clay and cow dung, and lastly glazing with white clay.

The roof is conical and made with a rafter of sal wood, thatched with jungle grass. Santhals create figures of birds, flowers, animals, trees, and forms of human beings in hunting and dancing postures to decorate the walls of their dwellings.

Through years of experience and knowledge, Santhals have developed this structure of houses starting from simple tree branch houses to two- floor mud houses.

These houses are simple yet elegant and require minimal investment so that even a family without a steady source of income can make them.

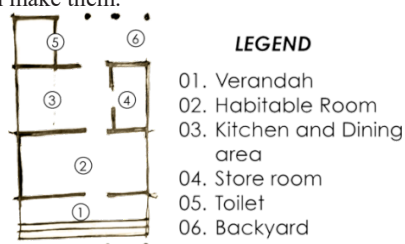


Fig 9: Sketched layout of a typical house

2.5 Construction Techniques and Materials

• Making of walls

Traditionally, the walls are mainly made of mud. Nowadays, they make it with bricks as well. The first step for building the house is preparing a mixture of clay for the wall.

This mixture consists of a good quality clay which becomes hard when its dry and hay dust or rice hulls (outer shell of rice grain).

The width of the wall is generally around 40 cm. When the mud wall is completely dry, it is coated with a layer of clay to get a smooth finish.

• Making of Roof

There are various types of roof structures popular among the Santhal people. The roof's basic frame is made of Sal wood and bamboo.

For the ridge beam, king post, and main rafter, Sal logs with over 15 cm thickness are used. The common rafter and other supporting beams are made with bamboo, which is ripped into two parts and nailed to make grids. After that clay tiles or hay shade is put on top of it.

• The Floor

The mud floors of any Santhal house are as smooth as any modern house floor if maintained properly. To keep the floor smooth, it is needed to be coated with cow dung at least once per week.

• Maintenance of the house

o **Mud Plaster:** The wall needs plaster to protect it. Village women put layers of mud and cow dung mixture to make the walls smooth. The walls need at least three to four layers of mud to achieve an even surface for the first time.

o **Cow dung as a primer before paint:** Now, when the mud plaster is completely dry, they apply a diluted cow dung layer like a primer before painting the wall. This layer is necessary, because without this layer if color is put on the mud wall, the smoothness of the wall will be ruined. This also works as a protective layer for the wall.

• **Colouring the wall:** Santhals mainly use natural colors in the whole process. The process of colouring the wall is called "Patao". First, they dilute white clay (Kaolin Clay) with water and coat the wall using a piece of cloth. Two layers of white clay are put to get a perfect finish. Then they carve various designs on it with their fingers.

2.6 Spatial Parameters and Anthropometry

Santhal houses typically have a similar external characteristics. Planning also includes a classic layout of spaces inside residential spaces including the extended front porch and socially, visually connected verandah and backyard. The kitchen and dining area are usually centrally located near the verandah for utility purposes. A typical Santhal house is at most 11' in height, including the plinth, with low-height lintels and non-front-facing windows for privacy concerns.

2.7 Human Behaviour in Spaces

Environmental psychology or space psychology is, in fact, the interaction between people and the spaces they inhabit. Lighting, colours, configuration, scale, proportions, acoustics, and materials address the senses of the individuals and generate a spectrum of feelings and practices.

The natural environment has influenced human behaviour from the beginning of humankind up till the present. It has influenced us in our behaviour towards our food, shelter, clothing, vocabulary acquisition and ideology.



Fig 10: Architectural inclusions influenced by tribal characteristics

The definition or description of the environment has to be with reference to something surrounded by either nature or manmade.

It is said that “architecture is the third skin” of the human body since the first skin is the real skin, which acts as the outer envelope and the filter of the body, then the clothes that act as the second skin, which is also considered as insulation and filter. “So, people’s third skin would be the next layer out -usually the building they are in,” which performs as the surrounded by man-made environment. This kind of environment- the architectural environment- should fulfill human needs and comply with the user requirements. However, “what architects create is a potential environment for human behavior; what a person uses and appreciates is his or her effective environment.”

The role of positive theory for the design professions is to enhance the ability of designers to predict what the effective environment of people will be when the built environment is configured in a particular pattern.”

The architectural environment, where the main life activities of any society take place, has a dominant and permanent influence on the user of this environment. Nevertheless, people do not only try to cope with their environment passively, but they modify it actively to match their needs by acting individually or collectively, “leading to characteristic interaction effects which vary over time, situations and persons.”

2.8 Sustainability Techniques

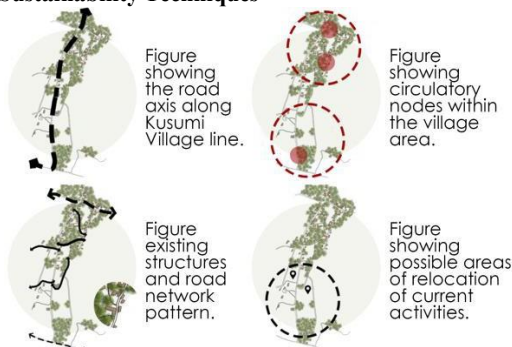


Fig 11: Analysis of site and surrounding context

- **Creating net-zero habitat:** Using local building materials and skills, the residences become a net energy-positive habitat by generating their own energy, using renewable energy. Zero-discharge of water, reduction, and recycling of solid waste, drought-resistant local endemic species landscaping, and growing organic food would be a hallmark of this project.
- **Sustainable built environment:** building envelopes that are solar passive to be climatically suitable built with efficient space usage to reduce the built-up area and low embodied energy building materials with construction techniques that require minimum processing and machinery.
- **Integrated environmental planning:** Zero-discharge of water, reduction, and recycling of solid waste, water-efficient landscaping using local endemic species, and growing organic food.
- **Principle of Cohousing:** The human ecology, using the principles of the “Cohousing” concept of living, facilitating interaction among neighbours for inclusive social development, economic and environmental benefits. A functional fusion, the living, working, recreational and primary amenities allowing a multiplicity of space usage to reduce the built-up area to enable the inhabitants to interact actively.

3. ANALYSIS OF ISSUES

3.1 Lack of basic infrastructure

- The absence of a proper healthcare unit with basic facilities, and an education institute for primary learning creates problems for the locals which results in low educational status, poor functional literacy, unwarranted deaths, etc.

3.2 Need for the redevelopment of interactive spaces

- People of the village function with nature. Open grounds, public meeting spots, and smaller connectivity nodes are places of continuous interaction between the members of the society. Visual and social connectivity are crucial aspects of living within such a society.

3.3 Worship modules

- The existing worship module exists in a dilapidated condition and is therefore not used currently. Restoration and rejuvenation will lead to proper utilization of the space and attract tourists.

3.4 Market squares

- Generally located at intersectional nodes, the market squares are a place of mass gathering, communal discussions, and meeting spots for the general user group.
- Absence of a dedicated market square within the community causes loss of business opportunities and revenue generation options for the people.

4. SITE INFERENCES

4.1 Micro-Analysis of Site

- The site exhibits a natural single axial road passing through the peripheral side of the site, hence limiting access to the region.
- Various circulatory nodes at transitional links of the village area make it visually and psychologically ambient for local

users to locate themselves.

- Large expanse of unused land patches along the periphery for proposal of diversification and evolution of existing activities.
- Organic development of road patterns in the village as per ongoing developmental strategies and utilitarian facets.

4.2 Site Characteristics

- *Site location:* 22°12'37.1"N 86°11'47.3"E
- *Site area:* 6.69 acres
- *Site profile:* Linear profile
- *Site geometry:* Rectilinear
- *Topography of the land:* Contoured throughout, catchments
- *Slope:* 3.39m
- *Foreground:* Badampahar Forestry
- *Background:* Suleipat Dam
- *Vegetation:* Heavy vegetation towards the southern side.
- *Infrastructure:* Small hutments and mandaps
- *Landmark:* Deuli Secondary School

4.3 Site Potentials



Fig 12: Suleipat Dam and Picnic Spot

Kusumi Village is surrounded by vast potential of natural forest reserve and water resources, and abundant unexplored area of tourism and vocation.

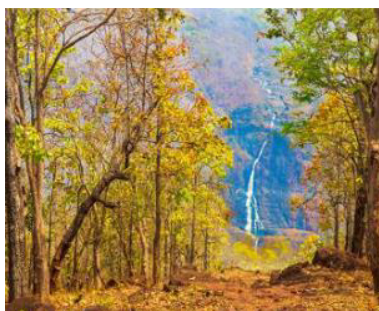


Fig 13: Asurakhhol Waterfall



Fig 14: Scenic trail around Kusumi Village

4.4 Site Visibility



Fig 15: Site Surroundings

4.5 Present Scenario

- Entrance Node to Village
 - o Internal lanes from the entrance connect the visitors with the village.
 - o Absence of demarcated entrance precinct.
 - o Presence of canopied foliage creating a shaded entryway.
 - o Marginally open space for communal gatherings.
 - o The spaces at the entrance are not properly managed resulting in unused and uneven spaces.



Fig 16: Images of the entrance node to the village and surroundings

- Worshipping Node of the Village
 - o Rejuvenation of the current worshipping temple is required due to climatic destruction.
 - o Open spaces are characterized as spaces of interaction.
 - o Social cohesion is carried forward through social gathering spaces but here these spaces are in a disfigured condition.
- Connecting Node between Public Spaces and Forestry
 - o The well-demarcated picnic spot is crowded with visitors during the end of the year including visitors

from outside the state.

- o Prevailing built structures without proper facilities pose a problem.
- o Unutilized structure along the forest trail forms a part of the connection.

5. DISCUSSION

5.1 Factors to be considered

- **Site context:** It is crucial to design the site in amalgamation with its surroundings rather than in contrast to it. The buildings and structures that exist in the neighbourhood make up the site context. They do not exist in isolation, thus allowing the user group to integrate into the space uniformly without any psychological resistance.
- **User context:** The design of the site needs to propagate and enhance the existing settlement patterns of the village without causing any harm to the integrity and values. The livelihood and lifestyle of the tribes depends on their pattern of living and changing it will cause issues in societal acceptance.
- **Climatic design:** Climate has forever been a problem in building design, and its control, a major factor governing the architecture of the space. The shape of buildings has been greatly influenced by the requirements of climate because it imposes significant limitations- the problem of designing buildings that are in harmony with the climate.
- **Outsider influx:** Touristry plays an important role in generating revenue for the arts and crafts created by the tribe, thus creating a trading opportunity for them. Creating spaces favourable to the outsider population plays a great role in influencing and uplifting the lives of the communal people in the long run. Seasonal influxes should be accommodated to allow revenue-generation opportunities for the people of the village.

5.2 Design Philosophy

The design needs to focus on uplifting and exaltation of endangered tribal groups and species within the community by creating an architecturally programmed environment that provides protection and systemic support to its user groups.

5.3 Design Considerations



Fig 17: Existing landscape and recurring design

Planting more trees serves to provide a buffer from the main road traffic noises and separates the ecological community from any disturbances.

Old, mature trees should not be cut down as they hold intangible ancestral and cultural values. The design produced should add value to the space and complement the natural surroundings to enhance the feeling of the site.



Fig 18: Integrating Nature

To embrace the essence of the particular site, it is essential to integrate nature into the active spaces, whether residential or otherwise.

The flow of activities along the spaces shouldn't be broken, as they are attestation and conclusion of the architectural evolution undergone by the community.



Fig 19: Site interventions

Creating a buffer zone by using pre-existing natural foliage in the site to curb oncoming traffic and town noises.

Using the natural system and foliage as a design element to create a covered walking canopy.

Introducing parking and drop-off areas by site interventions.

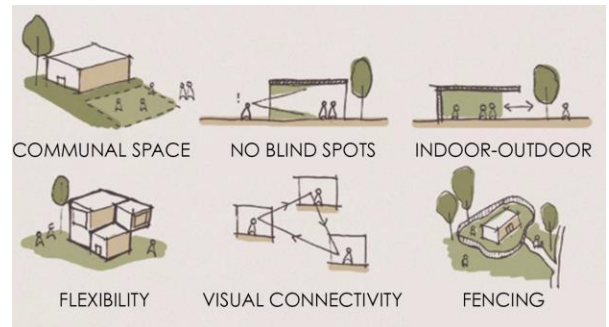


Fig 20: Design considerations

Adding communal spots and eradicating blind spots to maintain visual connectivity within the site. Providing transitional links between indoor and outdoor spaces, henceforth bringing the natural surrounding inside built spaces, and vice-versa.

Providing flexible spaces that can cater to the multitude of activities in which the tribal community is involved.

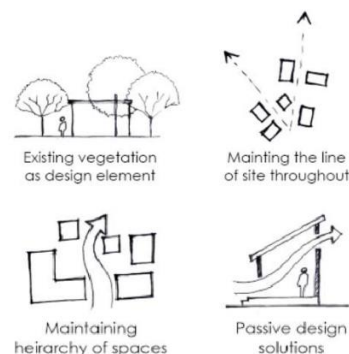


Fig 21: Design considerations

5.4 Prototypes of Activities

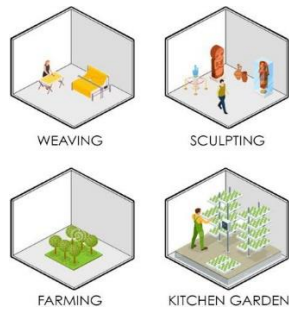


Fig 22: Prototypes of Activities

Identification of activities based on the cultures, traditions, lifestyle of the people of Kusumi village leads to the following ideas about the spaces required for each activity.

Natural dyeing and handloom weaving is one of the major intricate crafts fabricated by the tribal group of Santhalis in Odisha. Rock and stone sculpting is also another field of their expertise for the previous 60-70 years.

The majority of the tribe members are now involved in agricultural practices as the produce generates huge amounts of revenue on a seasonal basis.

5.5 Analysis of Required Areas

- DWELLING UNITS
 - o There are different types of dwelling unit requirements according to the various occupational patterns and social hierarchy present within the village area.
- GRANARY UNITS
 - o Granary units are a requirement for the agricultural workers for storage and further processing of the harvest.
- MARKET SQUARES
 - o Generally located at intersectional nodes, the market squares are a place of mass gathering, communal discussions and meeting spots for the general user group.
 - o They also attract the tourists showcasing their original arts, crafts, and cultural works.
- ANIMAL HUSBANDARY
 - o The domestic animals should also have their own shelter other they can hamper the health of locals and need to be safe during the climatic issues.
- SCHOOL
 - o A proper educational institution is required by the locals for higher education of their respective wards.
 - o The only such school is located at a distance most people don't feel comfortable with.
 - o It can have multiple uses like meeting area for the Village Sarpanch during the evenings.

- PRIMARY HEALTHCARE CENTER
 - o A health-care unit is needed for provision of basic supplement of medication and medical guidance in case of emergencies.
- WORSHIP MODULES
 - o The existing worship module exists in a dilapidated condition and is therefore not used currently.
 - o Restoration and rejuvenation will lead to proper utilization of the space and attract tourists.
- MEETING SPOTS AND FUNCTION GROUND
 - o The centrally located function ground has multiple purposes including the celebration of festivals, hosting of village fairs, and even marriage and engagement rituals.
- TOURIST ACCOMMODATION
 - o A tourist accommodation is required to cater to the needs of the tertiary user groups of the site, who visit during specific seasonal months to enjoy hiking, trekking, or just relaxing amidst the nature.
- TOURIST INFORMATION CENTER
 - o The tourist information center is required for the information gathering by the tourists of the area which further enables outreach and awareness about the beautiful gems hidden in Similipal.

5.6 Design Motto and Theme

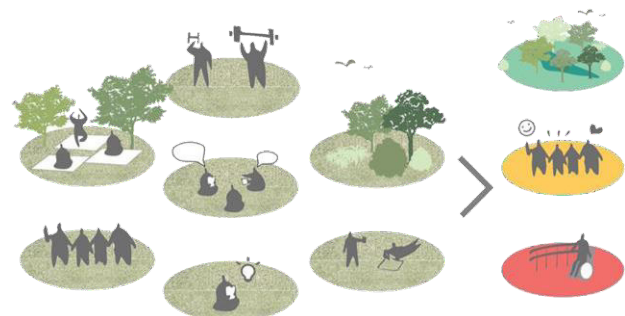


Fig 23: Design Motto

The design focuses on uplifting and exaltation of endangered tribal groups and species within the community by creating an architecturally programmed environment which provides protection and systemic support to its user groups.

The theme is based upon the approach of sustainability, which basically implies to “meeting our own needs by letting go of a one-tracked mind, without compromising the ability of our future generations to meet their own needs, in standard balance with nature.” Instead of focusing on our own personal needs, if humans learnt to live and thrive with the nature, it will standardize communal living and generate harmony.

Organic planning is a non-traditional approach to strategic planning that focuses on how systems develop naturally.

Development within such an eco-sensitive zone requires a

certain degree of finesse when it comes to built forms, path-space relationships, and usage of principles of design.

Vernacular architecture is a modest style of building that is specific to a region. It relies on the use of local materials and knowledge to construct buildings. The use of vernacular architecture helps to maintain the anthropological loads of the environment and not cause any distress to the folks living in such habitats.

6. Conclusion



Fig 24: Proposed development of the site



Fig 25: Proposed development near existing pond

The main aim of the project is to revitalize the natural surroundings of Kusumi Village and uplift their lifestyle along with their inadequate living conditions.

The proposed site should be developed in a manner that caters to the needs of built-up areas including storage spaces for the entire village as well as granary and *dhinki sala* units for agricultural purposes.

Provision for revenue generation through skill development centers should be one of the key units of design because a large number of the population ventures and migrates out from their ancestral homes, leaving behind their very own original culture and traditions, and settles down in urban areas in the hopes of finding better business opportunities and improvement in living standards.

The new proposal of the site will solve the existing crises of drainage, water clogging, required sanitation, non-demarcated

spaces of worship, marketing, and vending zones, etc. It will also provide them with an opportunity of improved sustainable living conditions and planning patterns.

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MODERN URBAN SPACE OF POKHARA, ISSUES, AND CHALLENGES

A Case of Walking Trail at Lakeside, Pokhara, Nepal

oSamikshya Kandel *, Luna Thapa**

Abstract

With the influence of modernization, the urban landscape of Pokhara has developed and changed significantly. Pokhara is the famous tourist hub in Nepal, where healthy urban space is of great value. The walking trail at Lakeside, Pokhara is one such initiative providing recreational urban space for both city dwellers and tourists. However, the space is not functioning as envisioned due to various reasons. This study aimed to investigate such issues and challenges using analytical-descriptive methods. For the visitors, the survey is carried out by developing a questionnaire using google forms, and an interview is carried out with key respondents for the vendors and businessmen. The study will be supportive of dealing with current issues of the project and also helps to identify probable challenges in the development of similar urban spaces in the future.

1. Introduction:

Nepal is one of the least urbanized countries in Asia but rapid urbanization is seen in the last decades. (Timsina, et al., 2020). It is one of the top ten fastest-urbanizing countries in the world (UNDESA, 2014). Similarly, Pokhara is the largest metropolitan city in terms of area and the second-largest in terms of population (about 421,000 in 2020) in Nepal. It is located about 200 kilometers west of the capital, Kathmandu with an altitude range of 827 meters to 1,740 meters. Pokhara is especially known for the Phewa Lake area from where the panoramic views of Annapurna, Dhaulagiri, and Lamjung Himalayan ranges can be observed. It is also famous for the renowned temples, monasteries and pagodas, lakes, and adventure sports center. Because of these features, it has been considered one of the most beautiful destinations for tourists in the world. (Khatiwada & Adhikari, 2021)

On the other side, the lakeside area is visitors' first destination space in Pokhara. Being a transition node, it connects with the other beautiful places of Pokhara and promotes a tourism-based economy. But urbanization has severely affected the city's land use, open space, and natural beauty. This has further impacted the modern urban space i.e., the Lakeside walking trail of the city.

Due to rapid urbanization open spaces are decreasing, and need for the walking trail and parks are increasing day by day. Urban open spaces have increasing importance in city developments due to the urban expansion characteristic of the last decade. Based on contemporary processes, cities and their neighborhoods can enhance their appeal to tourists using open space developments. (Balgh & Takascs, 2011) Open spaces have many benefits; they can be communal, yet also offer a chance to enjoy some peace. They provide opportunities for formal or informal sports, bringing about a feeling of friendship and togetherness. They offer meeting places for anyone to enjoy, as well as offer glimpses into the past, harnessing heritage features and ancient trees that bestow memories and reference points for life. The spirit and pride of individual communities make neighborhood open spaces the focus of local celebrations. They can also present opportunities for water harvesting and community food growing, all of which are increasingly on the public's agenda— especially for children and young people. In this way, their values can be increased significantly.

According to (Pokharel, 2018) despite its importance, the trail around the lake remains utterly neglected. The waste produced by businessmen, vendors, and visitors is thrown around the lake and on the foot trail. Activities like bringing packaged food along the trail area by the children and stalls kept in the evening by the businessman also hamper the proper management of waste.

The foot track has even turned risky for pedestrians due to the minimum width of the track and the level of disbalance in walking areas. Cows and buffalos taking a dip in the lake is a normal routine. People use the lakeside to take sunbathe where they pass time eating oranges and peanuts. These are certain issues that will be helpful for the study. The objectives of this paper are to find out the issues in the trail area from the visitors' perspectives. Also, the issues from the vendor's and the businessmen/ owners' perspectives are highlighted. For this detailed observation, a field survey and questionnaire are developed.

2. Research Methodology:

2.1 Study area:

The city of Pokhara can be divided into two - the charming Lakeside Pokhara, and the Old City. The Lakeside part offers many tourist attractions and beautiful views, while the Old City is the commercial hub of Pokhara. The Lakeside is further divided into the north and the southside. Lakeside is named so, as it surrounds the Phewa Lake or the Phewa Tal, a gorgeous freshwater lake that is eerily similar to a mirror. (Nivedha, 2018) The walking trail is developed from the main lakeside area, Halanchowk. Towards the south, it connects to the Talbaharai temple, a famous temple of Pokhara and towards the north, it reaches the main street (Baidam road) which is shown in the figure below.

The study of the lakeside trail is limited to an 1800 m long way connecting the amenities from Halanchowk to the Baidam Road. Questionnaires are randomly done among the 100 visitors, interviews are carried out with key respondents of vendors and businessmen/owners of shops.

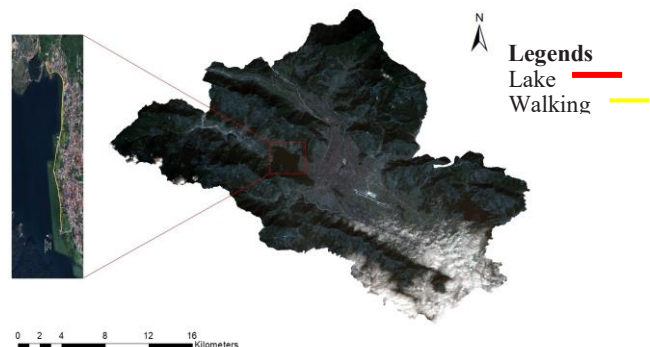


Figure 1: Google earth map of lake area and walking trial area

Keywords: Urban space, Architecture, Walking Trail, Tourism

*Pokhara Engineering College

2.1 Methods:

The current situation of walking trail of lakeside is observed through the detailed literature review, site visit, and survey among the varieties of users. To better understand visitors and the facilities and services they require, data from individuals are required. These data would include, for example, age, activities, and when and where visitors visit. (Moore, et al., n.d.) The survey is conducted on-site for the vendors and businessmen and owners of shops whereas it is taken through google forms among visitors as shown in Appendix A. Also, GIS is used for the map drawing and Microsoft excel 2019 is used for the data analysis. Along with the field studies interviews were conducted with the vendors and businessmen/owners as key respondents, working around the lakeside trail to understand their opinion of the beautiful space and improvements that are needed to beautify the lakeside walking trail in Pokhara city.

The questions to the vendors and businessmen/shop owners are shown in Annex B. The survey and interview are analyzed based on the issues and challenges of the lakeside walking trails as highlighted in (Pokharel, 2018)

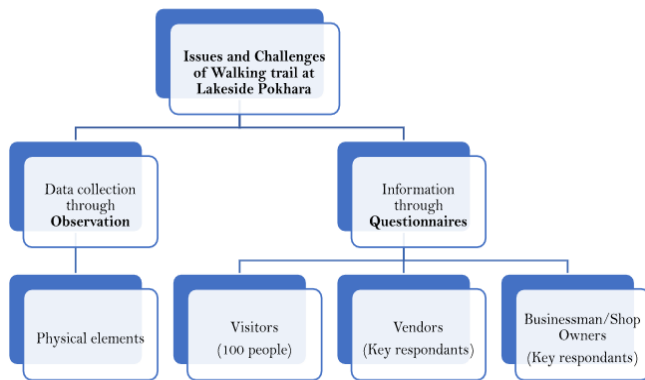


Figure 2: Methods of data collection

3. Results and discussions:

Based on the responses to the questionnaire randomly done among the 100 visitors, interviews carried on as key respondents of vendors and businessmen/owners shops lakeside walking trail received a valuable open space of Pokhara and a prospective tourist city of Nepal. The following issues are highlighted from the survey data.

3.1 Characteristics of Respondents (Visitors):

As per the table below, more than half of the respondents are female (57%) and other are male (43%). Among them 73 % are from Pokhara, 3% are neighborhood respondents, 20% are out of Pokhara and 3% are international visitors. As per the age, the maximum visitors are of the 16-25 age group (i.e., 47%) and the minimum visitors are of 46-55 and 65 above age group. (i.e., 1%). Similarly, 34% are of the 26-35 age group and 14% are of the 36-45 age group.

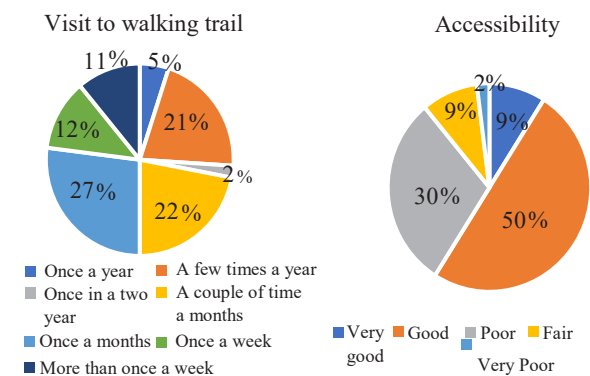
Demographic characteristics		Percentage
Gender	Male	43
	Female	57
	Total	100
Residence	Neighborhood	3
	Pokhara	73
	Out of Pokhara valley	20
	International visitors	4
	Total	100
Age	15 and under	0
	16-25	47
	26-35	34
	36-45	14
	46-55	1
	56-65	3
	65 above	1
	Total	100

Table 1: Demographics data

3.2 Attitudes about issues of walking trail

Figure 3: Visit to walking trail

Figure 4: Accessibility



The accessibility and activities of the visitors in the walking trail are shown in the pie charts

The first pie charts illustrate that maximum, i.e., 27% of visitors visit the walking trail once a month and minimum i.e., 2% of visitors are of once in every two year. Similar percentage rent of visitors visit the walking trail a few times a year and a couple of time a month. i.e., 21% and 22% respectively. 11% of visitors tend to visit trails more than once a week and 3% of visitors tend to visit once a year. As per the second pie chart, exactly 50% of visitors feel the accessibility is good and 2 % feel it is very poor.

The same percentage of (9%) visitors feel the accessibility is poor and very good. And 30% of them find it fair.

The above pie charts explain the activities performed by visitors

Activities in walking trail

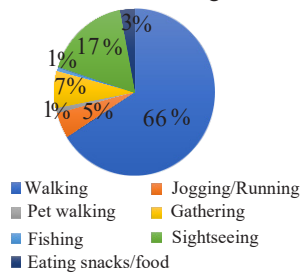


Figure 5: Activities in walking trail

Space for activities

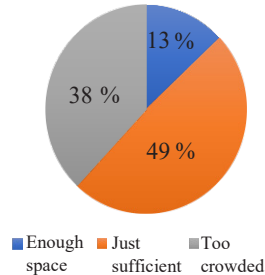


Figure 6: Space for activities

and the space sufficiency for their activities. As per the first pie chart, 66% of people prefer walking and 1% of people do pet-walking and fishing in the trail area. After that 17%, 7%, and 5% of visitors enjoy sightseeing, gathering, and jogging respectively. For the activities, the space is just sufficient as per the 49% of visitors mentioned in the second pie-chart. The space is too crowded for 38% of visitors and 13% of them felt enough space in the trail area.

Preference of Amenities around walking trail

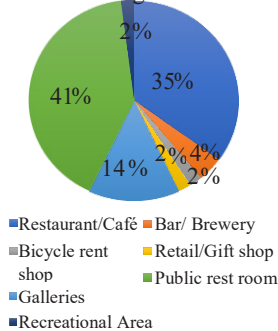


Figure 7 Amenities around walking trail

Condition of washroom

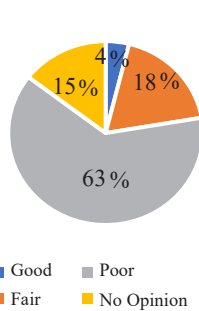


Figure 8 Condition of washroom

The first pie chart shows the amenities desired by the visitors around the walking trail. Maximum percent (41%) of visitors feel the need for public restrooms, whereas the minimum (2%) of visitors need bicycle rental shops, recreational areas, and retail/gift shops. After that 35% of visitors feel the need for restaurants/café. And the second pie chart explains the condition of the existing washroom in the walking trail area. 63% of visitors tend to find the condition of the washroom poor and only 4% find it good. Similarly, 15% and 18% of visitors tend to have no opinion and think it fair respectively, about the condition of the washroom.

People's perspective on the width of the walking trail, seating space, provision of the pavilion during rainfall, an extension of the shop area, and parking facilities in the walking trail area.

The table below shows that 78% of visitors find the width of the walking trail sufficient and 22 % of it insufficient. Also, for the seating space and benches, 64% find it sufficient and 36% feel the need for more seating space. 89% of people feel the availability of a covered pavilion is sufficient whereas 11% of visitors find it insufficient. People tend to extend the business shop/eateries in

the trail area, which seems to be accepted by 31% and not accepted by 69% of visitors. As per the perception of the parking area which tends to be sufficient by 22% and insufficient by 78% of visitors.

	Yes (Percent)	No (Percent)
Sufficient width of walking trail	78	22
Sufficient seating space and benches	64	36
Sufficient provision of covered pavilion/seating space during rainfall	11	89
Acceptance of extending business shop/eateries outlet in the trail area.	31	69
Sufficient parking space for lakeside walking trail area	22	78

Table 2: People's perception of the sufficiency of width, benches, pavilion, extended outlet, and parking.

Safety and aesthetic issues:

Considering the various issues on the trail areas, as per the table below, 29% of visitors find there are insufficient lighting services, 17% find the risk of drowning, 19 % find the disturbance by street animals, 2% find the issue of pickpocketers. Also, 12%, 13%, and 8% find disturbance by bicycle users, disturbance by baggers, and insufficient trail width respectively.

Table 3: Safety and aesthetic issues

Issue 1		Issue 2	
Safety issues	People's perspectives (Percentage)	Aesthetic issues	People's perspectives (Percentage)
Insufficient lighting services	29	Unmanaged bushes	11
Risk of drowning	17	Poor solid waste management	38
Disturbance by street animals	19	Poor maintenance of the footpath	34
Pick pocketers	2	Dust in the walking trail area	12
Disturbance by bicycle users	12	Other issues	5
Disturbance by baggers	13		
Insufficient trail width	8		
Total	100	Total	100

People's priority for the improvement of the following issues:

As there are various issues on the walking trail, the highest percentage (24%) of visitors find an improvement in waste management, and the lowest percentage of visitors (6%) find that improvement should be done in lighting. Similarly, 11%, 18%, and 15% find the need to improve the children's play area,

improve safety factors, and increase the footpath width respectively.

Improvement priority on issues	People's perspectives (Percentage)	Condition of solid waste management	People's perspectives (Percentage)
Improve waste management	24	Well managed with dustbins	27
Improve lighting	6	Thrown in open space	63
Improve landscape	26	Have to take with visitors	10
Improve children's play area	11		
Improve the safety factors around the trail	18		
Increase footpath width	15		
Total	100	Total	100

Table 3: Safety and aesthetic issues

Activities by people and visitors:

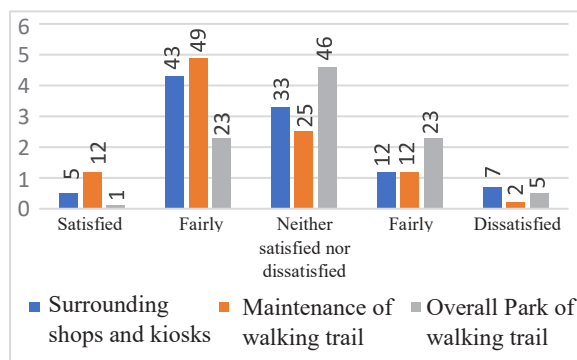


Figure 9 Activities by vendors and visitors

The above graph illustrates the activities of the people. Occasionally, music performance tends to be done by people which seem to be very accepted by 32% of visitors, somewhat accepted by 63% of visitors, and somewhat unacceptable by 5%. There are no people who say the performance is unsuitable by visitors. And on the other side, the presence of vendors is somewhat acceptable by 47% of visitors, very acceptable by 13% of visitors, and somewhat unacceptable by 30% of visitors. And 10% of visitors say that the presence of vendors is very unacceptable.

Satisfaction and dissatisfaction of various levels:

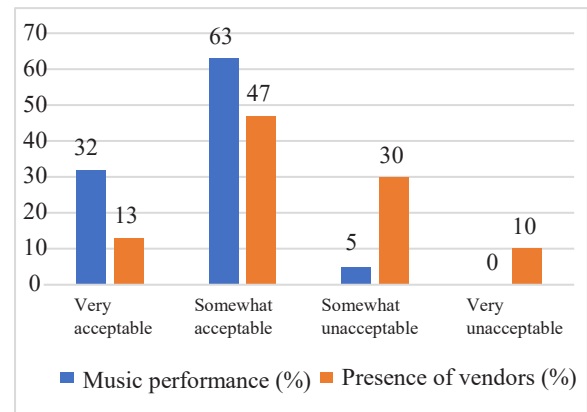


Figure 10: Satisfaction and dissatisfaction of various levels

The above graph illustrates the level of satisfaction by visitors in walking trail areas. 49% of visitors are fairly satisfied with the maintenance of the walking trail, 43% are fairly satisfied with the surrounding shops/kiosks and 23% are fairly satisfied with the overall park other than the walking trail. Whereas, 23% are fairly dissatisfied with the overall park and 12% are fairly dissatisfied with both surrounding shops/kiosks and the maintenance of the walking trail. Also, 46% are neither satisfied nor dissatisfied with the overall park condition, 33% are neither satisfied nor dissatisfied with surrounding shops/kiosks, and 25% are neither satisfied nor dissatisfied with the maintenance of the walking trail. Only 12% of visitors are satisfied with the maintenance of the walking trail, 5% are satisfied with the surrounding shops and kiosks and 1% are satisfied with the overall walking trail. 7%, 2%, and 5% of visitors are dissatisfied with the condition of surrounding shops and kiosks, maintenance of the walking trail and Overall Park of the walking trail respectively.

3.3. Discussion on the issues of visitors:

As per the random selection of the visitors in the study of the walking trail of the lakeside area. Female respondents are more than males. And 16-25 age group of people maximum visit the trail. The population of visitors visiting the trail area is more of the Pokhara valley than outside visitors which can be seen in above table 1.

A similar number of visitors visit the trail area once a month, once a year, and a couple of times a month. In the case of accessibility, it is found good by almost half of the visitors. Most people visit lakeside for the walking purpose and after that, they prefer sightseeing, jogging, fishing, etc. And the space for the walking trail is minimum as per visitors' perspectives. They find the need for a public washroom which is in very poor condition and fewer in numbers in trail areas. The major issue as per the survey data is waste management, which is randomly thrown in open spaces in walking and seating areas. Also, insufficient lighting is a safety issue that should be considered in further planning.

3.4. Issues on the walking trail as per vendors:

Most of the vendors sell tea, snacks, ice cream etc. As responded by the key informants, the solid waste generated by their business is managed by themselves collecting the waste and supplying it to the vehicles of the municipality. The lighting services on the trail area are contributed by the café and restaurants of trail area and in the open space where these amenities are not available the lighting facilities are insufficient. Also, the pavilion during the rainfall is insufficient for vendors. In addition to that, they have to pay Rs 30 per day to the boat committee for doing business in the area.

3.5 Issues on the walking trail as per the businessman, and shop owners:

As per the key informants, and observation most of the business involves café, restaurants, tea shops, coffee shops, clothing, and gallery. Among the issues, the waste is managed by themselves. Degradable waste is collected in their own surrounding area, and undegradable waste is collected and given in the vehicle of the municipality by themselves. As most of the buildings are within the setback area of Phewa lake, they have the fear of eviction by the municipality.

4. Conclusion:

This study aims at investigating the major physical issues that are impacting the beauty, sustainability, and livability of the lakeside trail of Pokhara City (near the Lakeside and Phewa Lake area). As per the survey data, the major issue found in the trail area is waste management, where most of the solid waste is thrown in the open space. Also, there is the serious issue of public toilets. Most of the visitors tend to buy the stuff from the vendors but the space for vendors is not well managed, there is no provision for separate stalls which there is a problem mostly during the rainy season. This paper is limited to the discussion of issues of the trial areas but for future studies focus on recommendations should be one of the desired topics for the rested researchers.

Acknowledgments

The study of the lakeside trail is an important topic for our research which couldn't be completed without the immense

support of the respondents. Also, we are very grateful to the vendor's representative (Nirmala Desai) and business owner of green leaf café for giving the required information. Finally, we are thankful to everyone who has, directly and indirectly, helped in the study.

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Appendix A: December 2022 General Lakeside Walking Trail User Survey Questions:

For Visitors

Name: Age: Gender:

1. Residence:
 - a. Neighborhood
 - b. Pokhara
 - c. Out of Pokhara Valley
 - d. International
2. Gender:
 - a. Male
 - b. Female
3. Age:
 - a. 15 and under
 - b. 16 – 25
 - c. 26 – 35
 - d. 36 – 45
 - e. 46 – 55
 - f. 56 – 65
 - g. 66 and older
4. Generally, how often do you use the walking trails?
 - a. Once a year
 - b. A few times a year
 - c. Once a month
 - d. A couple of times a month
 - e. Once a week
 - f. More than once a week

5. What activities do you do on trails? (Select all that apply)
 - a. Walking
 - b. Biking
 - c. Jogging/Running
 - d. Pet-Walking
 - e. Fishing
 - f. Other: _____
6. What would you consider your main use of lakeside walking trails? (Select all that apply)
 - a. Recreation
 - b. Health & Fitness
 - c. Commute/travel
 - d. Training
 - e. Gathering/Outing
7. How easy is it for you to access and get around the walking trail?
 - a. Very good
 - b. Good
 - c. Fair
 - d. Poor
 - e. Very Poor
 - f. No opinion
8. Average number of kilometers traveled on the lakeside trail per visit: _____
9. Average number of hours spent on the lakeside trail per visit: _____

10. What types of services and amenities are you looking for around the lakeside trail?
 - a. Restaurant/Café
 - b. Tavern/Bar/Brewery
 - c. Bicycle rental Shop
 - d. Retail/Gift Shop
 - e. Galleries/Antiques/Local Art
 - f. Public Restroom/Water
 - g. Other: _____
11. What do you want to purchase during your short trips?
 - a. Beverages
 - b. Ice Cream
 - c. Snack Food (*Panipuri, chatpat*)
 - d. Recreational Equipment/Bike/Rental/
 - e. Clothing
 - f. Souvenirs
 - g. Other: _____
12. Are there suitable seating spaces/ benches around the walking trail?
 - a. Yes
 - b. No
13. Is there a suitable provision for the pavilion of covered seating space during the rainfall?
 - a. Yes
 - b. No
14. How do you find the condition of solid waste management, caused due to visitors?
 - a. Well managed with dustbins.
 - b. Thrown in the sitting areas.
 - c. Thrown in the open space/park.
 - d. Have to keep it in our own bag.
15. How you find the presence of vendors in the walking trail areas?
 - a. Not at all important
 - b. Not very important
 - c. Somewhat important
 - d. Very important
 - e. Extremely important
16. Certain events and music performance is carried in the lakeside area, how do you find it?
 - a. Very Acceptable
 - b. Somewhat Acceptable
 - c. Somewhat Unacceptable
 - d. Very Unacceptable
17. How do you find the walking trail width?
 - a. Sufficient
 - b. Insufficient
18. What are the safety issues in walking trails?
 - a. Insufficient Lighting services
 - b. Risk of drowning
 - c. Disturbance by street dogs/animals
 - d. Pick pocketers
 - e. Disturbance by bicycle users.
 - f. Disturbance by beggars
19. What are the aesthetic issues?
 - a. Unmanaged bushes/ greenery
 - b. Poor solid waste management
 - c. Poor maintenance of the footpath
 - d. Dust in the trail areas
 - e. Others.....
20. Do you find the existing parking is sufficient in the lakeside area?
 - a. Yes
 - b. No
21. If you have an improvement priority, what might it be?
 - a. Improve waste management
 - b. Improve lightings
 - c. Improve landscape
 - d. Improve children's play area
 - e. Improve the safety factors around the lake
22. Is the extension of the business shop/ eateries outlet in the trail area acceptable?
 - a. Yes
 - b. No
23. Is there enough space in the park for your activities?
 - a. Enough space
 - b. Just sufficient
 - c. Too crowded
24. Do you use the Bathroom in this park?
 - a. Often
 - b. Sometimes
 - c. Never
 - d. No opinion
25. Please rate the bathroom in this park.
 - a. Good
 - b. Fair
 - c. Poor
 - d. N/A
26. Overall how satisfied or dissatisfied are you with the surrounding of the walking trail?
 - a. Satisfied
 - b. Fairly Satisfied
 - c. Neither satisfied nor dissatisfied
 - d. Fairly dissatisfied
 - e. Dissatisfied
 - f. Don't know
27. How do you rate the maintenance of the walking trail?
 - a. Satisfied
 - b. Fairly Satisfied
 - c. Neither satisfied nor dissatisfied
 - d. Fairly dissatisfied
 - e. Dissatisfied
 - f. Don't know

Appendix B 2022 General Lakeside Walking Trail User Survey Questions:

1. Vendors

Name: Location: Age:

1. What is your purpose for sitting on the lakeside trail?
 - a. Selling snacks
 - b. Selling souvenir
 - c. Selling cold drinks/ice creams
 - d. Others.....
2. How much time do you spend a day in the trail area?
.....
3. Do you need to get permission?
 - a. Yes
 - b. No
4. Do you have to pay anyone to use this space?
If yes who?
.....
5. Are you in threat of eviction?
 - a. Yes
 - b. No
 If yes who?
.....
6. What are the issues faced by the vendors?
.....
7. The space you are using is comfortable?
 - a. Yes
 - b. No
8. Do you contribute to the maintenance of the park?
 - a. Yes
 - b. No
 If yes how?
.....
9. How do you manage the waste generated from your business?
 - a. Collection and managed by ourself
 - b. Taken by visitors
10. What is the condition of lighting in the trail?
 - a. Satisfied
 - b. Fairly Satisfied
 - c. Neither Satisfied nor Dissatisfied
 - d. Fairly Dissatisfied
 - e. Dissatisfied
 - f. Don't Know

11. What do you do in case of rainfall during the trip?
 - a. Use your own umbrella.
 - b. Use covered settings.
 - c. Go to the nearby café.
 - d. No provision.

12. What are the issues faced by the vendors?
.....

2. Business Man

Name: Age:

Business categories:

1. Who is responsible for the maintenance of the walking trail?
 -
2. Establishment of Business?
 -
3. Extension date of Business?
 -
4. How do you manage the solid waste created by your business?
 -
 -
5. What are the issues faced during business?
 -
 -
6. Are you in threat of eviction?
 - a. Yes
 - b. No
7. How risky is the lakeside walking trail for visitors?
 -
8. How does the weather affect the business of your area?
 -
9. Is there sufficient maintenance of the walking trail?
 -
10. In which period of the month there is a crowd in trail areas?
 -

JUDDHA SADAK - NEW ROAD TO OUR IDENTITY

○Ar. Shreenika Manandhar*

Abstract:

Juddha Sadak was the gateway to the core of Kathmandu city and was known as the beginning of Contemporary Street that connected the open space of *Tudikhel* to the exquisite treasures of *Basantapur Durbar Square*.

The *New Road* was an evolution from *Juddha Sadak* through the years transforming this space into a commercial hub with high traffic congestion. It gave a new identity and was a place where modernism and traditionalism clashed during the friction of evolution.

With development comes fear of loss of identity and presently Newroad is going through an identity crisis with urbanisation replacing the traditional city. Newroad, although still an entry to the core city, feels like a chaos to walk in. Modernism has turned into chaos as it is developing without any identity. Bhugol Park has become a forgotten barricaded space and feels small to cater the huge mass. This paper stresses that even with all the chaos, the park still provides a sense of nature. Individuality also came with start of the contemporary city as everyone owned vehicles and lack of community feels highly missed.

This paper emphasises on the drastic contrast between the lively street of Basantapur and the chaotic Newroad and it expresses that building a peaceful blending of surrounding is truly the role of architecture in creation of contemporary identity. This paper gives the envision of a future Newroad that is peaceful, pedestrianised and vibrant. The park can be extended which can lead into the old city and contrast between the traditional and modern buildings can show the evolution of street. The city needs a direction to end the chaos and the sense of community should be enriched by building an identity of ourselves.

This paper examines Juddha Sadak or New Road from the vision and possibility to connect the open space of Tudikhel in a pedestrianised build-up to highlight the Basantapur durbar square.

1. A Vision of the past

Juddha Sadak is the beginning of Contemporary Street and was known as the King's way of Nepal. The street connected the open space of *Tudikhel* and the peripheral area of Kathmandu to the exquisite treasures of *Basantapur Durbar Square*. Juddha Sadak was the first road to link the Basantapur Durbar complex to what was then a peripheral area of Kathmandu.



Figure 1-1: Juddha Sadak in 1930s

Source: <https://www.pinterest.com/pin/750623462882774277/>

The old streets and surrounding of the Kathmandu durbar square received a change after the 1934 Nepal- India earthquake which destroyed many buildings in the valley. The disaster offered a window to start from scratch and build back the surrounding in a better way. The road was built during the period of prime minister Juddha Shumsher Jung Bahadur Rana after the 8.3 magnitude earthquake that devastated the valley to build the first planned street in Nepal by demolishing the destroyed houses which lied along the now present roadway. (Bajracharya, Rebuilding Kathmandu after the 1934 quake, 2021).

The prime minister had given loan to the public for the reconstruction of houses after the disaster. Later Junga Shumsher Rana cancelled all debts on loans given to people before the earthquake, for supporting reconstruction. The planning was done by creating a road linking Tudhikhel to Basantapur along with another four-way street leading to Basantapur, Indrachowk, Tudhikhel and Pyafal. Various developments surrounded the new road such as the fire station building, Bishaal Bazar, Nepal Bank and Bhugol Park.



Left: Kathmandu's urban planning before the 1934 earthquake. Right: Capital's map following redevelopment.

Figure 1-2: Planning of the city

Source: <https://www.nepalitimes.com/here-now/rebuilding-kathmandu-after-the-1934-quake/>



Figure 1-3: New Road in 60s

2. Evolution towards Modern society

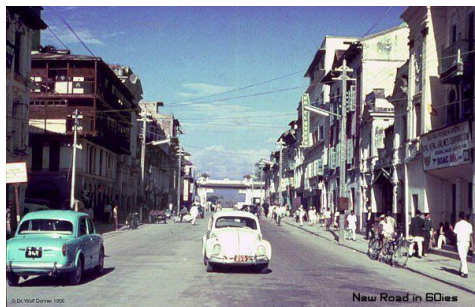


Figure 2-1: Juddha Sadak in 1960s with vehicles

Source: <https://m.facebook.com/oldnepal/photos/newroad-in-60iesphoto-by-dr-wolf-donner/306651339374109/>

Juddha Sadak is a two-lane street that evolved as the gateway to the core of Kathmandu city which developed as a commercial hub. It started a new era to the old surrounding through the development of road hence the name “New Road”. It is centrally located towards the midpoint of the ring road of Kathmandu and also to the center of Basantapur, Kathmandu.

After the end of Rana regime, it became a place of freedom where people would gather around the pipal boat and Bhugol park for any public or political event. As relevant from its title, it is clearly evident that the New Road was built in a newer era compared to the rest of the roads. New Road is the economic and busiest street of the entire country of Nepal.

The Newroad was an evolution from Juddha Sadak with urbanisation transforming this space into a commercial hub with high traffic congestion. It gave a new identity to our old city with the development of a contemporary street nearby through New Road gate leading further to the first mall of Nepal - Bishal Bazar, and other modern buildings such as Nepal airlines building and others. With time the old traditional buildings got replaced with higher contemporary buildings with the rise of business around the area. Now buildings are constructed in a haphazard dense manner aiding to the chaos. New Road was the place where modernism and traditionalism clashed during the friction of evolution. Juddha Sadak has evolved into Newroad and also marks a beginning of modernism flourishing into the country.

2.1 Lost in transition:

Rapid and unplanned growth took over Kathmandu Valley towns over the past decades and has resulted in the haphazard development of new neighbourhoods with significant consequences on their public and open spaces. Over the time with the wave of urbanization all around, Juddha Sadak became a dense surrounding with high buildings and electric lines covering the view of the monumental zone.



Figure 2-2: Present condition of Newroad

Source: <https://myrepublica.nagariknetwork.com/news/new-road-losing-its-charm/> (Pangeni, 2017)

With development comes the fear of loss of identity and presently New Road is going through an identity crisis with modern buildings and urbanisation replacing the traditional city. The once beautiful street with traditional facades reminiscing of the past architectural history now although still an entry to the core city, feels like a chaos to walk in.

Although the modern and old buildings are still standing together the place is lost with vehicular flow and busy street being the focal point instead of it being the visibility of the Durbar square and architecture around it. The streets in which once people would have loved to live in are now what we would want to avoid even walking in. We do not see modernism here but we see the chaos that it has created. Modernism itself is not bad but at present it is developing without any identity and becoming a copy. The electric lines are running throughout the street and adding to the hindrance of the place.

The Bhugol park which is a small pocket of greenery in the commercial core of Kathmandu city has now become a forgotten and unused barricaded space that feels small to cater the huge mass of the area. The park houses a green lawn, an open area used for blood donation and a pillar that is an earthquake memorial. Although it is situated in a really critical position in the city, it seems to be failing to cater the need of an open space in the really active part of the city. The fences all around separate the green from the pedestrians and the temporary fencing inside the park restricts public from entering the lawn. Similarly, the street vendors further create a new layer between the public and the park while adding on to the congestion of the footpath around the park. This paper also stresses that even with all the chaos, the park still provides a sense of nature through the sounds of birds and greenery.



Figure 2-3: Bhugol park in 1950s



Figure 2-4: Bhugol park in present

Source: <https://english.onlinekhabar.com/public-parks-in-kathmandu.html>



Figure 2-5: Empty space behind Bhugol Park

Bhaktapur and Patan Durbar Square have maintained their traditional architecture and roots whereas Kathmandu Durbar Square with the commercial hub so nearby is going through an identity crisis and has led to this chaos in the name of transition. From a commercial standpoint, New Road is visited by tens of thousands of people every day, locals and tourists. Everything is available on this market, ranging from clothing, fashion and textiles, electronics, home cutlery, jewellery etc. As

mentioned earlier that it is the busiest area in all of Nepal, but it is also the most populated area in the whole country.



Figure 2-5: Plan of Kathmandu Durbar Square and New road
Source: Google Earth

2.2 Rise of individuality and loss of community

Individuality also came with the start of the contemporary city as everyone owned vehicles and everyone had a desire to own a bigger land or taller house to generate more income creating a mess. Fragmentation of lands took place and taller buildings with less site area developed at a high space with economic sprawl in New road.

The children who once played out in the open spaces in New road and the park area now play with themselves on their computers with the advancement of technology and no open space and therefore lack of community feels highly missed. The streets which were once lively and the community came together is now a place people would want to avoid to walk in because of the crowd and chaos.

In past the community were connected which gave a sense of security to the people. If a visitor came the neighbours would notify the owner but now no one cares about anyone and the surrounding and security in the community has lessened greatly. The escalation of individuality has split people and the people are satisfied with themselves and only work for their betterment than for a common goal of community. The old traditions and music are getting lost and we are losing our identity day by day. The streets where once tradition and culture came alive are now tall concrete buildings that reflect the rapid urbanization in the area. Rise of individuality is seen in Newroad through the fragmentation of lands and higher rise buildings and lack of open spaces for community to come together.

3. Role of Architecture and Planning in creation of contemporary identity of city

This paper emphasises on the drastic contrast between the lively street of Basantapur and the chaotic New Road and it expresses that building a peaceful blending of surrounding is truly the role of architecture in creation and perseverance of our contemporary identity. Our identity can be rebuilt by polishing the flaws and developing while still being true to ourselves. This paper gives the envision of a future New Road that is peaceful, pedestrianised and vibrant without any electrical lines or street vendors where people can walk from anywhere and see the monumental zone and get the feel right away. The park can be extended to a large open green space with multiple functions that can lead into the old city and contrast between the traditional and modern buildings can complement each other and show the evolution of the street. The city needs a direction to end the chaos and the sense of community

should be enriched by building an identity of ourselves and making New Road a meaningful route.

Kathmandu durbar square although is a world heritage sites along with Bhaktapur and Patan is threatened by modernism the most. The modernism has affected Kathmandu highly as it is the main capital and a commercial hub right beside the durbar square has brought a huge clash. Buildings which once the old traditional architecture are now filled with banners of advertisement in the facade. It is important to reach to a balance in order to save our identity.

The paper deduces that the main role of architecture is to come up with a solution for this modern chaos and enhance the contemporary beauty of the street while also amplifying our heritage. The role of architecture is to guide the community to build our identity back while also moving forward with the contemporary advancement. The planning should be done to approach a peaceful blending in the society.

4. Envision of a future New Road

This paper tries to make the reader imagine a Newroad where people can see the contemporary architecture flourish but still see the glimpse of our past and heritage. It tries to create a vision where the streets are not a chaotic mess but as past times leads to the core city without any sort of disturbances like crowd, noise or visibility. The paper tries to hold us to our roots. This paper shows the vision of connecting the inner Durbar quare in a highlighted manner from the main road and open space of Tudikhel and is a visionary of what walking in New road can feel like.

The underground cable network that is currently happening in the valley is a good change. The jumbled wires have become an eyesore. Along with the improvement in the visual of the street it also will have many other benefits for power utility like smaller voltage drops and reduces safety hazards during storm and lightning. The streets of Juddha Sadak would be free from the disturbance of the wires giving visual access to the treasure of our Durbar square.

A peaceful and vibrant Newroad is where the streets are more oriented to the public than the vehicles. It is where the facades and buildings reflect our ancient history and architecture. The envision is of a newroad with larger and open Bhugol Park inviting the public and with large parks in the periphery Tudikhel and Sundhara. The paper shows the possibility of a Newroad with larger footpaths and less traffic congestion and it ultimately tries to give a vision of a peaceful walk from the Newroad gate to the Durbar Square. The following measures can be taken to achieve this envision in reality.

4.1 Urban Decentralization:

New Road has become a commercial hub where all kinds of shops starting from electronics, retail to food all are present in the same area catering to more mass. *Decentralization* of the city is a must to improve the condition of the ongoing chaos. The paper stresses that if decentralization of power and opportunities are done in the city, chaos can be controlled. The facilities should be provided properly outside the valley as well so that people do not have to migrate to the capital to meet their needs. It is generally a concept in which the activities of an organization and facilities are distributed or delegated away from a center.

Decentralization of both population and employment is needed right now as Newroad has become the established city centre.

Only with the distribution of the urban spaces the population flow into the street can be controlled. It is the major tool to control the crowd and population.

4.2 Traffic management in New Road area

The street of new road is a noisy mess with numerous vehicles in the road. Traffic management can be done in New Road by making the road a one-way lane which would help control the traffic flow while also being practical to the present condition. The main aim of this paper is to create a street of New Road that is peaceful and vibrant to walk.

The public can be given provision of an underground level parking in Tudikhel to cater the mass and it will help promote walkability in the street. The open parking of vehicles should be removed and underground parking spaces and one-line street parking can be provided in the inner arterial road by turning the busy road into one way. The pedestrianizing of smaller streets in new road can be done which will lead to a peaceful surrounding and promote a heritage walk reducing the chaos in the city.

The city of Bogota is a great example to show how proper planning and management of traffics can help better the situation of the city. The past mayor of Bogota Enrique Peñalosa wanted to make the city more for the people and less for the cars. For this, he firstly introduced a public transportation facility through bus called “Trans Milenio” which was given a specified lane and a station to take over the existing facility. This greatly improved the traffic congestion in the road due to the public transports and also the people reached their destinations faster. Then the pedestrian lane was increased by decreasing the existing road and parking space and ample space was given for people to walk in. Peñalosa proposes that our current cities are completely wrong; we need to be able to walk, run, bike, be with people in public spaces, and have contact with nature, all without feeling inferior (Enrique Penalosa on the Democracy of sidewalks, 2015).



Figure 4-1: City of Bogota before and after

Source: <https://www.resite.org/stories/enrique-penalosa-on-the-democracy-of-sidewalks-and-bike-lanes>

An example right in our country is the street of Thamel and Bandipur. The prime congested area of Thamel has become a walk only zone promoting the tourism of the place. The initiative of tourism entrepreneurs, hoteliers, civil society, local residents and traffic police is aimed at easing pedestrian movement in the area where overcrowding of narrow streets had raised concerns for safety of visitors including tourists. Emergency vehicles such as ambulances and water tankers will be allowed in the prohibited area and passes were provided to the locals (Mandal, 2017).

Similarly, the street of Bandipur which is pedestrianized is a major tourist hub for both international and national tourists. The surrounding there show the newari architecture and people are

able to walk in the middle of streets. If the streets of Thamel can be pedestrianized then the small streets of Basantapur can be as well and the road of Newroad can be public friendly by limiting vehicle flow in the street.



Figure 4-2: Street of Bandipur

Source: <https://www.bac.com.np/about-bandipur/>

4.3 Parks and Pocket parks

To build the community closer pocket parks and open spaces are very important as it gives a space for public to gather and come together. Every city needs big parks and smaller pocket parks around it for some greenery, peace and vibrancy. The meaning of park has...

The open area next to Bhugol park which is right now being used for the open parking of vehicles should be removed and the park can be extended on its place like it used to be. The present bhugol park which is barricaded should be redesigned with an open concept such that it feels welcoming to the public. The barricades should be removed along with the shops in footpath which is currently creating disturbance for walking. A certain small space can be allocated specifically for the shops in an organized manner.

The major park in the durbar square area can be the Shankhadhar park with the underground parking next to it in the khula munch. The open space around Dharahara area should also be designed properly catering to the public as a breakout refreshment area. Then the surrounding will have few open spaces in various areas with bhugol park, basantapur chowk, sundhara park and ratna park. The pocket parks will provide a sense of nature even if it is small and the addition of greenery will help escalate the beauty of the street.

Right now, only 15% of the total area of Tundikhel is accessible by the public. The KMC has plans about creating an underground parking in the Khula munch of Tudhikhel to control the traffic which needs to go through a proper geology test to be established. It is fragmented into sections under either institutional and/or military control. After the 2015 earthquake, even the area with public access has mounds of debris and is fenced off to park tipper trucks (Shrestha, 2022).

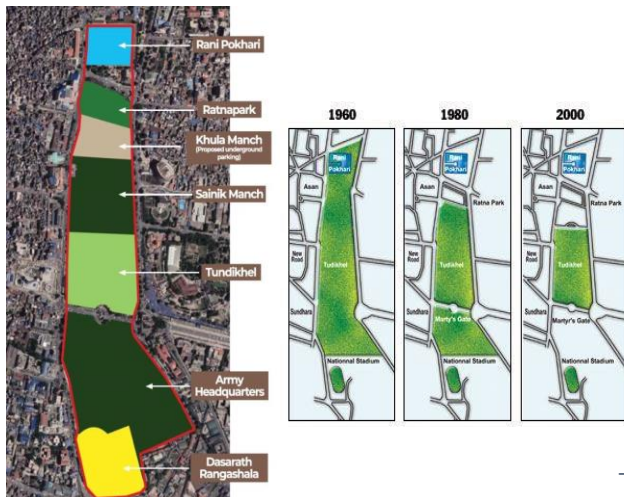


Figure4-3: Fragmentation of Land Source: (Shrestha,2022)
 Figure4-4: Shrinking Tundikhel Source: <https://archive.nepalitimes.com/news.php?id=5876#.Y7-dJHZBz4Y>



Figure 4-5: Tundikhel at present Source: (Kc, 2017)

Central park situated in New York City in Manhattan is a delightful example of an urban park which caters the huge around New York City and has various facilities. It is an open space for people to come together and enjoy nature. Tundikhel although large in area near to the core of city is unmanaged and is not a place where people go. The paper intends to propose use of Tundikhel in a proper way by designing it properly and giving access to people and how it can change the scenario of the valley.



Figure 4-6: Central Park Photo- Peter Adams/Getty images

4.4 Build of community

To envision a place where community comes together like before should be what architects strive to achieve. The paper tries to convey that with, less vehicles, traditional façade, extension of park area and creation of peaceful surrounding people will be motivated to work to preserve our identity. Activities and places can be introduced as a means of promoting sense of community. It should be about us and not about an individual. Everything is becoming for oneself and we are losing the value of us. Only when the sense of community rises people will be proud of our heritage. To build the community we should design places where people can come together and buildings reflect the heritage and tradition and people have space to come together.



Figure 4-7: New road with Banners Source: <https://www.thelongestwayhome.com/travel-photography/nepal/new-road-kathmandu.html>

Currently the street of Newroad has become an advertisement through banners placed in facades of the building. The facades do not show the Nepali architecture but is completely taken over by modernism and buildings stand out by self rather than there being a blend.

Sense of community can be built if we have a sense of our heritage as it humbles down the people. For this strict rules must be implemented for new construction to follow the traditional architecture with proper bye laws corresponding to the zone it lies in. The current buildings must have façade treatment through brick exposure or to show the history of place. The advertisement banners should be removed as it creates a disturbance to the view. The buildings should show a sense of continuity and community.

To give an example the city of Amsterdam is a place which has changed and developed with the rise in modernism but also it has maintained its roots. The buildings have a similar façade differentiated either with colours or material and the scale of the buildings are similar. Here no building is the highlight but the buildings have created the overall architecture of the surrounding and created a peaceful blend.



Figure 4-8: Amsterdam city Source: <https://www.predicthq.com/major-events/cities/nl/amsterdam>

Conclusion

The aim of this paper is to give an envision of a new Newroad to the people and encourage the community to work towards it. It tries to show us the possibility of a pleasant vibrant street from the current chaos. The paper encourages the community to come together and make a better street where public is given more priority than the vehicles and where facades of the building represent our past and heritage and gives a sense of continuity in the fast changing world.

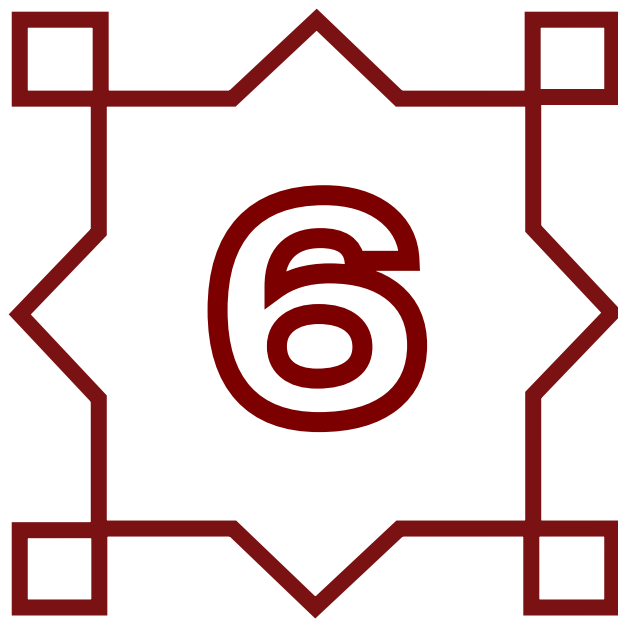
This paper examines Juddha Sadak or New Road from the vision and possibility to connect the open space of Tudikhel in a pedestrianised build-up to highlight the Basantapur durbar square. The world heritage site Kathmandu Durbar Square and its vicinity should be conserved and protected and Newroad should be a place that introduces to the old treasures of the city through its gate. The paper deduces that the present commercial chaos identity should be changed and a new identity that defines our heritage and past should be encouraged.

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THEORIES AND EXAMPLES

04

Panel Discussion: The Organized City Regions, Case of Kathmandu Valley: Future Direction?

Session Moderator: Dr. Mahendra Subba

The panel discussions on “The Organized City Regions, Case of Kathmandu Valley: Future Direction?” was moderated by Dr. Mahendra Subba and the panellists were Dr. Ajay Chandra Lal, Dr. Sangeeta Singh, Ar. Yogeshwor Parajuli and Ar. Yek Raj Adhikari.

The session addressed the theme of an organized city region, specifically focusing on the case of the Kathmandu Valley in Nepal. The presentation emphasized the impact of migration on urbanization in the valley, with a rapid increase in population leading to spatial and environmental issues such as land conversion, housing needs, air and water pollution, and traffic congestion.

Dr. Subba highlighted the need to spread economic opportunities across the country to promote balanced growth and development, rather than concentrating economic activity within the Kathmandu Valley. He suggested that organizing the city region requires the integration of urban planning, environmental management, and economic development to address the challenges and promote sustainable development in the Kathmandu Valley.

During the panel discussion, Dr. Ajay Chandra Lal, a professor at the Institute of Engineering, shared his thoughts on the concept of an organized city. He argued that an organized city is not necessarily a planned city, but rather it is shaped by the needs of individuals and society. The focus should be on the location of important activities, such as residential areas, hospitals, schools, and other services. He also discussed the need to update the legal framework for urban development in Nepal, as the current law has not been reformed since the establishment of the Kathmandu Valley Development Authority in 1988.

Overall, the session emphasized the challenges and opportunities associated with urbanization in the Kathmandu Valley and the importance of organizing the city region to promote sustainable development. The panelists discussed the need for a holistic approach that considers urban planning, environmental management, and economic development to address the spatial and environmental issues associated with rapid urbanization.

In the discussion, Dr. Mahendra Subba asked Dr. Singh about her research on affordable housing in Nepal. Dr. Singh shared her insights on the challenges of providing affordable housing in Nepal, such as the lack of government policies and regulations, inadequate infrastructure, and limited access to finance. She emphasized the importance of public-private partnerships and government intervention in providing affordable rental housing, which has been successful in other countries. Mr. Yogeshwor Parajuli, former development commissioner, discussed the participatory process he implemented to create the Kathmandu Valley Development Authority (KVDA), which acts as a coordinating, regulating, and monitoring agency for development plans in the area. The discussion then turned to the current dysfunctional relationship between municipalities and KVDA, which the joint secretary of the Ministry of Urban Development acknowledged. He discussed the ministry's plans to coordinate policy among different land and infrastructure agencies and create a coordinating agency for utility infrastructure at the valley level. The ministry also plans to revise bylaws and identify and conserve heritage sites in the valley.

The conversation between Dr. Subba and Mr. Joint Secretary focused on the review of national urban policy and the need to manage the growth of Kathmandu Valley properly. Dr. Subba highlighted the issue of migration and the need to develop regional cities, provincial capitals, and small towns as market centers to check migratory tendencies. Ar. Adhikari talked about the need for policy changes to ensure that investment goes to the planned area rather than sprawling areas. Finally, the conversation also addressed questions from the audience, which highlighted the conflict between the Kathmandu Development Authority Act and the Local Decentralization Act, the need for political will to decongest the Kathmandu Valley, and the importance of focusing on other cities of the country to find probable solutions to decongest Kathmandu.

Panel Discussion: The Organized City Regions, Case of Kathmandu Valley: Future Directions?



Dr. Mahendra Subba

Dr. Mahendra Subba is a former Director General at Ministry of Urban Development, Nepal. He received a Masters in City Planning (MCP) from the University of California, Berkley and eventually earned a PhD in Town and Regional Planning from the Norwegian University of Science and Technology (NTNU). In his thirty-year career, Dr. Subba has undertaken various roles and responsibilities both as a professional planner and a civil servant. Dr. Subba has been consistently engaged in the academic field and is a visiting Resource Person at the Institute of Engineering and the Khowpa Engineering College. He is also a regular contributor to the national daily newspaper Republica and has authored several research papers on pressing urban challenges in Nepal.



Participant 1

Dr. Ajay Chandra Lal

Dr. Ajay Chandra Lal completed bachelor of architecture from the School of Planning and Architecture in New Delhi. He earned a master's degree in sociology from Tribhuwan University's Trichandra campus. He has been educator of various subjects including urban and regional planning, disaster risk management, and policy research and capacity building on local governance and climate change, public involvement, and disaster risk reduction.

He has professional experience in city and infrastructure planning, as well as land development, and is currently working as an Assistant Professor at TU's Institute of Engineering Pulchowk Campus.



Participant 2

Dr. Sangeeta Singh

Professor in Urban planning at the Institute of Engineering and teaching for 26 years since 1997. Holds PhD in Urban Planning (specializing in eco cities). Did M.Sc. in Infrastructure Planning from the University of Stuttgart, Germany and basic degree is Bachelor's in Civil Engineering. Is currently the Director at the Centre for Applied Research and Development at the Institute of Engineering and has led a number of research projects related to ecological urban planning, Disaster resilience, equitable urban resilience, sustainable development, gender mainstreaming among others. Currently leading one of the GCRF research as a city lead of the "Tomorrow's cities" in collaboration with University of Edinburgh and others. Is the coordinator for the M.Sc. in Energy for Sustainable Social Development program, which is two years master's program being conducted at the Department of Architecture at the Institute of Engineering in collaboration with NTNU, Trondheim, Norway. Is the board member of the University Grants Commission and also one of the board of trustees of Gandaki University. Is the coordinator of the Nepal National Urban Forum. Apart of academic research has been involved in several professional consulting services in Engineering design and urban planning. Has been undertaking and has published various research works especially in the field of eco city and sustainable development, and has been a visiting scholar at Kyushu university, (Japan) and KU Leuven university (Belgium), Tibet University.



Participant 3

Ar. Yogeshwar Parajuli



Ar. Yogeshwar K. Parajuli is currently the Managing Director of TAEC Consult P. Ltd., a multidisciplinary engineering consulting firm operating since 1977. After his graduation in 1977 from Chandigarh, India, he joined the Bhaktapur Development Project carrying out the comprehensive urban renewal, conservation and development of medieval town, Bhaktapur for about a decade. As consultant he has been Team Leader/ Principal Design Architect, Project Director for a number of large scale architectural, urban planning, civil engineering projects.

Participant 4

Ar. Yek Raj Adhikari



Yek Raj Adhikari is an architect and urban planner who has made significant contributions to the development of Nepal's infrastructure. He was born in Kaski and attended Machhapuchhre Secondary School, where he received his secondary education.

In 1991, Yek Raj Adhikari earned a Bachelor of Architecture (B.Arch.) degree from an accredited university, which gave him the necessary training and knowledge to become a professional architect. He began his career as a soil conservation and watershed management assistant with the Department of soil conservation and watershed management in Nepal. In 2006, Yek Raj Adhikari joined the Department of Urban Development and Building Construction (DUDBC) as an architect and urban planner in Kathmandu. He was responsible for designing government buildings, reviewing planning and design reports of municipal infrastructure, and supporting DUDBC in policy formulation and

guideline preparation related to urban development, building construction, and housing sectors. In May 2016, Adhikari was promoted to the position of Senior Divisional Engineer in Nepal's Dolakha region. He was appointed as a Division Chief in DUDBC and continued to serve as an architect and urban planner, where he contributed to the development of the region's infrastructure.

04

Presentation Session: Theories and Examples

Session Chair: Ar. Devendra Nath Gangol

The session on “Theory & Practice” chaired by Ar. Devendra Gongal, where different speakers presented their ideas related to architecture and urban planning. The session started with Shilpa Sharma’s presentation on empowering public spaces in cities through human connections, followed by Ar. Shubhi Goyal’s ideas on reinterpreting Kathmandu and creating mixed-use neighborhoods in the upcoming New Town. Rashmi Gautam then talked about enriching pedestrian experience in the socio-cultural and environmental landscape of the Kathmandu Valley. Gyanendra Raj Devkota discussed the role of architecture in creating the identity of contemporary cities, and Suraj Khanal talked about the impact of newly enacted building by-laws of Kathmandu metropolitan city on architecture and urban policy.

Ar. Devendra Gongol reflected on the theme of the session and shared his thoughts on the role of theories in architecture and urban planning. He highlighted that theoretical fundamentals are not always practical for implementation and that theories are usually contradictory. He mentioned Robert Moses, the biggest builder in the world, and how his work was opposed by many planners in the United States. However, every country in the world copied New York’s network, which Moses built. He stressed that architects should have their theory, no matter what the theories say, and have confidence in their approach to architecture. He concluded with a Sanskrit poem and urged everyone to try to make habitable cities.

Session Chair

Ar. Devendra Nath Gangol



Architect Devendra Nath Gongal is a practising Architect of Nepal. He has a Master in Architecture, Japanese architecture, Housing Building and Planning. His professional works started in Government office and was the Deputy Director of Department of Tourism. As an architect consultant, he provided his services to many international organizations and Governments, designed various educational and corporate buildings and complexes, Urban and Tourism Master Plans and Programs (Pokhara, Lumbini, Banke, Bardia and Manaslu) in all the geographical regions of Nepal. He did significant works in strengthening and capacity development of Government offices and Municipalities and provided Project Management Trainings. He is regularly involved in pedagogy

producing new generation of Nepali architects. In Government office, he was involved in designing Government buildings, Urban Development Planning, man power development, and tourism related projects preparation. He implemented many of these projects which included airports, conservation areas (Annapurna, Manaslu, Makalu- Barun and Kunchanjunga), urban conservation (Pokhara, Gorkha), rehabilitation, community development, infrastructures like micro hydros, urban sanitation, and roads. He was active in establishing SONA and SAARCH, and led them as President. He is still active in supporting SONA and SAARCH for the promotion of architectural profession and other social works.

Presenter 1

Ar. Shilpa Shrama



Dr. Shilpa Sharma is Associate Professor at the Rachana Sansad's Academy of Architecture, Mumbai. She has been practising in the field of architecture and design for over two decades and has more than 15 years of experience in architectural education at various colleges in Mumbai. She has completed her doctoral research from the RTM Nagpur University in 2020 with the topic Architectural Requirements of Dance Performances in Hindu Temples in India, which covered temple evolution from the 6th to the 16th centuries in the Indian state of Karnataka. She has published several papers on architecture of temples, vernacular expressions and urban insertions, delivered lectures and held workshops on art and architectural movements, temple architecture and research methodology and served as jury member for several universities in Maharashtra. She has been the recipient of the IIA Awards for Excellence in Architecture

2018 in the Research Category for her paper Architectural Strategies used in Hindu Temples to Emphasize Sacredness. She is an active member of IIA, of the Executive Council of Brihan Mumbai Centre and is currently a member of the Editorial Committee of the Journal of the IIA and has been instrumental in developing and promoting the Research section of JIIA.

Presenter 2

Ar. Shubhi Goyal

Shubhi Goyal is an architect and aspiring urban planner. She completed her Bachelor of Architecture from School of Planning and Architecture, Delhi in 2021. At her current role at Mathema + Partners, she is involved in the design and execution of projects across a range of scales and geographies. A city lover at heart, she aspires to improve urban conditions for greater sustainability and social inclusion. Her work aims to coalesce critical thinking with real-world pragmatism, employing design, research and engagement driven methodologies to create cities that are safe and resilient. When she is not staring at a computer screen, you will find her roaming around random neighborhoods, basking in the sun, and sampling the best coffee in town!



Presenter 3

Ar. Suraj Khanal

Suraj Khanal is a permanent resident of Chandol, Kathmandu, Federal Republic Nepal, born on 27th July 1983. He is a professional architect and a committed individual towards his duties and responsibilities. Currently, he is pursuing a master's degree in Urban Design & Conservation at Purwanchal University, Khwopa Engineering College, after completing his bachelor's degree from Tribhuvan University, Kathmandu Engineering College (KEC) in 2009/10 AD. Suraj was an average student and completed his Secondary Education Examination (SLC, 10th Grade) in Brihaspati Vidyasadan, Naxal, in 2000 AD. He chose to study Science in Viswa Niketn Science Campus, Tribhuvan University and earned his B.Arch degree in 2009 AD.



During his five years of bachelor level, he participated in various practical sessions such as presentations, case studies, literature reviews, guided practice, self-practice, and project works. These experiences helped him develop knowledge, skills, and attitude to perform at the highest level after graduation. Suraj has worked on many private and government projects, some commercial projects, and few educational projects. He also served as a visiting lecturer at some colleges. Joining Society of Nepalese Architects (SONA) was a life-changing moment for him. SONA, a Non-Government Organization, works for the benefit of Nepalese architects and the betterment of Nepalese Architecture. Suraj served as the General Secretary of SONA from 2019-2021 and currently holds a key position in the 14th Executive Committee as an ex-officio member and chairperson of the "Committee for Social Responsibility (CSR)".

Presenter 4

Ar. Rashmi Gautam



An architecture and art enthusiast, Rashmi Gautam, is an Architecture student at I.O.E., Pulchowk Campus, in search of her own expression through design. An editor and designer in Vaastu Magazine published by Association of Students of Architecture (ASA), Pulchowk Campus and a Writing Program Trainee at Rethinking The Future (RTF), she has been exploring ways of putting her ideas on architecture and design out there in any ways that she can. She has a strong belief in the power of architecture in defining lives of people and is mostly interested in studying about how people behave in public and how urban design interventions facilitate a healthier, more interactive and connected urban life. Finding solace in the company of literature, art and architecture, she can be found brooding in the nearest library or museum.

Presenter 5

Ar. Gyanendra Raj Devkota



Gyanendra Raj Devkota is an accomplished architect, urban planner, and GIS expert with over two decades of experience in the field. He holds a Master's degree in Urban and Regional Planning from the University of Twente in the Netherlands. After completing his Master's degree in 1998, Devkota began his career as a Trainee Architect at Blue Mountain Design Company. In 1998, Devkota moved to Bhaktapur Municipality, where he worked as a Trainee Architect responsible for drawing and documenting monument sites in the Bhaktapur Municipality Area, a UNESCO World Heritage Site. In 2001, Devkota founded Design Advocate Pvt. Ltd., where he has been serving as the Managing Director and Architect ever since. He has been involved in various projects such as the design development of the architectural model for a 200-bed Medicare Hospital in Balkhu, Kathmandu, and the construction of a school in Sridibas, Gorkha, founded by the Embassy of Japan and

Asian Architectural Friendship (AAF). He has also worked on various residential projects, including the Chanda Ojha and Khanuparude residences. Devkota has been a Lecturer at the Tribhuvan University Institute of Engineering since 2000, where he has been teaching and also working as an architect and planner in its consultancy services. In addition, he has served as a Faculty Member for Exterior Interior Pvt. Ltd, where he conducted a one-year diploma course in Interior Design.

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EMPOWERING PUBLIC PLACES OF CITIES THROUGH HUMAN CONNECT

○Dr. Shilpa Sharma*

Abstract

This study looks at the importance of recognizing human needs to create successful public places. Three theories are reviewed which have essentially looked at human behaviour in public places. The examination of three cities, New York, Varanasi and Mumbai, shows that the formation of public places in cities takes place, whether planned by authorities or not, or whether they evolve through tradition and heritage. The paper concludes that the formation of public places is essential to fulfil the inherent need of human connect.

That by the term architecture is meant the endeavour to harmonise the environment with Man with freedom and great audacity, that is to transform the world of things into a direct projection of the world of the spirit.

Antonio Sant'Elia, *Manifesto of Futurist Architecture* (1914).

1. Introduction

Cities have always allured people with their aspirational and exciting lifestyles and promise of economic prosperity. In India too, as elsewhere, the demand for urbanisation has led to the sprouting of urban and peri-urban development. It is seen that this indiscriminate growth shows scant respect for human beings and their innate social requirements.

This presentation aims to trace various facets demonstrating the importance of creating the human connect and how it has helped to empower the city and its growth.

The methodology includes a descriptive study of cities which have taken into account the human connect. Examples show how urban regulations have facilitated contemporary humane urban environments.

2. Literature Review

The foundation of a humane, people-centric city is the understanding of human values and behaviour fundamental to the planning process of public spaces (Rajwade, 2015). Certain theories have been propagated, of which, this study takes a look at three which have been seminal:

i) Imageability of a City

Image of the City (1960) by Kevin Lynch, puts forward the idea of imageability of cities. In an urban setting, people use 'mental maps' to orient themselves in their physical surroundings. This mental imagery is formed through experience, as well as memory of five main elements: paths, edges, districts, nodes and landmarks. The picture formed by these elements helps in wayfinding and in countering disorientation and for emotional security. This intensifies the human experience of the city. In order to reinforce the imagery, these five elements have to be identifiable, have a clear relationship with their surroundings and evoke meaning and emotion.

This visual palette helps urban designers to plan the city so that people form a strong attachment with a place.

ii) Eyes on the Street

In *The Death and Life of Great American Cities*, Jane Jacobs (1961) critiqued American urban design concepts and redefined city planning. She recommended diversity in place of homogeneity, safety through active streets and the principle of 'eyes on the street' to prevent undesirable activities. She maintained that mixed-use development was essential to support the city's vitality.

iii) Street Life Project

William H. Whyte's findings of his Street Life Project are shown in his book *The Social Life of Small Urban Spaces* (1980). He used direct observation to study behaviour in an urban setting. He described various elements that activate positive street life: seating, food, music, lighting, breeze, plants and water; most importantly, that 'people attract people', since unattractive and uninviting spaces will prevent people from a healthy public life.

It can be seen that these theories mesh to make interesting and safe public spaces and lively cities.

3. Discussion

Public spaces and their use form essential links between people and cities. Local governments or municipal bodies usually regulate urban life through implementation of local regulations. These not only help curb disorder, but also control and enhance the quality of public spaces for citizens. Accessibility, design and regulation of good public spaces can condition the way people perceive and live in their cities. Following is the case-study of three cities which have shown how the presence or absence of regulations have affected their public spaces.

i) New York

As early as 1898, Ar. Ernest Flagg suggested that higher floors of skyscrapers should be setback and occupy only 25% of the plot. This would allow treating all facades architecturally and for light and ventilation. It also prevented dark streets between them. Ar. Ernest Graham's 40-storeyed Equitable Building (1915) cast a 7-acre shadow triggering public outcry. These architectural situations led to adoption of the 1916 Zoning Resolution in New York City, to regulate height, size and arrangement of buildings (Dunlap, 2016). Staggered setbacks for penetration of sunlight and air to the street level. This ensured open public spaces in dense areas. The 1961 Resolution offered incentives in the form of more floor area for inclusion of privately owned public spaces (POPS) in their premises (NYC, 2022).

The forerunner is seen in the Rockefeller Centre (1940) by Ar. R. Hood and the Seagram Building (1958) by Mies van der Rohe. Norms in 1970, based on Whyte's research, included requirements of seating, landscaping, bike racks, drinking fountains which improved active involvement with the public places (Kayden, n.d.).

ii) Varanasi

Varanasi has a history of continuous settlement since 1200 BCE. It has been a significant centre of culture and tradition. The city interacts with the river through 84 stepped ghats and paved platforms, extending over 6 km in length and 15-200 m in width, interspersed with older palatial and newer commercial buildings. Apart from the growing indigenous population, there are a large number of visitors for tourism, pilgrimages or other purposes.

Keywords: city, joy, happiness, breathable, walkable

Sinha (2017) explains how the ghats mediate the city and river against the backdrop of the façade of platforms, balconies and openings. The platforms between the steps offer pause points with shrines and shops, and the steps between street levels or to the water. These become 'behaviour settings' for all the activities that take place here, whether cremations or the evening aarti. The ghats are used for all human activity, ranging from prayers, bathing, performances, shopping, eating, religious rituals, cremations, marriages, festivals or just loitering. This multi-purpose aspect has been able to maintain the social and functional integrity of the built form and influence economic and social life. Though the spatial language has evolved over time, the growing numbers of visitors necessitates change with preservation and conservation of the unique cultural traditions and architectural formations of Varanasi. The Heritage Development Plan (HDP) introduced in 2009 under the Varanasi Development Authority (VDA) envisages the reinforcement of pedestrian environment, façadescape, riverfront and cultural foci. This includes promotion of environment development, pedestrian movement and experience, accessibility, civic facilities, health and hygiene, through the enlistment of active public participation.

iii) Mumbai

Mumbai, grown from the island city of Bombay is the financial capital of India. Bustling, never sleeping, it contributes 6.16% of the total GDP of India. Its municipal rules are tightly controlled and revised from time to time to regulate its booming construction activity. Sadly, its urban 'progress' is manifested through the growing dominance of vehicular facilities and skyscrapers, relegating pedestrian activities to residual spaces- ironic since it has always been the people rather than the authorities who take up the initiative to keep the city public-friendly. Congested with just 1.1 sq.m of open space against the international standard of 11 sq.m per person, the crunch is felt more since nearly half is illegally encroached upon (Biswas, 2013). In addition, the open space is not easily accessible or visually blocked at the unattended boundary with shops or illegal shacks abutting it (Sharma & Mirkar, 2017). Sadly, in Mumbai, many 'public' spaces are synonymous with 'open' spaces like 'maidans' or playing grounds overtaken for playing football and cricket, and therefore inaccessible to the very young or very old who are then seen in gardens. Providing places for public use are mostly taken up by citizens' groups or by private owners. Examples are the waterfront rejuvenation of Carter Road, or the planters and seating on the footpaths outside storefronts or under flyovers, designed by architects, or the seating at the sea's edge. When executed by the municipality, the design is seen to speak for itself when it is shunned by the people. This city, which has always been publicized as having a never-say-die spirit, ironically has hardly any public places characterizing it.

Inferences and Conclusion

The three theories studied here have shown the importance of recognizing and acknowledging people's behaviours and needs in order to create successful, meaningful public places which are visited and revisited and remembered. These concepts are exemplified in the first two case studies of New York and Varanasi. The first example showed successful implementation through trial and error, but under the local authorities, while the second one has shown how this has evolved through tradition and stood the test of time. The third example is an example that shows that even in spite of the lack

of initiative by authorities, the need for public places is nevertheless fulfilled, in some measure, by private players. At all levels, it is seen that there is a definite need for such spaces- outside the homes and places of work, where people need to interact with the outdoors, with each other and the city, in a safe, clean and interesting space that recognizes the human need to connect.

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RE-INTERPRETING KATHMANDU: A TEST CASE FOR THE UPCOMING NEW TOWN

○Ar. Shubhi Goyal*

Abstract

According to United Nations Department of Economic and Social Affairs (UNDESA) 2012, Kathmandu, the capital city of Nepal, is growing at 6.5% per year and accounts for 24% of the total urban population. The unplanned construction of infrastructural networks, ineffective land use and division, coupled with a complete disregard to the local landscape have brought about a number of urban problems- sprawl, water scarcity, urban flooding, disaster vulnerability, loss of heritage, etc. Furthermore, in the pursuit to achieve 'modern development', the city, which was once celebrated for its extraordinary architecture, characterized by a beautiful network of open spaces and streets, exceptional craftsmanship and successful placemaking, is gradually transforming into an environmental nightmare, with large parts representing giant slums. In this light, the concept of New Towns has been introduced in Kathmandu, to reconstruct, expand and build the existing city, and create four new towns in four corners of the Valley with the aim of developing Kathmandu as the main administrative, touristic, cultural and economic hub (New Town report, Volume 1, 2019). The thesis aims to develop a narrative for New Town Eeshan through an assessment of the vulnerabilities of Kathmandu Valley and the evaluation of the proposal put forward by the government authorities. The local knowledge of the ecology of Kathmandu, embedded in the fabric can be reformulated and reinterpreted to adapt to modern day issues and practices for the creation of a robust framework. Thus, taking cues from the historic urban fabric of the city, the thesis investigates the possibility of addressing the urban challenges through the development of a symbiotic mixed use hybrid between the traditional sustainable systems and contemporary ways of living. Through an in-depth analysis of Bhaktapur- a 12th century Malla settlement of Kathmandu Valley, relevant sustainable patterns were identified, and reinterpreted as design concepts. The thesis seeks to suggest an alternate model of urban development, one that is sensitive and cognizant of the context. Furthermore, it is the intention of the thesis to explore how social sustainability can be induced through reinterpretation of traditional construction techniques and local craftsmanship.

ARCHITECTURE AND URBAN POLICY AND DESIGN STRATEGIES - THE IMPACT OF NEWLY ENACTED BUILDING BY-LAWS OF KATHMANDU METROPOLITAN CITY ALLOWING HIGHER FAR AND DENSITY

○ Suraj Khanal

Abstract

Building by-laws is a crucial tool to achieve efficient urban milieu in terms of public health, safety, and accessibility. The by-law prevents congestion and helps to organize the space, infrastructures and services at land and buildings. Previously, building by-laws 2064 BS (2007 AD) was prevailing at Kathmandu Metropolitan City (KMC) and surrounding constituencies at the suburbs in Kathmandu district. The by-laws of KMC was recently updated and enacted in 2075 BS (2018 AD) after experiencing the massive earthquake damages in 2072 BS (2015 AD). The new by-laws unexpectedly encourage more density through vertical expansion in the metropolitan city with significant increase in FAR and building height provision. The effect of newly revised building by-laws of KMC, in terms of Floor Area Ratio (FAR) and building height, will make substantial impact to the urban fabric of the metropolitan and risk of hazards.

ENRICHING PEDESTRIAN EXPERIENCE IN THE SOCIO-CULTURAL AND ENVIRONMENTAL LANDSCAPE OF THE KATHMANDU VALLEY

○Rashmi Gautam*

Abstract

The rich socio-cultural context, unique architectural backdrop and urban fabric of Kathmandu valley provides an opportunity to birth an exceptional pedestrian experience. Although Kathmandu, like many cities around the world, is falling victim to the phenomenon of loss of identity due to uncontrolled urbanization, its essence as a largely pedestrian city of the past can be restored consciously through design and urban planning interventions.

Encroachment of public land meant for pedestrian space and bus stops by vendors and peddlers has been one of the major causes of degradation of pedestrian experience in the valley. However, the readjustment of urban fabric to accommodate a rich streetscape must integrate microcosms of the street vendors and creative human experience that has now been displaced due to the recent demolition of structures in encroached public land and removal of street vendors.

A vibrant street-scape can only result from diversity and accessibility in the urban fabric which used to be the identity of the valley even in the past. Such interventions can be seen in the Indian streets of Ahmedabad where street is reinterpreted as a marketplace, time-sharing of space in Bhopal's Sunday markets, or in Canadas' Promenade Wellington, named coolest street in the world, a vibrant 1.3-km strip that is pedestrian-only from June to mid-September and home to over 250 businesses. Durbar squares and rustic alleys of the valley itself, is an example of an all-inclusive, outstanding street experience which has become the hallmark of Asian streetscape and economy.

Through case studies of such interventions in the various parts of the world, and of Kathmandu valley itself, this paper shares a possibility where the rich pedestrian experience is possible with conscious assimilation of the marginalized groups in design decisions.

1. Introduction

Identity

Identity is an indispensable fact of being, the qualities, beliefs, traits, appearance, expression, and other realities surrounding an entity. It is the basic object of perception through which entities mark their existence in the universe in relation to time and space. Identity has also been acknowledged as one of the most essential goals in realizing a sustainable environment.

Among various definitions of identities made under variety of disciplines, Kevin Lynch, author of the book "The Image of the City", defines identity as "A workable image requires that the identification of an object, which implies its distinction from other things, its recognition as a separable entity". Identity is a "characteristic combining uniqueness, dissonance and mystery." "Identity is a reflection of society's culture, happiness and time of residence, therefore, from large scale to small scale; city, place and space have to be sustained. People can feel that components of the environment are belong to them from individual and selective point of view."

-Oktay Ekinici

Oktay also defines Identity as "the individual character of a place or a person and it is one of the most important aims to create a successful environment. Furthermore, it is a uniqueness which defines something different from others and is related to settlement of society not to individuals"

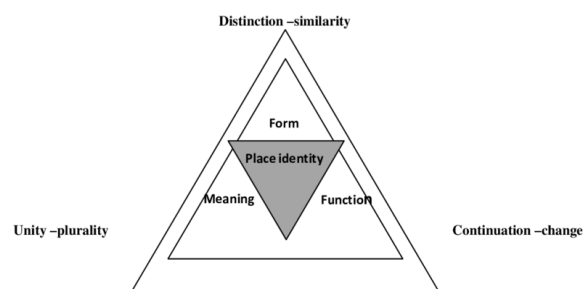
Rappaport has classified identities into different types, which are:

1. Private Identity that emphasizes the identity of personal and intimate group
2. Public Identity that emphasizes the identity to another by making differences between us and them

Place Identity

A place identity derives from the concept that a space constitutes of a very distinct identity, not very different from an individual's, with strong characteristics, complete with physical and social features. The effect of place identity is evident in the physical basis and spirit of a society at a given time. More than anything else, it is a psychological investment that is built with living or associating with a place over a period of time such that the lives and processes in that place becomes one with an individual's life. It consists of feelings, meanings, experience, memories and activities that are combination of personal experiences lived as an individual as well as collective experience as a society.

Place identity is derived from physical characteristics of a place, along with social, political cultural and economic parameters such that some specific places have clear perceptual identity through their recognizable, alive, attractive and memorable traits as compared to other places. These are the objective basis of perception whereas there are also feeling factor, as recognized by Hugh, who states that "feeling" is the basic factor which makes for a comprehensible space and can be recognized through an individual's senses such as sounds, smells, sights and touch.



Constituent Elements of Place Identity © Vahideh Hodjati

Keywords: Identity, Urban Fabric, Pedestrian Experience, Encroachment, Marginalized Groups, Diversity, Accessibility, Urban Economy.

Setting of place identity has been classified by Meiss as:

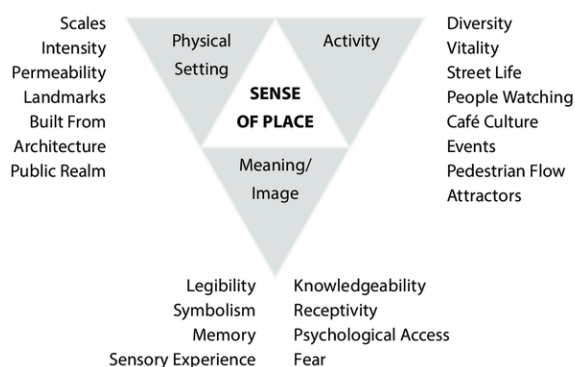
1. "Identity as Human being, Homo sapiens, who are distinct from the physical, mineral, vegetable and animal world.
2. Identity as a member of a group with which one shares and discusses values: The family, political party, club and etc.
3. Identity as an individual who maintains a margin of liberty and personal responsibility, distinct from the group and from all others; each person is unique."

Identity of a City

City identity is a distinct form of collective identity, in a sense that it is based on the perceived uniqueness and meanings of place which is gradually and organically constructed over time through architecture layered upon the socio-cultural lives lived on the said city.

Cities around the world are formed as an expression of material, social, spiritual and political realities of a place. With each place having its own unique and unrepeatable phenomenon, each city turns out as unique entities, in some regard or the other. Each city has its origin, its primitive roots that always has an imprint in the city, centuries or millenniums later. Along with it, a city also has its temporal association, the contemporary reality of a place that is an outcome of the present day realities and processes. Thus, the identity of a city, in its entirety, is the result an amalgamation of temporal and primitive associations of a given place.

Cities are always in the state of flux, their physical, socio-cultural, spiritual and material realities changing along with the flow of time. Intertwined with the identity of a city, is the lives and values of the individuals inhabiting the city that represents the soul of the time. With the change in these values and circumstances, cities are continuously changing, their identities metamorphosing simultaneously. A city is a cumulative reality in space and time, with layers of accumulated loops of changes and processes that it housed at some point or another. Understanding these layers and their relationship to each other is imperative in understanding a city in its full glory and in comprehending its identity.



Three Components of Place Identity (modified from Montgomery, 1998) © Yi-Wen Wang

The identity of a city starts to dissociate from reality when the organic process of layering is replaced by abolishment or erasing of the previous layer instead of adding on to it, or enriching it. The identity of a city is also adversely affected when the temporal issues of a city are met with distorted solutions which prevail, and result in loss of city characteristics and spatial structure. Only when the solutions to issues arising in cities are met with solutions

relevant and unique to the city's own identity, the authentic expression of the city continues to live on. Monotonous standards imposed by modernism are also one of the leading cause of loss of identity of cities of present that takes away the ability of a city to uniquely express itself as a function of socio-cultural lives, activities and realities of the place.

City Identity through Architecture

"Architecture is, after all, a representational art—an art of portraiture, if you will—and what is portrayed in it is precisely the multiform structure of desired relationships between human beings, their institutions, and their natural world."

—Henry Cobb, An Architect

"The question is not whether architecture constructs identities and stabilizes meanings, but how and in whose interests."

—Kim Dovey, *Becoming Places* (2010: 45)

Image of any city is not just a function of physical or visual element, but of mental analysis of the components that reflects the way a city is accessed and life is lived and experienced in a city. City identity is constructed over time and consists of collectively shared perceptions about a city's sustained "character" or "ethos" (Bell & de-Shalit, 2011), which architectural theorists call *genius loci*—the distinctive spirit of a place (Norberg-Schultz, 1970).

According to Ravelli & McMurti (2016), "A city's identity, constructed and communicated through its architecture, is comprised of three sign systems—material, visual and rhetorical—interacting to define in what ways a city may be distinctive and how its meanings have evolved over time. We separate these sign systems for analytical clarity, but the built environment is multimodal"

A city's identity is captured and encoded in city through known and unknown architects through architecture, design and planning, through the process of which, the experiences of a city is allowed to be shared and made historically recognizable in form of the built environment. If a building or an infrastructure seem out of place in a city, it is because they do not sync with the pre-existing vocabulary associated with the identity of that city. The history, collective experiences, conventions, socio-cultural understandings of the inhabitants of a city is captured in forms of architectural styles which, in a way, defines the soul of the era.

These architectural styles enhance a city's legibility and authenticity. They make cities readable and allows them to be recognized and organized in forms of coherent patterns. With these readily recognizable affinities in the style, the boundaries of cities are defined such that a movement through cities is experiential. This is one of the greatest markers of a city's identity granted by architecture.

2. A Street's Role in Creating City Identity

Cliff Moughtin, author of the book "Urban Design: Street and Square", defines street as "an enclosed, three-dimensional space between two lines of adjacent buildings, it is not only a means of access but also an arena for social expression". Street has been defined by various urban theorists and scholars as an outdoor space or an exterior space that forms a linked network between different areas. As true as it might be, it is an incomplete understanding of what street stands for in an urban fabric. Street is a point which allows a look into a city and acts as a social life that offers a function to their users in forms of communication, shopping, working, relaxing and being involved in recreational activities .



Street of Khokana with its Distinct Characteristics of a traditional Newari Settlement © Manfred Sommer

A Street not just a medium of transit, accessibility and movement, but an all-encompassing hub of socio-cultural, political and economic life with experiential qualities as well as economical sustainability value. Street allows for creation of a walkable space and is a major indicator of a city's place identity. One of the five public open space categorized by Carr, i.e. Street, Square or Plaza, Parks, Playgrounds and Recreational Area and Water front, Street remains one of the most essential due to its versatility as a public open space, that houses function of movement and of repose. It has a role in opening up public spaces and connecting the urban fabric with the built environment of a place. With a responsibility of facilitating "movement" and "repose", street in the contemporary city acts as a multi-functional stage that houses variety of individual and socio-cultural day-to-day life and activities. A Street's distinct identity which makes it stand out from the rest, is expressed in forms of environmental and social identity.



The Unmistakable Identity of Kathmandu's Streets © the common wanderer

In Kathmandu valley, this role of street is even more prominent with its street being a throbbing being with all its socio-cultural and political activities intricately interwoven into the overall landscape of the valley. Streets in Kathmandu valley are a place of travel, of wonder, of rediscovery, of spirituality, commerce, political movements, *jatras* and processions, communal activities and celebrations and of a life as complex and diverse as the reality of Nepal itself.

3. Looking Back at the Streets of Kathmandu Valley

The urban streets in the historic core of the Kathmandu valley were developed before the advent of automobiles. These streets were communal spaces, of not just connectivity between various other communal spaces, but also a space where variety of social, religious and political activities were realized. The surrounding peripheral streets and neighborhoods were the residual spaces and some part of it were planned for special sites and services through

land pooling and comprehensive housing schemes. The social fabric consisted of two basic elements: blocks of closely built three to four story houses around a courtyard and a network or narrow non-axial streets and pedestrian lanes, in composition with public squares and courtyards, forming the figure and ground. The street was framed through socio-economic hierarchies of castes and professions which was also evident in form of hierarchy based on religious functions.



Kathmandu Durbar Square of the Past, a Thriving Hub of Street Life [Gustav le Bon, 1885 A.D.] © Digital Archaeology Foundation

The regulation of height, building material, and hierarchy in spaces result in the creation of a singular composition with harmony in building volume, height, roofline and thus strengthening the unity in street scenes. These streets, were in comparison to the height of the building, in human scale and created a sense of enclosure. These streets were also laded with elements of surprise, mystery and anticipation, with squares and courtyards shrouded within the streets.

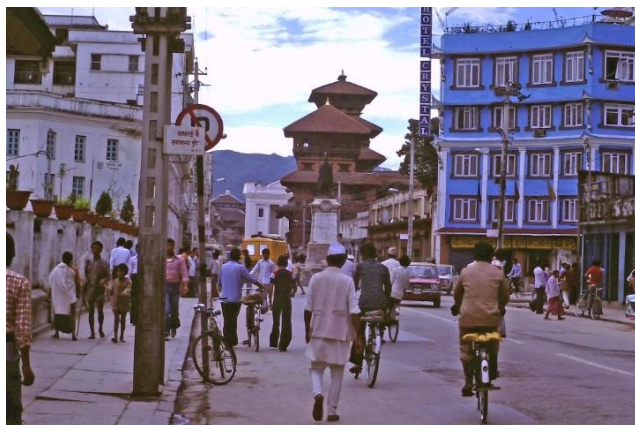


Street in front of Gaddhi Baithak during Indra jatra during 1900s showing the ceremonial function of a Street



Street Vendors at Basantapur near Singha Sattal © Leo1383

The streets of the Kathmandu valley were completely pedestrian, streets functioning as market-places, streets connecting individual and community houses, bahas and bahis, streets functioning as routes for jattras and processions, as a binding thread amongst the social and spatial structure. They were great livable streets, where life happened, where cultures flourished and they were the reflection of day to day lives of the people. Children would be playing at one end of the street, while the mothers would be drying grains, or washing clothes in another. The older men would be socializing a cup of tea and re-telling the anecdotes that they inherited from their fathers. The streets were complete with performing platforms, like Dabalais, with squares that flowed between the houses creating outdoor rooms.



New Road in September 19, 1978 © Polyrus

The streets were reflection of the socio-cultural ethos of the time, with the spirit of hospitality reflected through the Patis and Pauwas, the rest stops and public water taps, at regular intervals. They were welcoming and warm, full of stories and expressions. The streets would echo in the hymns and prayers sung in the Patis. The streets were not just socio-culturally efficient, but also sustainable and in tune with the concept of passive design techniques. The orientation, location and resource distribution were paid a great attention in designing of these streets. These streets, though simple and easy to navigate offered element of surprise every now and then to break the monotony and the laws of defensible space were employed. These streets were protected with deities and gods, in various forms of decorations and ornamentations, and their names paid homage to the background of the localities, and always came with a story of its own. The identity of the medieval Kathmandu valley was thus closely linked with the street of the time.

4. Streets of the Valley Today: A Crime against the City

A look into the Street typologies of Kathmandu allows one to recognize diversity from the lively pedestrian-friendly streets of the Malla period to the Europe-inspired unique streetscape of the Rana Period to the haphazardly developed Automobile-oriented streets of today. Somewhere along the line, we have lost the vibrant, people oriented streets that housed multi-faceted everyday urban activities metamorphosed into the dead roads of today that are driven by economics of time. The street design of today is a crime against the city of Kathmandu that sticks out like a sore thumb in the socio-political and spatial structure of the Kathmandu valley that had been in tune with people and community life centric design. The streets are lodged with automobile traffic, with the pedestrian movement limited to tiny corners and in discontinuous patterns. Pedestrian movement, which used to be the primary mode of movement and access has been under looked so much so that the vehicles have taken up much of the space that used to be a thriving urban hub of people.



Crime Against the City, Street In Thamel with unmanaged vehicular and pedestrian movement and the streetscape dominated by Billboards and Electricity Wires © CamelKW

High walls surrounding the streetscape, vertical rising of buildings causing in loss of human scale, and haphazard urbanization has resulted in loss of character of streetscape in the valley. Encroachment by individual house and commercial units, and by ever expanding motor ways are taking away from the valley the invaluable experience of sharing a life of community, a life that is connected to our roots. The density of the valley has grown in unprecedented rate and the street to building height ratio has been abandoned to house the population that has now entered the valley. The volumetric and form uniformity as well as the unity of street scene has been compromised with newer forms, technologies, building materials and innovations brought in without proper study and analysis. The streets have become chaotic, difficult to enjoy, with services either absent or haphazardly placed, unfriendly and hostile. A sense of place and belonging that had remained the identity of the valley has now been compromised.



Mixing of Pedestrian Side-walks with Informal Commerce and Vehicular Crowd in the Street of Kathmandu © Jerden Swolfs

While the spiritual, religious and symbolic essence of the streets have been long forgotten and buried behind the facades of commercialization and development on one hand, the safety of the pedestrians has also been duly compromised. The streetscape is dominated by large billboards and massive power lines, the remains of pedestrian footpath flooding with storm water during monsoon, and bicycles and two wheelers mingling with the pedestrians. In addition to it, the informal commerce is taking over with street hawkers and vendors, taking up majority of pedestrian sidewalks. The waste management has become quite difficult to ignore, along with presence of abandoned animals and pets mingling with the mob. Many historic courtyards and chowks are used for parking and the water and the patis and rest stops are being encroached.



Pedestrian Experience Overlooked in Automobile-Oriented Street Design © Manish Paudel

Despite this vulgar encroachment of the city's identity through the haphazard urbanization, even today, the streets of the valley serve multiple purposes, as markets, as the hub for service and good exchange, place for movement of people and goods, and also for stations of public utilities. They are social, symbolic, ceremonial, cultural, spiritual and economic centers. They remain as spaces for public gathering, rallies and protests, celebrations and processions, micro and macro economy and of interconnectedness. This is the enduring identity of Valley and its streets that are so intricately intertwined that even decades of haphazard urbanization, commercialization and westernization couldn't take apart.

5. Streets Done Right, Examples around the World

Streets of Ahmedabad

Declared India's first 'World Heritage City' in 2017, Ahmedabad is a city that has evolved over the course of 600 years. Despite the technological advancement and westernization that has taken over the world, Ahmedabad remains a city where the imprints of the generations of culture and life speaks loudly for itself. The streets of Ahmedabad is reminiscent of the city's identity as a world heritage city, the narrow meandering alleys, shaded with the cantilevered buildings surrounding them. The streetscape consists of the uniformly treated elevations consisting of intricately carved wooden details on facades, accentuated with frescoes and colorful exteriors, resulted from the practicality of survival from wars and climatic hazards.



The Mix-Use Street of City of Ahmedabad © iDiscover

The streets of Ahmedabad is where the exchange of goods and services is done in the form of street foods and shopping. The street-scape covered in delicately designed textiles that are inherited back from the year 1861 when the first textile mill was started in India. Vibrant colors, textures and designs not just act as a feast to the eyes but also mark celebratory and seasonal

changes in the community. Besides shopping, the streets are alive with aroma of traditional Gujarati food. With streets and footpaths modified to house temporary, semi-permanent and permanent stalls and seating. One such phenomenon where Streets of Ahmedabad comes alive is food Truck Park where people socialize over mouth-watering Gujarati and fusion dishes.

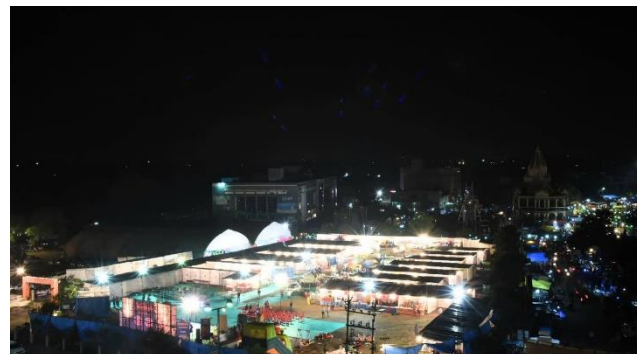


The Street Identity in Ahmedabad © iDiscover

A hub for small scale industries and shops that are available 24/7, the street carry enduring tales of multi-cultural social fabric of the city. With architecture influenced from symbolism and tales of multiple cultures, like the Maratha culture, the Persian and the Mughal culture, as well as the Baroque style of architecture and Indo-Chinese influence, a unique Street scene is at play. Full of element of surprises and mixing of people from multi-cultural background, the tale of the city of Ahmadabad echoes in its streets and is heard by the pedestrians incessantly through their movement which defines the identity of the city of Ahmadabad itself

Bhopal's Street Markets

The time-sharing of space is an emerging innovation in urban design that allows for a multi-functional identity of a city to flourish. Such examples can be seen in the rotating markets of Bhopal such as Bitten Market and Sunday Market. The Bitten Market operates on Tuesdays, Thursdays and Saturdays on what is usually a playground and a park. With related services provided by the municipal body of Bhopal, along with seating on raised platforms and temporary shades by vendors, the informal commerce gets to be flourished without obstructing the regular pedestrian movement in the already congested streets of Bhopal. With minimal charge paid to the Bhopal Municipal Corporation, the playground is modified to a Street Market where the vending areas are demarcated from the footpaths with the use of different colored paving, without actual changes in levels.



Bitten Market, Bhopal, an Example of Time-Sharing of Space © Alok Mandavane

The Sunday Market comes into play on Sundays when the roads are pedestrianized. With minimal payment to the BMC, farmers and sellers can operate the Street Market in the demarcated zone, in order to operate which electricity is provided to them through generators and since there is no allocation of spaces amongst the vendors, an organic informal arrangement of vendors comes into play. In order to facilitate these market activities, paid parking are made available in the vicinity of the Sunday Market.

Such rotating street markets, through the time sharing of space, introduce newer interpretation of street life in urban landscape that allows fostering of informal commerce that has been the backbone of economy of certain class of people in the cities for generations. In the light of recent events in the Kathmandu valley, where street vendors have been completely uprooted in order to better the pedestrian experience, these case studies become imperative to understand how it is important to incorporate the concern for each class using a street in redesigning or readjustment of a city.

Canada's Promenade Wellington

Named the "Coolest Street in the World" by TimeOut through a survey of 20,000 urbanites, Promenade Wellington of Montréal, Canada offers one of the most human yet unique pedestrian experience. The promenade is named after the Duke of Wellington and is referred to as "ma well" lovingly by the locals. The street is known for its food, culture, community-based design and the fun activities surrounding the street. Connecting the grand avenues and shopping strips, the promenade is a living entity with throbbing independent businesses, creativity and a microcosm of its own. The pedestrianized backstreets lead up to the squares and these alleys are complete with Montreal's best restaurants, bars, coffee shops and family friendly spots.



The Coolest Street in the World, Promenade Wellington, Montreal Canada © Caroling Perron

The Verdun neighborhood or "Wellington" evolves throughout the seasons, with the street being completely pedestrianized from June to mid-September. The bustling streets provides a wanderer with a chance to celebrate the Giant Puppet Festival in the summer and Maple Syrup Fest in the spring. The ambience of the street is accentuated by street music performances, and the fresh aromas from the local food shops. The street is the heart of the economy of the Verdun borough and is accessible through metro stations and bike lanes to the downtown Montreal.



Multi-functionality of a Street in Promenade Wellington © Caroling Perron

The street is alive with various cultural events throughout the year and the streetscape marks the evolving nature of a city throughout the day. People on their morning jog and a rush to coffee shop fill the streets in the morning, while in the evenings, evening dancing leaves the street feeling juvenile and full of life. The street also acts as a facilitator for outdoor group classes, open-air sidewalk sales and festivities.

Conclusions and Recommendations

Great walkable streets have inherent qualities like accessibility, community life, multi-functionality, safety, participatory, inclusive, comfort, and blurring of boundaries with built spaces, connectivity, to name a few. These very features have resulted in some of the most liveable and identifiable cities in the world, including the Kathmandu Valley in the past. Some of the well-loved cities around the world have these very qualities in common with each other despite having their unique way of manifesting in the socio-cultural context of the place. A Street has a name, a story, a political and social significance and it is welcoming and easy to navigate. A Street should hold a life and its processes, and related services and facilities as well.



*Typical Street Life in Kathmandu Valley in 2008 © EpiVin
Typical Street Life in Kathmandu Valley in 2008 © EpiVin*

A city is experienced through its streets. Through design of pedestrian and people-oriented streets, that is in tune with the lives of people, socio-cultural and historical symbolism of the place, a city preserves its contemporary identity. A Street of a city represents the social structure of a place and of the values of people that inhabit there and their shared common lives. They are entities of ceremonial and celebratory significance, a place of children's play, and of exploration that encourages socialization and togetherness. The streets of contemporary city of the Kathmandu Valley need to be enriched in pedestrian experience by shifting the focus from the automobiles and vehicles to the walkers, by narrowing the vehicular movement zones and widening pedestrian area, adding rest stops, water spouts and chautaries, that are so engrained in our cultural landscape, and incorporation of everyday activities like playing socializing, celebrating, sun-bathing, etc. in the streets. Following design and policy making can be employed to achieve the goal of associating a contemporary city's identity with its pedestrian experience in the valley:

- a. Developing streets with pedestrian centric design decisions
- b. Preserving the authentic architectural expression of the buildings and urban spaces of the core cities.
- c. Regulation of height, building material and facade treatment in the buildings surrounding important streets
- d. Promotion of Street based celebrations and festivities
- e. Priority should be given to socialization and celebration of everyday life in streets.
- f. A Street should facilitate a healthy exchange of goods and services without compromising the pedestrian movement and accessibility
- g. Inclusivity and accessibility in the heart of the street design
- h. Proper demarcation of pedestrian crowd, vehicular movement and service zones
- i. Proper demarcation of zone of movement and zone of repose
- j. Allowing a planned space for informal commerce in the form of street hawkers and vendors
- k. Incorporation of greenery in the street design
- l. Making pedestrian experience safer through proper traffic management, traffic signals, crosswalks, and pedestrian bridges
- m. Connection of the street with the major surrounding public spaces and open urban spaces like squares and parks.

Proper management of bus stops and stations that doesn't disrupt fluid movement in the pedestrian zones.

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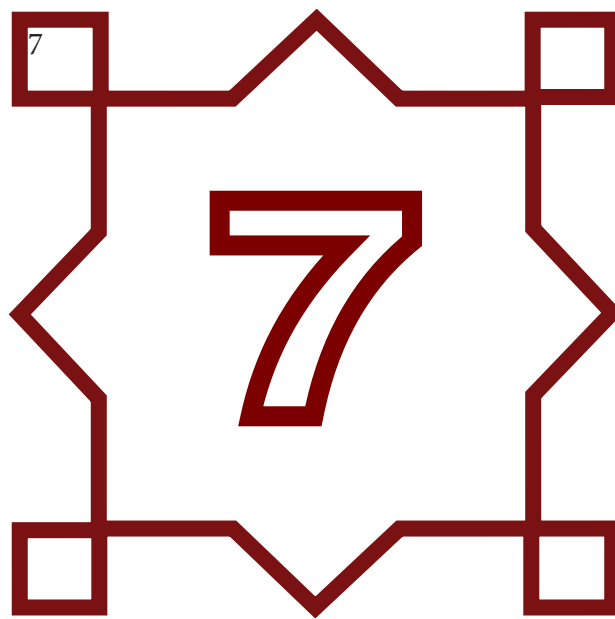
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THE ROLE OF ARCHITECTURE IN THE CREATION OF THE IDENTITY OF CONTEMPORARY CITY

○ Gyanendra Devkota

Abstract

This paper deals with the change in built form of the Nepalese Architecture with the history. It travels from the compact built form of the Malla period to the scattered or leapfrogging development. Comparatively, the mixed-use concept and uniformity in design gave the traditional urban form its well-defined identity verses the elemental development in current period of time. A case study of couple of elements which changes according to the time frame and retains the originality of the place centered identity. A case study of Residential buildings established around courtyards gave people a common space for interaction, which enhanced the strong feeling of unity within the community in history. Currently it is the individual different size plots or horizon of the building outlines. This paper deals with the change in built form of the Nepalese Architecture with the history. It travels from the compact built form of the Malla period to the scattered or leapfrogging development. Comparatively, the mixed-use concept and uniformity in design gave the traditional urban form its well-defined identity verses the elemental development in current period of time. A case study of couple of elements which changes according to the time frame and retains the originality of the place centered identity. A case study of Residential buildings established around courtyards gave people a common space for interaction, which enhanced the strong feeling of unity within the community in history. Currently it is the individual different size plots or horizon of the building outlines. This paper tries to capture some elements in residential buildings from the history to the contemporary time period which could indicate some identity of the place.



POSTER PRESENTATIONS

01

The Role of Architectural Landmarks in Enhancing the City Identity of Pokhara as a Tourist City

Submitted By: Luna Thapa, Samikshya Kandel

The Role of Architectural Landmarks in Enhancing the City Identity of Pokhara as a Tourist City

o Luna Thapa, Samikshya Kandel
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INTRODUCTION

City identity– the essence of the city /sense of belonging, evident in social and cultural values, city characteristics

Architectural landmarks–characterized by uniqueness in terms of structure, specification, and artistry

Tourist city– by creating an identity, the city can compete with other cities for resources, investment, and tourists

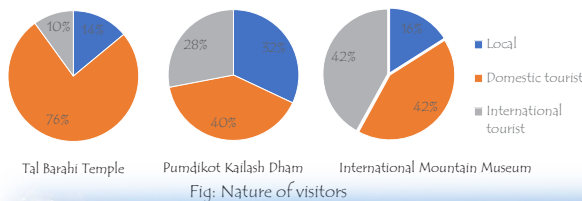
Pokhara– Tourism Capital, natural beauty with many architectural landmarks

OBJECTIVES

- Identify features of selected architectural landmark
- Ascertain visitors Perception about the role of landmarks
- Find role of architectural landmark in city identity

RESULTS & DISCUSSION

Description	Tal Barahi Temple	Pumdikot Kailash Dham	International Mountain Museum
Goals & Objective	Religious tourist attraction	Promote religious tourism	Knowledge-based tourism
Unique features	Temple on the island	Tallest sitting statue of lord Shiva	Designed mountain museum building
Visitor (Avg/day)	3000	3000	1000
Special events	Kojagrat Purnima, New Year	Shivaratri, Shrawan, Teej, Visitors	International Mountain Day, Mountain festival
Plans and programs	Temple reconstruction	Introduce new activities & spaces	Introduce new activities



Literature Review
City Identity, Architectural Landmark, Tourist City, Pokhara tourism

METHODS

Problem Identification
(Threat of loss of city identity, Declining quality tourist, shortening tourist season)

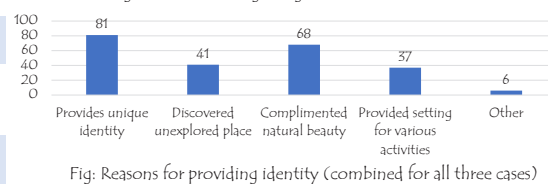
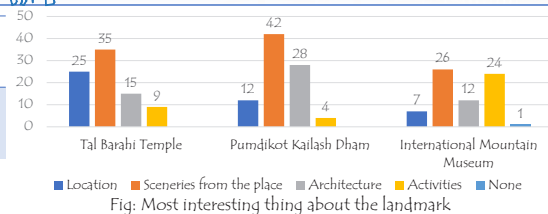
Research Objectives
Identifying roles of architectural landmarks in Pokhara's city identity

Analysis

Quantitative (respondent view)/Qualitative (features)

Data collection
Primary-Questionnaire, Interviews, observation/Secondary-Literature

Results, Discussion & Conclusion
Role- unique identity, compliment natural beauty, explore places, settings for activities



CONCLUSION

The role of architectural landmarks in city identity is evident in all three cases.

Main roles in identity are; Providing a unique identity, Complimenting natural beauty, Discovering unexplored places, Providing the setting for various activities

Future works on more diverse cases & with more sample size is recommended



ARCHITECTURE AND URBAN IDENTITY : TRANSFORMATION OF DUBAI

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In fast growing cities like Dubai, the issue of urban identity and its implications are complex and multidimensional.

URBAN IDENTITY is an impression solicited by the environmental, historical, socio-cultural and spatial values on its inhabitants. Identity of cities is acquired with their original characters passed from the history. People were able to maintain a strong identity in their urban environment as everything was created locally according to the needs. But today, the world has become a small place due to globalization. With this, cities are losing their original architectural characters. Thus, the settlement fall into a **CONFUSION OF IDENTITY**.

General HISTORICAL PROCESS that shape the architectural and urban identity of Dubai



Figure 4 Dubai Market in 1833



Figure 5 Windtowers in Dubai



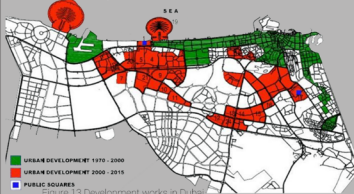
Figure 6 Windtowers in Dubai



Figure 7 Hatta Village

Dubai became a sovereign seikdom for the first time in 1833 when roughly 800 people from Al Bu Falasa branch relocated from Abu Dhabi. Dubai was merely a fishing town until 1833. Once the oil was discovered, Dubai's growth was hastened. First roads were constructed in the early 1960s and the travel by donkey and camel quickly decreased. Dubai evolved into a regional hub and focal point for numerous international corporations and major expansion took place between 1974 and 1978. Social, cultural and infrastructural requirements increased as well. There is no specific information available regarding the past settlements.

Search of Identity via Conservation, Rehabilitation and Sustainability



First master plan by John Harris Consultants in 1959- did not list the traditional districts as a priority - Urban growth between 1960 and 1970 - Destruction of historical structures- Bastakia and Deira's traditional dwellings were abandoned - sparked an identity crisis - government began to realize this irreversible loss needed to be stopped - Master plan was again reviewed - Dubai municipality began to initiate a preservation initiative for the few historical structures that were still standing in the early 1980s.

So what urban identity REQUIRES?

While it would be foolish to dismantle the "expatriate" high rise structures, efforts should be made to integrate them into natural landscape. **Dubai 2040 master plan aims at :**



Five major zones
- Development of Deira and Bur Dubai as historic areas that highlight the emirate's tradition and heritage.

Beaches, parks and sustainability
- Increase the green areas making wildlife sanctuaries and natural areas up to 60 percent

Hatta development plan
- seeks to develop and raise the natural and tourism attractions, protect its environment.

Maintaining Urban Identity is not a copy-paste thing from what has already been done; it calls for **reassessing, innovating and changing** development objectives. **Without dignity, identity is gone...**



Figure 1 Location of Dubai within UAE

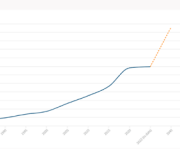


Figure 2 Dubai population

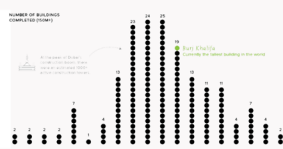


Figure 3 High-rise Development in Dubai



Pearl Fishing



Oil Industry



Trade



Tourism

Earthy raw materials served availability and temperature preservation purposes. High defensive walls preserved the utopian palm trees plantation, narrow alleyways made the hot breezes of wind cool down, Calligraphy, Vegetal patterns, floral motifs, Geometric patterns, Figural representation, wind towers as a square addition that served as ventilation well as lending Dubai's skyline a distinctive personality.



Figure 7 Hatta Village



Figure 8 Sheikh Saïed Al Maktoum house

Metamorphosis leading to the SEARCH OF IDENTITY...

From the outside, Dubai looks like an unmitigated success story but the shiny, glass towers do not reflect any unique character. When visiting Dubai it is hardly possible to say that we are in an Arabic Islamic megacity that shows physical incarnation of the principles of Islam. The city has 190 skyscrapers, trailing only New York and Hong Kong. Instead of Urban regeneration, the emphasis was on the physical and aesthetic features. Cultural values and regional climatic conditions are not taken into account. Despite the bustling highway and the numerous buildings that crowd the landscape, there are few - if any - people walking around during the day time. Construction in the shore area has affected the ecological environment.

A case of AL BASTAKIA CONSERVATION PROJECT

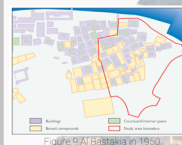


Figure 9 Bastakia in 1950

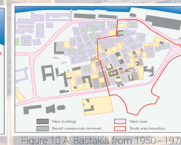


Figure 10 Bastakia from 1950-1970



Figure 11 Al Bastakia in 1994



Figure 12 Type of existing buildings

Al Bastakia suffered a significant decrease as contemporary Dubai grew and developed to accommodate expanding trade and a rising immigrant population. In 1994 Dubai municipality decided to prepare a conservation plan for this area. Historical building section began carrying out the restoration work phase wise.

DYNAMICS of urban identity of Dubai

Built in 1787, Al Fahidi fort gave distinctive characteristics to the city. High walls to keep heat out, small windows, a small decorative pool in the courtyard and a tight passageway to stop hot air moving.

In 1966, offshore field of Fateh was discovered, 120 km due east of Dubai. Extraction operation began in 1969 and in the 1970s, three submarine tanks completed. Jebel Ali Port, world's largest man-made harbour opened in 1979.

Substantial financial capital provided by oil exports marked the beginning of a new era. Dubai World Trade Center, built in 1979, tried something novel and deviate from all the traditional building practices; gave Dubai a new skyline.

More skyscrapers started to appear on the skyline between 1979-1996. In 1997, Jumeirah Beach Resort project started consisting of Jumeirah Beach Hotel and the Burj al-Arab - corresponding with the "new millennium" order.

Construction of Palm Jumeirah started in 2001; a man-made island on the coastline region composed of reclaimed land, consisted of road and monorail access to the mainland. In 2005, The "City of Gold" opens the first commodity derivatives exchange.

In 2008, Dubai Mall sets a world record for the largest mall by total area of 5.4 million sq ft. 828 meters high, Burj Khalifa built in 2010 created Dubai's identity as "City in the sky"; tower's apex can be seen for upto 95km; a symbol of Dubai's

Creating a magnificent twist in the architecture, a 90-degree helix tower known as Cayan tower or Infinity tower was built in 2013; demonstrated that a skyscraper need not be built in a straight line.

In 2013, the UAE becomes the first nation in the Middle East to win a bid to host a World Expo; 438-hectare site in Dubai South - earmarked for the six-month global culture - anticipating 25 million visitors.

In 2014, Dubai's principal airport overtakes London Heathrow becoming the busiest airport in the world; serve more than 100 airlines, 240 destinations and a projected 90 million passengers in 2018.

Mohammed Bin Rashid Space Center established in 2014 merges with the Emirates Institute for Advanced Science and Technology, expanding the UAE's space operations.

The Museum of the Future opened in 2022 opens a new path away from the highrise towers that dominated skyline; an unique facade with stainless steel composite panel adorned with arabic calligraphy.

The Dubai Ain - is the highest and biggest of its kind. The project was given the name 'Ain' which is Arabic for eye, because it offers tourists a bird's eye perspective of Dubai's cityscape.

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7.Kocamustafapaşa Hill

The hill is closer to the Sea of Marmara. It starts in the Aksaray area and extends to the Theodosian Walls and the Sea of Marmara. The **Haseki Camii** is the main attraction on the hill and was constructed for Hürrem Sultan, the beloved wife of **Sultan Süleyman the Magnificent**.

The highest hills at 60Mts above Sea level, housing one of the most elegant **Süleymaniye Camii** (Mosque) commissioned by **Sultan Süleyman the Magnificent** and designed by the architect **Mimar Sinan** in 16th Century. It was one of the largest mosque in Istanbul.

The highest peak of the Historical Peninsula, where the **Mihirahm Sultan Camii** (Mosque) was commissioned by **Mihirahm Sultan**, the daughter of **Sultan Süleyman the Magnificent**, and designed by the architect **Mimar Sinan** in 16th Century.

3.Beyazıt Hill

6.Édirnekapi Hill

2.Çemberlitaş Hill

This hill is approximately 10Mts higher than Sarayburnu Hill. Column of Constantine was constructed by Emperor Constantine in 330 AD.

Nuruosmaniye Külliye which acts as a culture, religion and education center for the neighbourhood housed the first Imperial mosque that integrated neoclassical elements yet retained the Ottoman style adjoining the Grand Bazaar.

4.Fatih Hill

The first monumental structure **Fatih Camii** was built by **Sultan Mehmed II, the Conqueror** after conquering Constantinople. Damaged in the earthquake, the mosque was rebuilt in the 18th Century.

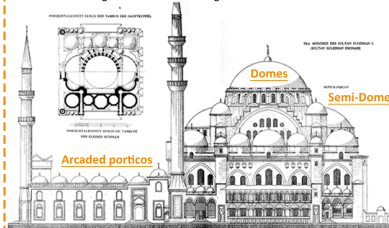
5.Yavuz Selim Hill

The hill slopes towards Golden Horn. **Yavuz Selim Hill** includes the modest and elegant **Yavuz Sultan Selim Mosque** where **Yavuz Sultan Selim's** tomb is located in its garden, displaying the architecture of pre-conquest Ottoman mosques.

2. DISTINCTIVE FEATURES OF OTTOMAN IMPERIAL ARCHITECTURE

The Ottomans used to build Külliye or Complex, which is a cultural, religion, and educational centre. The complex consists of hospital, madrasa, kitchens, and other buildings centred along the Camii (Mosque) built for the community.

The Camii exhibits and dominates the complex, with its distinctive style of Elegant pencil-shaped Minarets, large Dome and adjacent semi-domes, and half domes. Central courtyard with Arcaded portico. And beautiful pointed arch windows which allows the light to enter the building.



Drawings of Süleymaniye Camii

Image Source: Cornelius Gurlitt

Minarets

Elegant pencil-shaped minarets, which are often fluted and end in a lead-covered, elongated conical cap.



Nuruosmaniye Camii



Image Source: A.Savin



4.Fatih Hill - Fatih Camii



5.Yavuz Selim Hill - Yavuz Sultan Selim Camii

Image Source: VikiPicture



6.Édirnekapi Hill - Mihirahm Sultan Camii



7.Kocamustafapaşa Hill - Haseki Camii

Image Source: Dosseman

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List and proximity of tangible heritage monuments in the SultanAhmet Precinct:

1. Topkapı Palace with the fort wall
2. Ayasofya Camii
3. Hürrem Sultan Hamamı
4. SultanAhmet Camii
5. Museum of Turkish and Islamic Arts
6. Basilica Cistern
7. Sultan I.Ahmed Türbesi
8. German Fountain
9. Orme Dikilitaş
10. Gülhane Park



Image Source: Richa Raut

The illustrated image below highlights the urban design elements like parks, seating foreground to view the monuments, signages, transportation infrastructure, pedestrian pathways and other necessary urban design elements.

Like wise, 2. Nuruosmaniye Camii, 3. Süleymaniye Camii 4. Fatih Camii have a potential to be developed as tourism circuits along the seven hills, which emphasizes on the history and architecture.



Image Source: Richa Raut

CONCLUSION

Present cities are dotted with repositories of historical evidence in the form of architectural buildings. These buildings have contributed in developing an image or identity for their respective cities. The narratives of these historical structures have changed over the period of time and development, thus showcasing them as tourist attractions or adaptive reuse housing a new function.

The architecture monuments still dominate the skyline of the city, which will yet be recognized for its buildings which resides here from the past. The same is the case with the city of Istanbul.

A powerful city which has endured magnificent empires and architecture, each at its apogee, and is even today one of the largest, bustling and beautiful Islamic cities.

The religious rule of the Ottoman Empire guided a superior style of architecture which rendered a specific image to the city and which still dominates the present skyline, though cluttered with contemporary development.

The ad-hoc development to encompass the increasing tourists lacks the experience of overlapping history and importance of the remnants.

In such context we need to address the future in this grandeur heritage. The possibility of the old town getting saturated with tourists and tourism infrastructure will seek for an imperative need of policy/guidelines addressing and respecting the gap between the past, present and future.

The need for master planning and policy framework for articulating the historical monuments and tourism infrastructure should be established, which will help in retaining the identity of Istanbul and yet allow contemporary needs to be catered to, while retaining and enhancing the past.



Image Source: Richa Raut

04

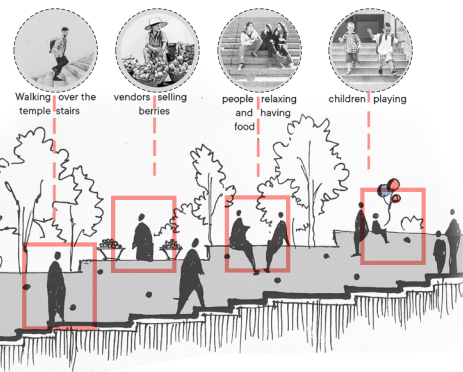
Role of Steps Leading to a Temple: Case of Barunei Temple, Khorda, Odisha

Submitted By: Ar. Amit Ashok Bhattacharya, Varsha Ashoka Patra

AN ARCHITECTURAL POSTER ON

ROLE OF STEPS LEADING TO A TEMPLE, CASE - BARUNEI TEMPLE, KHORDA, ODISHA

SITE LOCATION

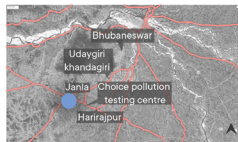


INTRODUCTION

The temple is Dedicated to the Hindu Goddess Barunei, a manifestation of Shakti. This is Located on the beautiful Barunei Hill in Khorda. The houses the twin Goddesses Barunei and Karunei in the sanctum. A stream flows from the hills which is known as Swarna Ganga. Together, the harmonical blend of historical man-made structures and nature, provides us with an ambience of peace and calm.

ACCESSIBILITY TO THE SITE

The Barunei Temple is located at about 150 ft high on the Barunei hill. The site is easily accessible via a two or four wheelers owing to good road network. It is 28 km from Vani Vihar, Bhubaneswar. It is also accessible via the rail network which is about 12kms from the Khorda Railway Station.

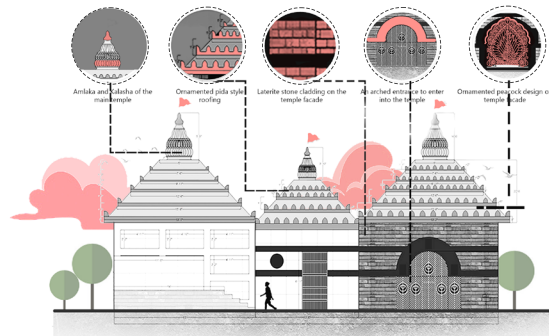


- Biju Patnaik International Airport - 29 Km
- Bhubaneswar Railway Station - 30 Km
- Vani Vihar Bus stop - 30 Km

STUDY OF ECOLOGICAL SENSITIVITY

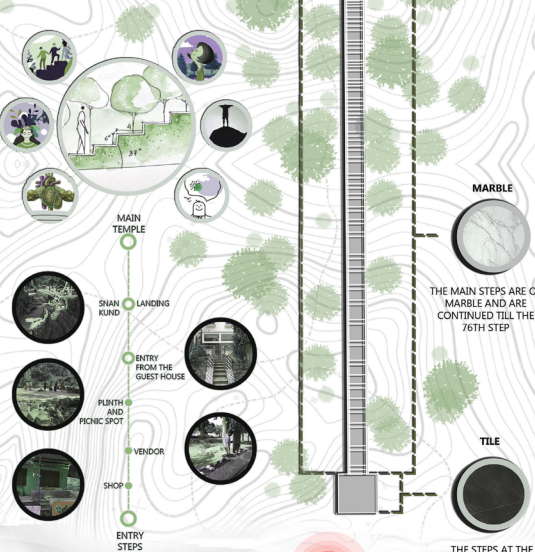


SALIENT FORM FEATURES



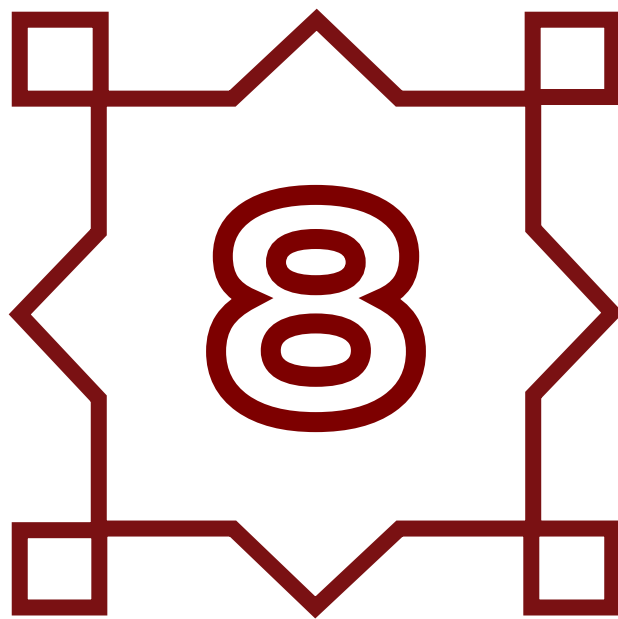
- Availability of seating spaces along the steps leading to the temple.
- A separate area is designated for parking, holding a large number of vehicles.
- Proper sanitation facility has been provided inside the temple.
- Public transportation has been provided to the temple destination.
- Lack of proper demarcating parking spaces.
- No visitor management.
- Lack of proper waste disposal.
- Apart from the swarna ganga stream, no other drinking water facility has been provided.
- With the availability of a good road network, the place has the capacity to attract tourists as it is rich in heritage and culture.
- The area surrounding the temple serves various purposes to a variety of users such as, a pilgrimage place, a picnic spot as well as for various trading opportunities.
- Insufficient security measures.
- The lack of support in maintaining the infrastructure to facilitate the influx of tourists in the region.

IMPACT OF STEPS ON USERS



INTERMEDIATE NODES





CLOSING

2nd SONA International Convention 2023 - A Summary

Ar. Kai Weise | Convention Technical Coordinator

The International Convention organized by the Society of Nepalese Architect (SONA), “The role of architecture in the creation of identity of the contemporary city”, took place on 19th and 20th January 2023 in Kathmandu, Nepal. The international convention was attended by office-bearers of the International Union of Architects (UIA), the Architects Regional Council Asia (ARCASIA), Presidents and Representatives from South Asian Association of Regional Cooperation of Architects (SAARCH) and international delegates from 15 countries. Special mentions are the President of UIA Ar. Jose Luis Cortes, the General Secretary of UIA Ar. Tan Pei Ing, the Vice President Zone 4 of UIA Ar. Ishtiaque Zahir Titas, and the President of ARCASIA Ar. Dr. Abusayeed M. Ahmed. The International Convention was organized under the leadership of SONA President Ar. Rajesh Thapa and ably supported by the Secretary General Ar. Apil KC, and the 14th EC of SONA. The following text has been adapted from the ‘Summary and Conclusions’ by Ar. Kai Weise, the Convention Technical Coordinator.

The two day convention was arranged based on a simple framework, which had to adapt to accommodate changing circumstances: an opening session, followed by alternating presentation and discussion sessions, and finally a closing session.

The opening session began with introductions, 30 seconds silence was made to respect and pray for the victims of the recent plane crash in Pokhara. The keynote was presented by Ar. Madhav Raman, who provided a wonderful introduction, going back to the plate tectonics that created the Himalayas, to the concerns of urban sprawl (blurb-an), and the discussion on permanent versus temporary architecture, and who actually builds? As he put it, we were “soul searching in Kathmandu”. This was followed by remarks by President of ARCASIA, the President of UIA, the chief guest Ar. Dr. Baburam Bhattarai, former Prime Minister of Nepal. The first panel discussion on the theme of the convention was chaired by Ar. Dr. Jagadish Pokharel. The four panellists raised interesting points on dealing with political, market and commercial forces, concluding that there is a need for public consultation, working together on a common agenda. We need to “unlearn”, redevelop education, focusing on the ‘local’. This was followed by the introductory presentation session chaired by Ar. Saifuddin Ahmed. There were three wonderful presentations. Ekistics, the science of human settlement was examined, focusing on happiness and resilience. Urban mobility was presented as one aspect to assess cities: right of way for pedestrians, walkability and access. Finally the planning of the new capital of Lumbini Province in Nepal was explained.

The second presentation session was on identity and heritage, chaired by Ar. Dr. Jibraj Pokharel. There were five presentations moving from an introduction to Karachi to the identity of Kathmandu Valley. The community and urban linkages to the single monument, the Kasthamandap, was presented, followed by the search for identity in Susta and Bharatpur. An interesting thread was the communities searching for identity and the discussion on borders, boundaries and access. This was followed by the second discussion session, ‘Heritage and

Urban Identity, Constraints of the Past?’ which was moderated by Ar Kai Weise. There were six panellists, with four presentations, discussing issues of governance, historic town settlement quarters, post-disaster reconstruction and identities and challenges of heritage settlements. The discussions focused on how to provide the required support to communities to ensure continuity of heritage settlements, allowing change, but retaining identity.

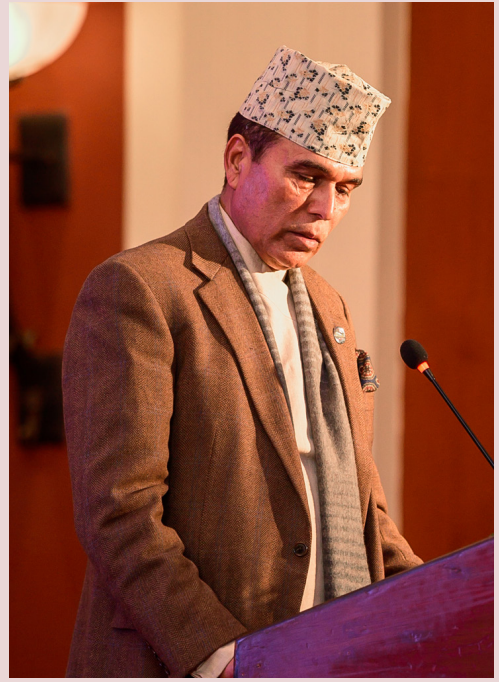
The third presentation session on sustainability and design was chaired by Ar. Adrianta Aziz. There were four presentations from Mumbai and Odisha in India, to Pokhara and New Road in Kathmandu Nepal. This session was about urban spaces, community linkages and the environment. It was about scale, self-sufficiency and ecology, about keeping the humans in the centre, while considering the needs of future generations. This was followed by a discussion session on ‘City Transformation and Sustainable Development’, moderated by Ar. Tushar Sogani. The session had five panellists, bring a wide understanding of the need for energy efficiency, backed up by the need to use renewable energy. This is linked to the changes in needs, and how this is addressed, through change and transformation, and by “refusing to destroy”, such as by adaptive reuse.

The fourth presentation session was on ‘Theories and Examples’, chaired by Ar Devendra Nath Gongal. There were five presentations moving from New York, to Varanasi, and Mumbai to Kathmandu. The presentations examined human need and human connect. What do we need in our cities? Open spaces, streets and safety. Critical issues were raised in respect to the planning of New Towns within the Kathmandu Valley, the impact of tall buildings, densification, and encroachment of open spaces. The final discussion session on ‘The Organised City Regions, Case of the Kathmandu Valley: Future Directions?’ was chaired by Dr Mahendra Subba. The panel consisted of four prominent panellists who had practical experience in dealing with planning within the Kathmandu Valley. Hard fact on the urbanisation issues of the valley were provided: operationalizing planning, land use, disaster risk, mobility, food security, balance with nature, rental housing, the plans and the implementing authorities.

The chief guest at the closing session was the former Honourable Minister for Urban Development Mr. Bikram Pandey, who promised to work closely with the architect fraternity. The SONA International Convention was a grand success, with many issues being addressed. All these issues pointed towards the need to put communities in the centre of development. As Edward Abbey stated, “growth for growth’s sake is the ideology of the cancer cell”. We need to talk about ‘quality’ of growth. The Convention contributed to this. The discourse must continue.

Address by Chief Guest and Former Minister of Urban Development

Nepal is one of the developing countries of the world and structural development is the spine of the developmental process. As architecture plays a vital role in development, our government has taken it as an agenda for the developmental regulations. We have different opportunities for development including construction of huge multi storied structures. Today, I would like to congratulate our dearest friends of “Society of Nepalese Architects-SONA” for making this event successful and would also like to encourage them to move forward for the development of such a country which is rich in architecture and natural habitat. Today as a minister of the Minister of Urban Development Nepal, I would like to make sure that our country will be having city planning guidelines including architecture which will help to make planning works easier and faster.



To all of the young architects and engineers, I would like to share that our country is one of the most beautiful countries in the world. Today, in this event representatives from about 18 countries are present who seem equally interested. I believe that you all have got an opportunity to learn and interact with each other which is very important.

“Nothing is impossible if you work hard for it”. In this decade the young engineers, architects must be able to think about how development is taking place, where it is heading to and what can be done to improve it. As a minister, I would like to assure you about taking all the necessary measures for the developmental process and also support the organization. Previously, similar speeches were given by ministers but it lacked implementation. Here, I would like to assure that any types of consequences faced by this ministry office shall be solved for the betterment of the nation. In this present era, all the opportunities are right in front of us but we are barely able to see it. Similarly, we are capable enough to solve any type of issue but sadly we are barely aware of that.

As a citizen of this country, I have been serving as a politician. I believe that all of you present here will help me in the near future because of which cities of this country and future of the entire young generations are likely to be successful.

Lastly, I would like to congratulate “Society of Nepalese Architects-SONA” for the success of their international yearly convention-2023. Thank you.

नेपाल एक विकास उन्मुख देश हो र पूर्वाधार निर्माण नै यसको मेरुदण्ड हो। त्यसैले हाम्रो देशमा पनि सरकारले सहरी निर्माणकार्यमा वास्तुकलाको भूमिकालाई प्रमुख एजेन्डाको रूपमा राखेको छ। हामीसँग निर्माणका थुप्रै सम्भावनावानाहरु छन्, जस्तै ठुला ठुला पूर्वाधारहरु, भवन लगायत धेरै निर्माणका कार्यहरु छन्। त्यसैले आजको यस ऐतिहासिक कार्यक्रमलाई सफल बनाउनका निम्ति “Society of Nepalese Architects-SONA” का मित्रहरुलाई शुभकामनाका साथ वास्तुकला र प्रकृतिको भण्डारले सुन्दर देश नेपालको पूर्वाधार विकासमा अघि बढ्न आवाहन गर्दछु। हाल नेपाल सरकारको सहरी विकास मन्त्रीको हैसियतले यहाँहरुलाई के अवगत गर्न चाहन्छु भने, अब छिट्टै हाम्रो देशमा वास्तुकला सहितकै सहरनिती बनाई सहज तरिकाले काम हुने व्यवस्थापन मिलाईनेछ।

हाम्रो देशमा रहनु भएका सबै युवा ईन्जिनियरस्, आर्किटेक्टस् र तमाम अग्रज ईन्जिनियरस्हरुलाई म के निवेदन गर्न चाहन्छु भने, यो प्रकृतिले बनाएको विश्वकै सुन्दर देश हो। आजको दिनमा यस कार्यक्रममा विश्वका १८ मुलुकबाट थुप्रै प्रतिनिधिहरु उपस्थित हुनुभएको छ। वहाँहरु पनि यस कार्यक्रमका लागि उत्तिकै इच्छुक देखिनु हुन्छ। यो तिन दिनको कार्यक्रममा तपाईंहरु ले धेरै कुरा सिक्नुका साथसाथै एउटा पक्षमा अन्तरक्रिया पनि गर्नु भयो होला भन्ने विस्वाश गर्दछु।

आज यहाँ उपस्थित हुनु भएका सम्पूर्ण युवा ईन्जिनियरस्हरुलाई म के भन्न चाहन्छु भने, कठिन परिश्रम गरेमा कुनै पनि कार्य असम्भव छैन। आजको दिनमा युवा पुस्ताले यो देशलाई कुन दिशातिर लैजाने, यो सहरलाई कस्तो रूप दिने, पूर्वजहरुले कस्तो बनाउन खोजेका थिए र त्यसकालागि के गर्न सकिन्छ भनेर सोच्ने समय आइसकेको छ। म यहाँहरुलाई के विस्वाश दिलाउन चाहन्छु भने, यो मन्त्रालयबाट मैले के सहयोग पुर्याउन जरुरि छ, कुनै कसर बाँकि नराखी म यहाँहरुको यस संस्थालाई पूर्ण रूपमा साथ दिने, निवेदन गर्दछु। हुन त आज भन्दा पहिले पनि मन्त्रिहरुको यस बारे धेरै भाषण सुन्नु भएको थियो होला तर कार्यमा भने फरक देखिएन। तर म भने भाषण मात्र नभएर यस मन्त्रालयमा आउन सक्ने कुनै पनि समस्या समाधान गर्ने भनेर अठोट लिएर आएको छु जसका कारण कार्यरत ईन्जिनियरहरुले ध्यान पूर्वक कार्यभूमिमा अगाडि बढ्ने अवसर पाउनु हुने छ। आजको समयमा थुप्रै अवसरहरु यहाँहरुको मुठीमा छ तर त्यसको उपयोग भने भैरहेको छैन र त्यस कार्यलाई सफल गराउन सक्ने क्षमता पनि यहाँहरु संगै छ तर यसको पर्याप्त उपयोग भने भइरहेको छैन।

मेरो देशकालागि केहि गर्न सक्छु भन्ने चाहनाले राजनीति मेरो बाध्यता बनेको छ। त्यसकालागि मलाई तपाईंहरु सबैले सहयोग पुर्याउनु हुने छ भन्ने म विश्वास गर्दछु जसले गर्दा यो देश भरिका सहरहरु र तपाईंहरु जस्ता युवाहरुको भविष्य सफल हुने छ।

अन्त्यमा “Society of Nepalese Architects-SONA” को बार्षिक अन्तरास्ट्रिय सम्बेलन-२०२३को , सफलताको पुर्व शुभकामना व्यक्त गर्दछु। धन्यवाद।

Hon. Bikram Pandey

Minister (Former)

Ministry of Urban Development, Government of Nepal

Friday, January 20 2023

Address by Ar. Tan Pei Ing

Honourable Chief Guest, the company Ministry of Urban Development, distinguished guest, SONA President Rajesh, fellow architects, colleagues and fiends. Namaste! My warmest greeting to all of you. I would like to present my heartiest congratulations to The Society of Nepalese Architects (SONA) for your kind invitation and fantastic hospitality that has been served to all of us. It is a great honour for me to have given this opportunity to participate in this SONA international convention in this beautiful historical Kathmandu city.

The role of architecture in the creation of identity, of the contemporary city, is very appropriate in time specially during the period where the whole world is affected by the unpleasant pandemic Covid-19 and the severe impacts of the climate change. The covid-19 pandemic has changed the way we work, interact, travel and live and also created a new challenge on architecture communities and the habitat. With the progressive migration from pandemic to epidemic, although we hope to be able to eventually return to the pre-covid 19 regime, we should take this opportunity to transform, and reinvent our community sensity so that they would be much better and more progressive and future ready or retaining our roots and identities. Covid-19 crisis has not only escalated the adoption of digital technologies, it has also highlighted the importance of collaborative, responsive and creative ways for the architects and other stake holders including the public to work together in the manner to breach technology and design to deliver values. With the advancement of IT and communication technology, the world has become more globalized. While we recognize the diversity of respective cultures, issues concerning our profession in the built environment are becoming more universal.

We are heading towards more urbanized environment where population of almost 8 billion are living in urban areas and this number will rise more than 70% in 2050. These urban areas will emit the highest carbon-dioxide and consume the most energy globally. There will be an ill controlled urbanization that will cause immense effects in climate change which will result in increasing temperatures and sea levels, unpredictable weather conditions, extreme weather, environmental degradation, loss of wide life, bio-diversity and social impact such as these place, people and loss of livelihood. The climate change has caused a lot of detrimental issues that has huge impacts on health and at maintenance of wellbeing which include environmental, emotional, intellectual, physical, occupational, spiritual, social and financial aspects and according to a article, "The climate change is 100 time more costly than COVID-19" that is increasing evident showing that properly planned city and urban environment will deliver multiple benefits to the health and wellbeing of society. In the TedTalk by Michael Murphy, he quoted, "Great architecture give us hope and great architecture can heal" as such it is



important for us to focus on how we should transform our desired parameters and philosophy to improve urbanization.

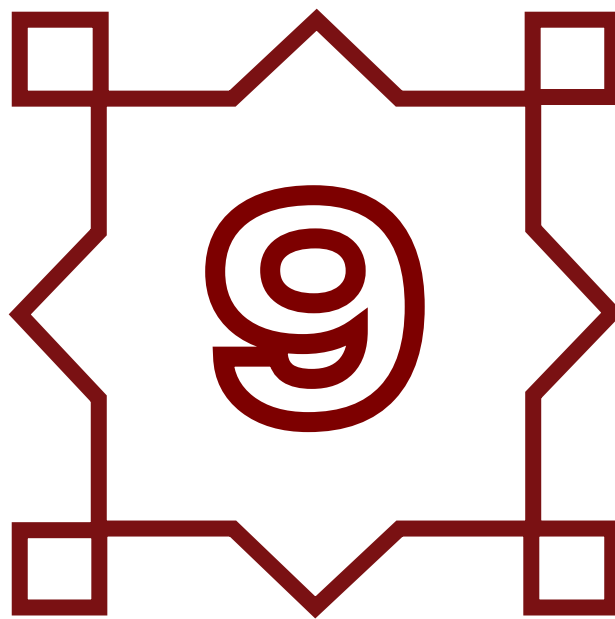
Architecture interacts with the seventeen sustainable development goals and has a crucial role to play in combating climate change and shaping our lives. These are therefore the key differentiator and the critical tool and principles of design for the sustainability, health and wellbeing. These are to be integrated into the built environment and the planning policies. Architects play a pivot role in engaging and working with other stakeholders to improve synergy across the borders and catalyse actions to improve urban transformations to create liveable and sustainable cities that promote wellbeing, accommodate diversity, social inclusion, and equity living the one behind. It is of utmost importance for the cities to be planned to reflect the identities and soul of the society. Our cultural heritage has great impact on the quality and overall wellbeing of the community at multiple levels and they must be leveraged and preserved to truly achieve their aesthetics for the benefit of all. The enhancement of environmental qualities enables the full realization of the human potential to be fundamental to community wellbeing and resilience. The other areas that we must not forget is a concept of architecture for humanity. We must ask ourselves how this our profession contribute to equity amongst people and what can we do to facilitate the people's rights to access to shelter, facilities and also to the city, education, culture and to minimize expropriation and discrimination. We must not lose sight of the fundamentals of our profession and that is to design architecture for all. My sincere congratulations to SONA for successful completion of this convention. The assembly of architects from different parts of the world has served as a great platform to share common values, knowledge, experience and aspirations. I am truly with the breadth and depth of the topics covered which were extremely inspirational with the great relevance to the convention team.

In conclusion, we all need to evaluate and make positive changes throughout practice, design and planning to remain relevant and confront to meet the expectation and trust by the public to us as such let us channel our energy and focus to move forward in order to create a contemporary city with unique identity that is truly sustainable and the new tomorrow face on the lessons that. I would like to end my closing remark by sharing this quote by a native American poet which states "We don't inherit the Earth from our ancestors, we borrow it from our children" so let's join together to make a meaningful difference.
Thankyou.

Ar. Tan Pei Ing

Secretary General UIA

Friday, January 20 2023



ACCEPTED PAPERS AND POSTERS

Paper 1

Ar. Sarada Kapila



An architect, Chartered Engineer, Valuer, and an Urban Planner with around 24 years of Industrial, Academic, and administrative experience in the field. Currently pursuing Doctoral program in Urban Planning from Jaipur University. Also attended webinars, organised national level model making workshop, presented research papers in various national and international conferences. A member of the Council of Architecture, New Delhi, a Fellow member of the Indian Institute of Valuers, India, New Delhi, an Associate member of the Indian Institute of Architects, Mumbai, India, an Associate member of the Indian Institute of Town planners, India, a Fellow member (FIE), and Chartered Engineer of the Institution of Engineers, India. A practicing Consultant since September 1997 providing consultancy services to various clients

in the areas of Architecture, Interior Designing, Planning, GIS, Estimations and Valuation certifications. Further handled classes for the undergraduate and post graduate students in numerous subjects of architecture, and planning. In Undergraduate guided thesis students of IX semester and conducted practical training visits to X semester students. Was an Elected member of the Executive Council of All India Institute of Town Planners- A.P. Regional Chapter in the year 2003, and as a special Executive member, Institute of Town Planner's India (ITPI), Telangana Regional chapter, Hyderabad, in the year 2017.

Paper 2

Ar. Sujina Shrestha



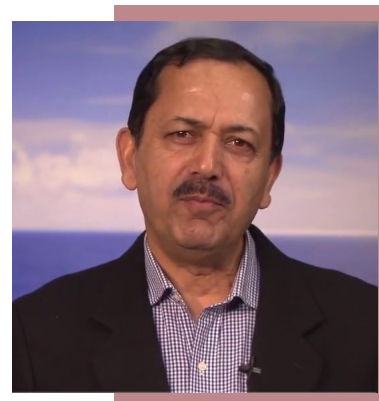
Sujina Shrestha has always been fascinated by how our ancestor's infused architecture into our daily life starting from Dhunge dhara to temples and buildings. This led to increasing my interest in architecture and how it structured the changing lifestyle of the people. I have recently completed my Master's in Urban Design and Conservation from Khwopa Engineering College and am working in Imagine Consultancy Pvt. Ltd. as a Senior Architect. The primary reason of choosing this field of study was to understand how Urban societies were constructed, by making the ancient architectures and monuments inclusive. For my Master's thesis too, I made a study of Khokana Municipality and their open spaces how the pre-existing monuments were conserved along with the development of society.

I had always built up myself into such a person that could combine the soothing feel of the past and fast paced urban life. Throughout my educational journey to this stage, I have also built my professional background too working in different companies starting from 2014. I have also been involved in many Professional Societies and Seminars such as: Nepal Engineering Council (NEC), Nepal Engineer's Association (NEA) and Society of Nepalese Architect (SONA). I am well equipped with all the required technical skills that I require to produce in the market.

Paper 3

Dr. Tej Kumar Karki

Dr. Tej Kumar Karki is life member of Society of Nepalese Architects (SONA). Dr. Karki received his Ph.D. in 2010 from Northeastern University, USA. He has B. Arch degree from Chandigarh College of Architecture, and a Master's in Planning from the Asian Institute of Technology, Bangkok. Tej has served as faculty at Boston and Tufts University, USA. In 2016, he was MIT visiting scholar for carrying out research on urban flooding. Dr. Karki has also served as chief town planner of Kathmandu and Lalitpur City in Nepal. At present, he is Professor at Lovely Professional University, Punjab India, and he is currently supervising PhD students.



Tej's research interests covers social skills in architecture practice, inclusive planning, disaster governance, politics of climate change, and leadership at local level. His teaching interest includes providing free mentorship to the most underprivileged students in Nepal who are struggling hard to progress. He has published several articles in planning in international journals and recently he published a book chapter on how inclusive are smart cities of India in an edited book. The papers published in the international journals, include road widening in Kathmandu Valley, Earthquake resilience in Nepal, Flood resilience in Malaysia, Bike-sharing in China, and State housing policy in the US.

Paper 4

Ar. Rajratna Jadhav

Rajratna Jadhav is an award-winning registered architect with over 21 years of experience in education and practice. Educated and experienced in India and the US as architect and educator, Jadhav has also authored books, research papers and articles that are published in Indian and international publications including in the UN Chronicle, Journal of Indian Institute of Architects, Arhitektura and others. In 2014, Jadhav had the honor of being invited by the prestigious Aga Khan Development Network as juror for their international competition for redevelopment of the Prince Ali Khan Hospital, Mumbai.



He received the Journal of Indian Institute of Architects Award in the year 2000 and the John Helm Award for outstanding graduate student from his alma mater, Kansas State University, USA in the year 1998. Jadhav is a Fellow of the Indian Institute of Architects and a Member of the Practicing Engineers, Architects and Town Planners Association, Mumbai. Jadhav has procured and executed architectural projects in residential, institutional, entertainment, commercial and industrial sectors as well as in interior design. Presently, Jadhav is a Professor of Architecture at Rachana Sansad's Academy of Architecture affiliated to the University of Mumbai, India.

Paper 5

Ar. Rashika Abeyawardana

A Chartered architect qualified in the UK and in Sri Lanka, Rashika gained a B.Sc. in Built Environment at the Faculty of Architecture of University of Moratuwa, Sri Lanka and a M.Sc. specializing in Virtual Environments at the Bartlett, UCL, UK. Improving spatial experience through stereo sound and 3D projection she developed an existing interface design as an intermediate platform between physical and virtual museum explorations supporting multi-user input and time-based, responsive architecture and 1:1 installations at the Bartlett Interactive Workshop unit. Rashika gained UK work experience designing and building higher education, aviation, healthcare, transport, highly serviced laboratory & pharmaceutical buildings for six years before embarking on an academic career in Sri Lanka. She was a senior lecturer in Architecture at the University of Moratuwa, a visiting lecturer in Interior Design at the Colombo National Institute of Business Management and is a visiting lecturer at the Academy of Design at their Interior Design Department. Rashika was an external architecture critic and postgraduate dissertation coordinator at the Colombo City School of Architecture, where she is currently a senior lecturer in architecture.

Paper 6

Dr. Priya Sasidharan



Enthusiastic professional with domain expertise in Architecture, Planning & Urban Design, experience spanning 20 years in academics, research and consultancy, the innate conviction being pursuit of excellence. Recipient, Best Thesis Award, Town Planning (SAP, Anna University), University Rank holder in Architecture, Doctorate in urban identity studies, CEPT University, P.G. Diploma on Green cities for Eco efficiency, Erasmus University, Netherlands realised through IHS Partial fellowship has honed knowledge & collaborative skills at National & global scenarios. Professional trajectory profiles being a student member at UNDP-MATURE urban renewal projects to selection by ISOCARP at Sustainable Energy and Spatial Planning Workshop, Douro UNESCO Region, Portugal, 2009. Recipient of International fellowships - Young Planning Professional (YPP), ISOCARP, 2009, IHS Partial Fellowship, Netherlands 2015 and INTACH Research Scholarship 2019. Presented and published several papers on urban design, sustainability, public realm and smart cities at National and International forums, with an invited paper from European Summer School (EUSS) (AESOP), in 2010 to a book chapter, Urban Corporis X- Unexpected, 2021. Teaching urban design, city identity, retrofitting, master planning, land & housing markets at advanced level, mentoring thesis, research,

Paper 7

Ar. Shruti Utpal Barve

Associate Professor, RachanaSansad's Academy of Architecture, Mumbai, India

Education: Post Graduate Diploma in Landscape Architecture from C.E.P.T. Ahmedabad. Equivalent to M. Arch. (1998-2000) First Class B.Arch. from Sir J.J. College of Architecture, Mumbai University. (1993-98) First Class with Honors Post Graduate Diploma in Indian Aesthetics, at Jananapravaha, Mumbai (2013-14)

Experience: Teaching in various architecture education institutes Like Sir JJ COA, Rizvi COA, Rachana Sansad, NMIMS- BSSA, for past 19 years. Associate | Grassroots Research Consultancy | 2005 – Till Date. Founder Member | Grassroots Foundation | 2016 – Till Date

Scope of work involved Environmental conservation, Environmental Planning and Management, Ecological Restoration, Heritage Landscape and Adaptive reuse, Landscape Design expertise. Many of these projects were partly funded by Asian Development Bank and partly by other Governmental Agencies Like MMR-EIS, Forest Dept Govt. of Maharashtra, State Government of Punjab, MRIDA Mahakaal Rudrasagar Integrated Development Approach, Ujjain, Etc. This gave me opportunity to work closely with these agencies and understand processes.



Paper 8

Ar. Tanha Tabassum Tisha

I'm Tanha Tabassum Tisha, an architect, currently working as a Lecturer in the Department of Architecture, BSMRSTU, Gopalganj, Bangladesh. I live in Khulna the 3rd metropolitan city of Bangladesh. I have completed my B.Arch and MScHS from Khulna University Architecture Discipline, Khulna. I worked as a part-time teaching staff at Khulna University from 2017 to 2019. Later I joined BSMRSTU as part-time teaching staff from 2019 to 2021.

During this time period, I completed my master's and did some research work. From the 4th-year urban design studio of my B.Arch program, I was interested in urban issues, design and policies. Any sector-related urban design became my interest after doing my Master's in Human settlement. I attended a few conferences and presented about different topics of urban design. This conference caught my eye as it's also about urban issues. I'm very interested to attend this conference and present there.



Paper 9

Ar. Maneerat Pachankoo

Paper 10

Ar. Swati Chokshi



Swati R. Chokshi is an award winning Green Architect and Senior Associate Professor with Rachana Sansad's Academy of Architecture affiliated to the University of Mumbai. She also served as the former HOD-in charge of the erstwhile post-graduate department; The Project Management Institute at Rachana Sansad. She has taught diverse subjects like architectural design, urban design, marketing, accounting, sustainability, humanities and technology at undergraduate and post graduate levels.

She is a multidisciplinary practitioner and an alumnus of Sir J. J. College of Architecture (graduated in 1987). She holds an M. Arch (Project Management in construction).

Her second master's degree is M. Arch (by research- in environment). She is a BEE approved (Government of India) Master Trainer for the ECBC (The Energy Conservation Building Code) and GRIHA-the Indian National Green Building Rating System. She is also An IGBC AP (Indian Green Building Council Accredited Professional)

She was Faculty Advisor for many competitions including the International Solar Decathlon Europe 2014. (partnering with IIT-Mumbai). She has held positions of responsibility as Member of Board of Studies at University of Mumbai and SNDT University and at Local Academic Inspection Committees.

Paper 11

Ar. Tushar Sogani



Tushar Sogani graduated with a degree in architecture from Malaviya Regional Engineering College in Jaipur, and he currently serves as the chairman of the Rajasthan chapters of the Indian Institute of Architects, GEM Rajasthan Chapter, and the Arcasia Committee on Green & Sustainable Architecture (ACGSA). (An Association of 21 Countries) and Co-Chairman ASSOCHAM – Rajasthan State Development Council, as well as an exclusive member of the Government board of experts established in accordance with the state's construction byelaws.

He belongs to The Indian Institute of Architects as a fellow. His aim is to always look for a sustainable architectural solution that will satisfy the client while also taking the local context and conditions into account.

Accepted for Poster Presentations

Poster 1

Ar. Ram Shrestha

Mr. Ram Shrestha, an Architect, Urban Planner, and currently Ph.D. Scholar student of Southwest Jiaotong University of China. He did a bachelor's in Architecture and a Master's in urban planning from Nepal. He is the former President of the Madhyapur Engineering Society. He was a part-time lecturer at Nepal Engineering College and Kantipur Engineering College. He is currently a part-time lecturer and thesis supervisor at Thapathali Engineering Campus. He is the principal Architect of Shwet Bhairab Architect & Associates. He is working on a research on disaster risk management school in Nepal with Ritesmeikhan University. He has been involved in various research work related to architecture, planning, and heritage conservation as a team member of different institutions. He is practicing various Architectural and urban planning Projects.



Poster 2

Ar. Srijana Prajapati

Bhaktapur was my birth place, which is open book to learn about living heritage. Being student of Khwopa Engineering College during the year 2066 BS to 2072 BS was the best experience to feel how this profession can have creative world. Which I couldn't feel during the study of Diploma in Architecture at Thapathali Engineering Campus (2061 BS to 2064 BS). However, that was the base for my technical learning. After completion of sub-engineering course, I have joined Method Consult Pvt. Ltd. in 2064 BS. Where I have learned many practical knowledge as well as practiced drawings and implementation of the project at site. Ganeshman Singh Memorial Park, Subarneshwor, Bhaktapur was my Bachelor thesis, where I have learned how to design a large project and also design for purpose. I have completed my Master's in Urban design and conservation from of Khwopa Engineering College (2073 - 2075 BS). That was a milestone for my life journey. The meaning of Newari Urban city and Urban history was very important. So that they have to be made a research topic and must write for future generation. that was my feelings after doing my Master's thesis on Urban history (Uttar Mallakalma bistarit sthanharu ek Adhyayan, Bharbharcho ra Itachhen).

Poster 3

Ar. Nistha Nakarmi

ARCHITECTURE AND CITIES-THE ROLE OF ARCHITECTURE IN DEFINING THE IDENTITY OF THE CITY, CASE OF GOLCONDA FORT, HYDERABAD

○Ar. Sarada Kapila*

Abstract

This research paper talks about the Architectural marvel and identity of the Telangana state the magnificent Golconda fort located in the capital city of Hyderabad. The Golconda fort, and other Qutub Shahi dynasty Monuments of Hyderabad (the Charminar, and the Qutub Shahi Tombs) were proposed by the Permanent Delegation of India to United Nations Educational Scientific Cultural Organization (UNESCO) in the year 2010 for consideration as World Heritage Sites. They are presently included on India's "tentative list. One of the main reasons for the Golconda Fort not being declared a World Heritage Monument was illegal occupants in the fort premises. In view of protecting and preserving its heritage monuments the present ruling Telangana government (TRS) has come up with new Heritage act in the year 2017 and started celebrating regional (Bonalu)and National festivals (Independence Day and Republic Day) in the fort premises.

Introduction:

India is one of the oldest civilizations in the world with a rich cultural heritage, breath-taking landscapes and myriad attractions. It is described as 'Incredible India'. This Incredible India consists of architectural marvels like The Taj Mahal, Red Fort of Agra, Delhi's Qutub Minar, Ajanta and Ellora caves, Sun Temple Konark, Group of monuments at Hampi, Bodh Gaya, Sanchi Stupa, Chhatrapati Shivaji Terminus etc. In view of preserving our heritage sites The United Nations Educational Scientific and Cultural Organisation (UNESCO) World Heritage Convention, which was established in 1972, will recognise various sites of cultural and natural importance



Fig.1: Sketch of Golconda fort

around the world. The Hyderabad city brags of a variety of ancient monuments and sites of historical and cultural importance that was built under the patronage of the Nizams and the Qutub Shahi dynasty, including the Charminar and Golconda Fort which are of national importance. The Qutub Shahi Monuments of Hyderabad- Golconda Fort, Qutub Shahi Tombs, Charminar etc., are in the list of UNESCO's notified monuments. The reason for selecting the site is a combination of heritage, cultural, tourism, and of national importance located in the heart of the city need to be studied for various threats and come up with suitable recommendations.

Objective:

To study and analyze the aspects that are hampering the Heritage site-Golconda Fort located in Hyderabad, Telangana state, India.

Purpose:

To study and analyse in depth the factors of Socio-cultural, Economic, and political and their influences on the above said Heritage fort and come up with suitable measures.

Research design:

The study is carried out with an exploratory & quantitative method of research relying on both primary(site visit, opinion from tourists, and field experts) and secondary(scholarly articles and web sites)sources of literature study. The data is compiled, and analyzed for the inferences of the various aspects, and concluded with suitable actions to be taken up in protecting the fort.

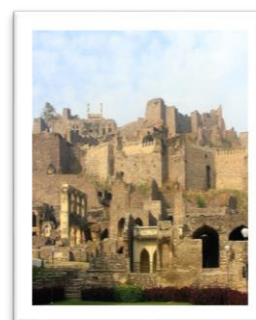


Fig.2: View of the fort

Aspects considered for the research study

1. Historical background:

Golconda fort is undoubtedly one of most magnificent fortress complexes in India. It was initially called Shepherd's Hill, meaning Golla Konda in Telugu while according to legend, on a rocky hill a shepherd boy had come across an idol and the information was conveyed to the ruling Kakatiya king at that time. The king built a mud fort around this holy spot and after 200 years, Bahmani rulers took charge of the place. Later the Qutub Shahi kings improved this into a massive granite fort.

Inference: The rich historical heritage monument is to be preserved for the upcoming generations.

Keywords: Heritage, Marvel, TRS, regional, and UNESCO.

*Ar. Sarada Kapila, Associate Professor, Sri Venkateshwara College of Architecture, Hyderabad, India.

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Fig.2: View of the Fort Inner Fortification

2. Fort Prominence

A magnificent fortress-city famous for the diamond trade within the walls. Golconda is renowned for the diamonds found on south-east at Kollur mine near Kollur, Guntur district, Paritala and Atkur in Krishna district. Its name has taken a generic meaning associated with great wealth. Some of the world-famous diamonds like Koh-i-noor, Daria-I-Noor, Regend diamond, Noorul-Ain, Hope diamond, and Wittelsbach-Graff diamond are believed to have been excavated from the mines of Golconda.



Fig.3 (a): Kohinoor



Fig.3 (b): Hope



Fig.3(c): Daria-I-Noor



Fig.3 (d): Wittelsbach

Inference: Fort can be revived with a museum depicting its wealth and richness of that era.

3. Tourism

The site attracts many visitors on daily basis and heavy crowd on public holidays and festivals. It has led to dumping of cigarettes, wine bottles, plastic waste and the officials does not seem to be interested in cleaning up the walled city.

Inference: Increasing the ticketing price slightly from present a minimal entry fee of Rs. 20 for Indians and Rs. 200 for foreign tourists. This will help in the maintenance of the fort and in restricting the entry of the public whose intention is to create nuisance and damage to the heritage site.



Fig.4: picture showing the waste dumping at Fort

4. Status of the list of UNESCO world heritage monument:

One of the main reasons for the Golconda Fort not being declared a World Heritage Monument was encroachments. As per the Ancient Monuments Archaeological Sites and Remains Act, 1958, the area within 100 meters of the monument is prohibited and no constructions should come up here. But around the Golconda Fort, there are 926 houses in the prohibited region and 13 within 30 feet of the fort's wall. There is a proposal for the construction of villas around the fort by a reputed firm. They have obtained no-objection certificate from the national monument's authority.

Inference: But in the absence of detailed revenue maps, ASI officials say they are helpless with the "Strong political backing has made the encroachers fearless."

5. Events/Activities and Festivals celebrated at Fort:

Every evening the Telangana Tourism organizes an inspiring sound and light shows depicting the grand history of the rulers of various dynasties at the marvellous Golconda fort. The annual Bonalu Festival, which is celebrated in the month of Ashadamasam, begins with the offering of the first bonalu of the Telangana state at the Jagadambika Temple, located within the premises of the fort, and is named as 'Golkonda Bonalu'.

Independence Day and republic day are also commemorated in a grand and spectacular way on the green, serene nature carpets of the fort.

Inference: The fort premises can be fully developed with the facilities to cater the needs of the tourists not only for the celebrations for a particular event but all 365 days.



Fig.5 (a): Light and Sound show



Fig.5 (b): Golkonda Bonalu-Jagadambika temple



Fig.5 (c): Independence Day celebrations

6. Restoration works:

The Golconda fort is key to Telangana government's effort at acquiring a UNESCO World Heritage Site status for its Qutub Shahi-era monuments. While the inner fortification is being carefully restored by the ASI using archival images, the area around the monument is flooded with encroachers taking over most areas. While landscaping, officials of Archaeological Survey of India (ASI) have discovered a different pathway to the Jagadamba temple which is near the Bala Hissar Darwaza of the fort. During clearing the vegetation Archaeological Survey of India discovered huge chambers near the structure known as Ramdas Bandikhana.

Only organic (surkhi, lime, bale juice, and molasses) and durable materials like Marble, Granite, and Lime mortar being used in the fort restoration. The clapping chamber, which showed a rough layout of the fort, is now a symmetrical structure with clean lines after the conservation and landscaping work. Water channel and fountain in the Nagina Bagh area which was gutted and covered with vegetation has been beautifully restored.

Inference: The upkeep of the inner fort has been hampered by the financial crunch and ad hoc policies. The ASI's budget has seen a dip from Rs 1,247 crore allocation in 2020-2021 to Rs 1,042 crore in 2021-2022 a decline of 16%.



Fig.6: Glimpse of the restoration works by ASI

7. Land Encroachments:

The controversy over the ownership also played a major role in the encroachment of the fort and its premises. The fort, palaces, tombs, and its environs covering 4 sq. km. belongs to the Sarf-E-Khas, private estate of the Nizams of Hyderabad. Land in and around the fort was allotted on lease (free of cost) for a specified period and known as Atiya Sultani or Royal gift.

Currently two housing societies namely Abbassi and Parkae have occupied 35 acres of land between the inner fort and the tombs of the Golconda kings.

Inference: This shows that the land grabbing is going on tremendously. Land racketeers have misused the noble cause-Atiya Sultani of the Nizams and are using land for the purpose of cultivation.

Recommendations from the above aspects of the study

Land and Construction activities- Relocating the settlements to the nearby vacant locations, preventing construction of the villas next to the fort, and to ban all the construction activities in the fort city and preserve historic remains, strengthening the restoration works. Government can buy the vacant and agricultural land in the fort premises and hand it over to the ASI officials for the restoration.

Restoration- Now, there is a change in the current conservation policy where we can reconstruct a building or a structure if we can find evidence about how it looked earlier. Sometimes, the evidence is in the form of a photograph or a painting," informs Mr. Chauley. An official from ASI. The changes in the Golconda fort in Hyderabad show the positive impact of conservation and landscaping carried out by the Archaeological Survey of India. There should be a law providing for a free zone for efficient safeguard of the monuments.

Facilities- Providing decent eateries for the tourists, prevention of damage to the fort premises by the tourists, increasing the security manpower.

Note: Golkonda is an example of monumental negligence. Authorities may wake up now and with little care can make the fort bag the tag of UNESCO world heritage list of monuments.

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TRANSFORMATION OF USE OF PUBLIC OPEN SPACE IN THE HISTORIC TOWN OF KHOKANA

○Sujina Shrestha*, Bijaya K. Shrestha**

Abstract

Listed in the UNESCO's world heritage tentative list in 1996, the historic 'newari' town of Khokana (ward 21 of Lalitpur metropolitan city) covers around 8.56 ha of land. Considered as a model of medieval settlement pattern, it comprises of numerous public open spaces with compact houses connected by a series of narrow alleys and streets. The main aim of this paper is to explore changing uses of public spaces in Khokana. It has three objectives: identifying salient features of the public open space, analyzing the transformation of uses including their causes and effects and suggesting some key recommendations. Numerous literature review, site visit and questionnaire survey with inhabitants and consultation with ward officials were carried out for collection of quantitative and qualitative data. Among the studied fourteen number of open spaces, they were grouped into three type based on their functional use: cultural node (Chwela chhi, Kwelachhi, etc.), market square (Dhokapine, Nhyabulachhi, etc.) and residential courtyard (Dhyakuchhen, Kalanani, Nyalananani, etc.). These public open spaces were often equipped with temples, chaityas, community buildings, rest house, pond and oil mills, and were the centre of socio-cultural and religious activities. The sense of enclosure was achieved due to encircling houses with coherent architectural form. However, use of these public spaces were found gradually changing. Drying of agriculture products have been almost gone, religious and socialization activities have been reduced and the commercial activities such as vehicle parking and encroachment of the shop front spaces were on rise. Debris of the 2015 earthquake were stored on some public spaces and rest houses. Change in building use and incompatible building construction especially after the earthquake including reduction in cultural activities (due to lack of resources) led such transformation thereby hindering quality and quantity of public open spaces. Public open spaces must be dedicated to community use only which can be restored through regulating building construction, reviving socio-cultural events and innovating new activities such as art, culture, display, exhibition and so on.

Keywords: Public open space, Khokana, architectural form, Transformation, Innovation

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**Ph.D. MUD. B. Arch., General Secretary, Consumer Eye Nepal, Kathmandu

WHAT SOFT SKILLS DO ARCHITECTS NEED TO SHAPE A CITY'S IDENTITY?

Learning from Le Corbusier and Pierre Jeanneret's work in Chandigarh

◦Dr. Tej Karki*

Summary:

Using social skills parameters, this paper asks how self-regulated and empathic Le Corbusier and Pierre Jeanneret were while shaping the identity of Chandigarh. It evaluates their anger management, active listening, user-centered design thinking, mentoring, coaching, negotiating, and management skills. For that matter it would review the historical documents on these two architects, and literatures on emotional intelligence. Le Corbusier was the team leader and Pierre Jeanneret was the overall incharge of the city development project. Le Corbusier was occasional visitor and supervisor and Pierre Jeanneret stayed in Chandigarh throughout the implementation period and beyond.

The 1947 India-Pakistan partisan caused Lahore (state capital of Punjab) to fall in Pakistan leaving the Indian-side Punjab without a state capital. The Indian Prime Minister Jawaharlal Nehru took the initiative to create a capital city for Punjab that is: "symbolic of the freedom of India, unfettered by the traditions of the past, an expression of the nation's faith in the future." Nehru formed a team of Indian and European architects, including Le Corbusier, his cousin Pierre Jeanneret, Maxwell Fry, and Jane Drew (Bahga & Bahga, 2014). The Prime Minister wanted to carve a modern identity of India through the creation of a new city.

The process of city identity creation demands for a thorough understanding of the aspirations and expectations of the people, place, and the culture. This requires social and emotional skills more than the physical design skills. Practitioners or architects involved in city identity creation process should be good at self-regulation and empathy (Daniel Goleman, 2011). Self-regulation is about anger management: controlling emotional impulses and reactive behavior in a stressful environment. A person with self-regulation stays calm, controls anger and help cool the angry environment. He has the ability to control emotional impulses and reactive behavior. Not being prisoners of own feelings and emotions. They show humility, demonstrate a compelling modesty, shunning public adulation; never boastful (Collins, 2011). They act with quiet, and calm determination (Collins, 2011). Person with self-regulation would pick words carefully, admit weaknesses, and reflect on the causes of failures. Many of the bad things that happen in companies are a function of impulsive behavior. People in control of their feelings are able to create an environment of trust and fairness. A cranky and ruthless leader creates toxic organization (D. Goleman, Boyatzis, & McKee, 2015). Create fear and anxiety among team members and followers, and suppress team idea generation (D. Goleman et al., 2015).

Empathy is "capacity" to share and understand another's emotion (F & V, 2008). Ability to "put oneself into another's shoes" (F & V, 2008). Paying serious attention to others' feelings, values and culture especially when making decisions (D. Goleman et al., 2015). It is ability to understand the emotional makeup of other people and treat people according to their emotional reactions (Daniel Goleman, 2015). It is about showing respect to others and earning more respect from the respected individuals, and promoting a supporting environment at work (Ury, 2015).

Broadly empathy could be evaluated through someone's skills for active listening, user-oriented design thinking, mentoring and coaching, and negotiating and team managing.

Active Listening: In professional practice, active listening is thoughtfully considering employees' feelings in the process of making intelligent decisions (Daniel Goleman, 2015). They take the time to listen to everyone in the group—what was frustrating them, how they rated their colleagues, whether they felt they had been ignored (Daniel Goleman, 2015). Active listening practitioners can manage employee's emotions individually and collectively to make them do their jobs better (D. Goleman et al., 2015).

User-oriented design thinking: User-oriented thinking is better understanding the lives of the users and identify latent needs in order to create what they need (HEIDI M Neck). Such thinking provides design practitioners the ability to identify the unmet needs and know if the solution meets those needs (Patnaik, 2009 p. 13). People with user-oriented thinking mindset also be able to better understand the planning and design team members, their interests and needs, and motivate them to bring extraordinary results (Kovach, 2018).

Mentor and coach: Practitioners having mentoring skills excel at inspiring people, capturing hearts, minds, and souls and produce great results (Goffee & Jones, 2011). They empower leaders at all levels to step up and lead (George, Sims, McLean, & Mayer, 2011). They focus on the personal development of their followers (D. Goleman, 2011). Coach type of practitioners attend to each team member's needs and guide them and know the unique talents of the team members (Towler, 2019). They collaborate with the followers and encourage them to think independently (Towler, 2019). They can create climate in which information sharing, trust, healthy risk-taking, and learning flourish (D. Goleman et al., 2015).

Negotiator and manager: Practitioners good at negotiation can grasp the context, adapt with the changing situation, persevere, and show creativity to solve the problems (Bennis & Thomas, 2011). They tailor their activities to suit a particular situation (Luo & Liu, 2014). Practitioners with management skills can promote teamwork to achieve strategic goals (Rooke & Torbet, 2011). The least empathic are the ones who extremely rely on expertise. They strictly follow logic, use hard data for decision making but lacks respect for those with less expertise (Rooke & Torbet, 2011).

This research found that Le Corbusier was good at geometric building design but poor in anger management, active listening, mentoring and coaching, negotiating, and managing skills. Pierre Jeanneret was moderate in building design but very good in all the parameters of anger management and empathy. Pierre Jeanneret supplemented most of the anger management and empathic skills required for city identity creation that Le Corbusier was lacking. The results show that architectural design skills are necessary but not sufficient conditions for city identity creation. It hugely demands a higher level of anger management skills and empathy as well.

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SUSTAINABLE ARCHITECTURE AS A CITY'S IDENTITY

Role of Health & Wellbeing Criteria of Sustainability Frameworks

○Rajratna Jadhav*

Abstract

Nobel prize winner Amartya Sen alludes to identity being a plural, rather than a singular construct. Place of dwelling is also part of the identity of person. With the high amount of time we spend at our workplaces, dwelling can also extend to the work environment. Hence, identity can be associated with our workplaces too.

In today's race toward addressing climate change, how we design our place of work becomes critical. Considering the long working hours in offices, it makes sense to put the user back in the centre of the built environment rather than letting the goals of sustainability overtake the centrality of humans in architecture.

This paper aims to study two health and wellbeing frameworks—WELL Building Standard and FITWEL—by comparing them to identify their strengths, weaknesses, omissions and enhancements. The study brings forth a new hybrid set of criteria which address the weaknesses and omissions in one or the other framework making the hybrid framework more elaborate, more holistic, more inclusive and more detailed in its scope.

It is inevitable that today's highly mobile global workforce identifies a city with its healthy workspaces also than just with its physical, cultural and social identifications. Health and wellbeing in the city's built environment can be the new addition to the plurality of identity of which Sen speaks.

Introduction

"... we have to stress that dwelling above all presupposes identification with the environment. ... 'identification' means to become 'friends' with a particular environment. ... (Therefore,) Human identity presupposes the identity of place."

-(Norberg-Schulz as cited in Nesbitt, 1996)

In today's globalized environment, the dwelling that Norberg-Schulz talks about extends to the work environment since we spend most of our waking hours at our work place. Dwelling at home or dwelling at work, identification is key to human identity as seen above in the quote by Norberg-Schulz.

However, can identification be limited to iconography and cultural artefacts and art expressions? Economist Amartya Sen, in his book *Identity and Violence: The Illusion of Destiny* (Sen, 2006) speaks of the pluralistic nature of the construct of identity. Indeed, identity cannot be made of a single construct. Multiple issues go into the formation of identity.

Besides, the formation of identity can be a continuing process. Thus, identity alludes to multiple identities with regard to a person living at a certain location. One may associate with the history of the place; another may associate with the culture of the place.

In this larger definition of identity, one may also identify with a city's efficient built environment and may prefer to work in that city with her or his family. This enables the continuing formation of identity where an outsider may one vociferously identify with the place of his new residence due to the positives that the city has to offer. Among those positives can be a healthy work environment.

In today's globalized world, a healthy work environment is all the more beneficial not just due to the high number of hours that we spend in it, but also because it attracts highly skilled professionals to a city based upon its physical infrastructure and the quality of life that a city offers. A health work environment contributes to this quality of life.

In 2015 all member states of the United Nations agreed to an agenda for peace and prosperity of the planet and all its people. *The 2030 Agenda for Sustainable Development* had, at its core, 17

goals which are called the Sustainable Development Goals (SDGs) (<https://sdgs.un.org/goals>).

Each of these SDGs address one aspect of the larger agenda of peace and prosperity for the people and the planet.

SDG 3 relates to Good Health & Well-being of people. The world over, sustainable development frameworks have included health and wellbeing of occupants of buildings and cities as one of their primary criteria. In fact, there are now specific sustainable development frameworks developed for health and wellbeing of building occupants.

This paper examines two such frameworks, WELL Building Standard of the International WELL Building Institute (<https://www.wellcertified.com/>), and Fitwel Building Standard developed by the Centre for Disease Control of the United States of America (<https://www.fitwel.org/>).

Methods

The two frameworks are compared criterion by criterion to understand the differences in approach, objectives and methods of achieving health and wellbeing in sustainable buildings and communities.

Each framework is examined from the viewpoint of its approach, objectives and methods and is related to the 17 SDGs of the United Nations. Then the criteria of the two frameworks are placed side-by-side to make a detailed comparison.

The idea is to understand whether there are any criteria that need to be included in one or the other frameworks and whether further development of one or more criteria is required.

In the end, a hybrid framework is developed as a result of the comparative study. This hybrid framework includes some criteria that were not present in one of the two frameworks, and/or modifies some of the existing criteria to make them more efficient.

Literature Survey

WELL Certification aims at certifying the design of a building with considerations of air, water and light for the improvement of health

and well-being of occupants. “Spanning **108 features and 10 concepts**, WELL is a roadmap for improving the quality of our air, water and light with inspired design decisions that not only keep us connected but facilitate a good night's sleep, support our mental health and help us do our best work everyday” (<https://www.wellcertified.com/>). Each of the WELL criteria meet one or more of the 17 SDGs of the United Nations’ *2030 Agenda for Sustainable Development*.

The 10 concepts of WELL are AIR, Water, Light, Nourishment, Movement, Thermal Comfort, Sound, Materials, Mind, Community. There is an additional criterion that encourages innovations to achieve additional goals.

The FITWEL framework of the Centre for Disease Control of the United States of America takes a different approach. The framework encourages people to move, use public transport, eat healthy food, reduce exposure to harmful chemicals and to propagate healthy and sustainability living. In that sense, education and propagation are one of its important criteria. It has another important criterion of occupant surveys and stake holder collaboration in achieving good health and well-being, and has emergency preparedness as another critical criteria. In that sense, FITWEL seems to go beyond the goals of achieving health and wellbeing and enhances education, involvement of stakeholders and emergency preparedness.

Discussion

Both the frameworks seem to compare well in the areas of indoor environments, air quality, noise, clean water availability and so on. However, FITWEL seems to go beyond the goals of achieving health and wellbeing and enhances education, involvement of stakeholders and emergency preparedness.

WELL, on the other hand, has more detailed goals for achieving some of their ratings and includes some criteria which are absent in FITWEL. For example, WELL checks for the presence of Radon gas in the air in side a building, whereas, FITWEL has no mention of Radon gas.

WELL has detailed criteria for each of the 10 concepts at several levels where the designer has options to meet one of the several targets to get points. There are prerequisites and optional targets. Most targets are quantified making it a highly objective framework.

Monitoring and making people aware as well as involving people through feedback mechanisms and surveys enables a continual appraisal of new and existing design and systems bringing forth the need to improve some of the design and systems.

Fitwel is particularly strong in the area of movement compared to WELL. There are multiple criteria related to movement starting from access to travel to building entry design to having a gymnasium and much more. Different stretches of walkability enable higher points.

FITWEL also encourages the use of public transport and pedestrian connections from the building to public transport options. Bicycle parking, commuter survey, active commuter showers, Incentivising transit, access to open spaces, outdoor amenities, provision of playgrounds, restorative gardens, access to stairs, and more.

Food and nutrition are also critical in Fitwel. There are criteria that require the creation of a food and beverage policy with pricing incentives, choice architectural design to enable prominent displays to healthier food choices, and more. This includes having vending machines stocked with health food and with pricing incentives.

The emergency preparedness criterion of FITWEL is also elaborately worked out. There is criterion for having trained professionals available at all times, automated external defibrillator and an emergency address notification system.

Conclusion

Both the frameworks have strengths and weaknesses. While some criteria are elaborately defined and options are available for meeting certain levels of compliance, there is also the absence of some criteria or a alternative definition of some criteria in each framework.

Putting together both these frameworks will not only bring out differences between them, but will also enable me to compile a hybrid set of criteria that make the achievement of health and wellbeing of occupants more elaborate and more detailed.

The objective of this research as with both the frameworks is to bring the health and wellbeing of occupants to the forefront in the elaborate and varied milieu of sustainable design targets. Most of sustainability criteria are focussed on technicalities and quantitative levels of some objectives. Until recently, it was felt that in pursuance of sustainability in design and planning, the focus was shifting away from the user more toward technical and quantitative targets with regard to climate change.

These frameworks have brought the health and wellbeing of users back to the centre and, in fact, created its own space within the larger realm of sustainability.

In the era of globalization, a city with healthy citizens offers higher productivity and higher efficiency in its work potential. A healthy citizenry offers a better chance to go about daily life including cultural and ritualistic routines.

In today’s times, it is not just cultural identity that defines a city, it is the health, work ethic, transportation systems, and general quality of the physical environment that makes the identity of the city.

In such a wider definition of identity, a healthy work environment is a key component of contemporary local identity in a globalized environment.

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Keywords: **Identity, Globalization, Health, Wellbeing, WELL, FITWEL**

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THE ROLE OF ARCHITECTURE IN DEFINING THE IDENTITY OF THE CITY

Creating balance and harmony between the Physical and Metaphysical essence of the city

○Rashika Abeyawardana*, Pabalu Wijegoonawardane**

Abstract

Asian traditional systems aimed for balance and harmony in people and architecture. Traditional systems included physical and metaphysical elements perceived beyond the 5 senses. Believing that problems arise from an individual, building, or city being out of balance, traditional systems realigned and consecrated physical and metaphysical elements for optimum living situations. City identity is dynamic and should not be forcefully implemented as a personality. A city reflecting the need for individuals and their personalities will be a lopsided rather than wholesome identity. Contemporary people, buildings, and cities need harmony and balance restored. A modern city should assist in this recovery.

Keywords: Consecrated spaces, City identity, Personality, Pancha-bhutha elements, Metaphysics

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“TO BE OR NOT TO BE”???

Identity Imprints of Chennai City

oDr. Priya Sasidharan

Abstract

The innate query on what and who defines urban identity forms the primordial crux. A literature review profiling contextual perception of identity in its timeless and ephemeral quotient draws preliminary grounding of this research. The components and constructs of identity in its temporal dimensions revealed in the study of Chennai city outline a classification system and a matrix of connectedness. The spirit of place is analysed in its trajectory of traditional connotations, contemporary interpretations, identity crisis addressal to negotiated trade-off dynamics. Interpretation of developmental strategies, social memoirs, politics of power and directed morphological renderings emerge as indelible imprints of identity.

Introduction The city is a spatial metaphor and the image it exhibits is history, culture and civic pride embodied in time. The city and its repositories provide the landscape for imbibing the experiences of the past and the architecture of the present is a medium to paint strong images, physical and visual with an indelible mark of identity that transcend the future. A city presents a larger-than-life canvas of its places, people, expressions and their interactions.

Cities are vying for the branding arena, podium of western univalence and the transition has been synchronous with a swing from crisis to a loss of identity. Unbridled urbanisation and indulgent globalization have resulted in cities recognizing the importance of bringing in coherence and cohesion in the urban fabric. The traditional roots having been forgotten, vernacular neglected or unknown and semantics disregarded, cities tend to morph as mere clones, repetitive models, generic imprints reflecting the advances of technology, digital explosion and race to branding. The future of urban identity stands as an enigma, an illusion or does it tend to being a mirage?

Presentation Summary The conception or perception of urban identity is a truthful representation of life, memory and experiences of the people. Urban identity rendition created through an ensemble of art, architecture and culture has to be rooted in the indelible local flavour and fervour that symbolises the innate recognition as a city. The crux of the paper is to study what contributes to identity, its elements, influencing factors, constructs and the syntax by which these combine and connect.



Figure 1 – Place Identity: Spirit of Place “genius loci”, Author

Indian cities with its profound heterogeneity, ingrained order in the perceived, popularly interpreted and termed as “chaos” and spiralling urban growth envisages future of urban fabric with immense potential that can resonate the positive facets of change in its owned ethnicity. Place in its natural networks or order of nature, topographical profile and landscapes of existential being resonate the primordial layer of identity embodied in the spirit of place (Figure 1).

Place being the container, people as the contained, contents become the events, activities and developmental inputs. The future of any growing city should hold a conducive, adaptive flexibility which can absorb the ravages of time, ramifications of urban change and still have an indelible shade of the identifiable past. The responsive urban ensemble that eventually emerges should reinforce specifics of unique identity amidst a flood of generic global images.



Figure 2 – Place names – Element of Urban Identity, Author

The investigation of concept of urban identity in its evolution and emergence, the dimensions of space and time, place embodied in spirit and soul reveals the process that Chennai city has traversed. The collages of time, constructs of people and power, placing names and naming places (Figure 2) constancy of change; impacts and imprints on the larger picture of urban identity. The tussle between what to hold, imbibe, adapt or let go fructifies the context of the research paper demonstrated in the study of Chennai city.

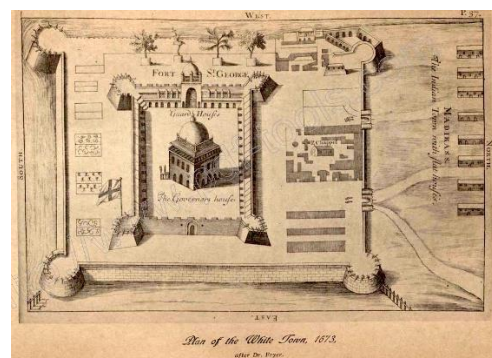


Figure 3 – White Town, 1673, Love H.D. (1988)

Identity studies has to address across multiple disciplines for analysing the gaps, lacunas and thereby deriving the connect and hence methodology. Identity has been delved from varying perspectives, and the concept of place and its significant focus has its interrelations to collective memory, perception and culture. The grounded base in phenomenological studies has created a niche domain in reading, analysing and interpreting place identity. Phenomenological approach through works of Relph, Heidegger, environmental perception and topophilia studies by Yi Fu Tuan outlined the selection of tools, methods and structuring of methodology. Mental mapping, imageability rendering works of Kevin Lynch, analysing and profiling the character of places by Worskett further attributes pointers to the gamut of identity-based research.

Transformation and the connect, ravages and changes in time is a crucial component of urban identity as the city is an organism and pulsates with life. Chennai city has a glorious legacy even before the onset of colonial rule traced from maritime trade. The identity visualisation and rendering of erstwhile Madras, pre colonial era had a complex human settlement system, order of nature, socio-cultural embodiment in constructs of place. The earliest traditional temple settlements, configuration and conglomeration of villages that paved directives and reflections to understanding sustainability as a way of everyday urbanism has to be showcased in research. The innate emphasis on temporal dimensions aids in recording the timeless and the ephemeral identities, the cause-and-effect theory and the defining attributes beyond form, function and architecture.

The path etched by architecture of the built fabric and its contribution to identity gives a lucid clarity to time, space, events and politics of power. From the humble beginnings of hamlets, temple settlements, maritime glory to colonial and post-independent era, the architecture rendition not only identifies a proclamation of tangible manifestation of style, but when analysed further culls a compendium of intangible indicators, matrix and dynamics of power. The foreign influence from invasions, its permutation and combination showcased in the styles of built fabric, emergent typologies and spatial connotations reverberate the query “to be or not to be”??? The shift of equilibrium from purist colonial to ethnic and Indo Saracenic style of architecture further accentuates the holistic definition and domain of identity. Who renders urban identity, what is rendered, where and how is it rendered???, being the constant query that gets its addressal in the process of studying the agents, events, people, power and the constructs of time on place.

Documenting from a compendium of oral, narrated and recorded histories, interaction with people, understanding of flows and spatial connotations forms the preliminary stages of the research design. Surveys and interviews, perception-based understanding, visual analysis, mental mapping and imageability attributes quoted and recorded from respondents outline the methods employed to decipher and sieve the generics. Anecdotes, events, connect through collective memory has been applied to reveal the specifics.

The research outcome reveals the innate matrix of connectedness, multiple layers of relationships, developmental intervention and design process that a city undergoes in its quest for identity. No singular model or prototype can become the axiom, while exclusivity reigns in urban identify studies to which Chennai city becomes a unique representative case study. The contribution to research is specifically rooted in

classification system to read and analyse urban identity, contextual collation and a derivative outcome that could further be demonstrated and applied as a model with specificities. The indelible contributors, influencing agents of change that impact urban identity revealed through place, people and power through temporality becomes the crucial contribution in research.

Keywords: urban identity, representation, perception, construct, syntax.

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कंकर कंकर में शंकर Marking Sacred within Public Realm

Shruti Barve*, Pallavi Latkar

Abstract

Concept of Shiv ie auspicious, pure, blissful is familiar to Indians. Often it is the village deity, named after the village and its temple, typically flanking the water body. Following paper presents three sacred places along water bodies,

Ujjain, Mahad, Sheva,

These Developmental projects are initiated by government authorities and funded variously through local or international agencies. Multitude of issues are being tackled while galvanising the Identity of the old town. Also mentioning role of various authorities facilitating the development and Role of architect spelling out salient features inherent to the site and possible to explore through available project definitions.

Introduction

Ancient civilizations on the Indian Subcontinent are devoted to Shiva. Concept of शिव ie auspicious, pure, blissful is familiar to Indians and they have manifested it in various tangible forms. One of them being the village deity (e.g. Vireshwar, Parleshwar, etc) often named after the village and its temple, typically flanking the water body. Following paper presents three places, where Grassroots Research Consultancy acted in the role of landscape architect participating in the process of development currently happening. These three sites are in India, ranging in size and scale, where the nucleus of the town or city is such a temple precinct by the natural waterbody. Each one of them has their own trajectory of developmental challenges. The search for sacred within the mundane is a continuous process relevant in today's time, and in range of locales. In contemporary times through sensitive interventions, current issues of crowd management, health of the water body, sanitation, safety etc. are being tackled while galvanising the Identity of the old town. Also mentioning role of various authorities facilitating the development and Role of architect spelling out salient features inherent to the site and possible to explore through available project definitions.

1. Ujjain, Mahakal, Landscape development at Rudrasagar and Maharajwada Adaptive reuse

Ujjain is historic city. Prominent for its geopolitical and trade potentials throughout history. Mahakal is the most prominent deity of Ujjain, hailed as lord for many centuries. References to Ujjain being teerth are found in ancient Indian literature.

2. Mahad, Vireshwar temple, temple tank and the grand annual Jatra 'Chabina'

Mahad is also a historic town, with navigable river and active trade for centuries. Vireshwar is the most prominent deity of Mahad and is referred as Vireshwar Maharaj. References to this temple are approximately 1000 year old however the present structure was constructed around 400 years ago.

3. Sheva, Shankar and Series of Ponds in JNPT site, deserted but not forgotten village

Sheva on other hand was predominantly a coastal village having fishing and agrarian occupations. Due to its strategic location useful for modern day port activities, lands of Nhava and Sheva villages were acquired by the port authorities and villagers were relocated. However their traditional village deity still remains at the original site and it is worshipped by the villagers.

Methods

Scale of Public Place and the City
Activities
Public Space
Role of Communities
Administration/Governance
Challenges and Design Strategy
Interventions

Scale of Public Place and the City

Ujjain

Ujjain is tier 2 city in Madhya Pradesh. Situated on Malwa plateau on Banks of river Kshipra. Ujjain also known as Avantika or Ujjaini is one of the oldest cities in the history of the subcontinent. It finds its mention in religious manuscripts, as well as Roman travelogues. Kalidas describes Ujjain alias Avanti in his long poem Meghaduta as a sight not to be missed. He implores the cloud messenger to take a detour so as to witness the sunset and Aarti at Mahakaleshwar. Tone of his verse is similar to the proverbial saying "he who has not seen Rome has not seen anything"

It was also one of the seven janpads of ancient India. There was a time when this city was the capital of a big empire and a central transition point of the land and water trade route. Ujjain has served as a centre of science and culture in northern India. Since the fourth century B.C.E., it has served as the first meridian of longitude for Hindu geographers.

Ujjain is one of the four most pious sites for Hindus where Simhastha or Kumbhmela happens every 12 years. Approximately 75 crores pilgrims visited the 2016 Kumbh at Ujjain. Daily footfall in the temple precinct is approximately 25 lakhs on an average.

Mahad

Mahad is a secured harbour as River Savitri meets the Arabian Sea near Mahad. River is navigable thus making Mahad an important place for trade since the Buddhist era. However during Chhatrapati Shivaji's Regime Mahad came to more prominence due to its proximity to Fort Raigad. Vireshwar is the presiding deity of Mahad. Chhatrapati Shivaji Maharaj was also a devotee of Vireshwar and there are many references to that fact. Chabina is an annual festival at Vireshwar Temple. It is culturally vibrant and involves people of different communities from 84 villages in the district. People travel distances to attend the festivities. Rituals and traditions carried out in this festival are remarkable examples of social engineers achieved by traditional communities. Population of Mahad is close to 2 lakh which multiplies many fold during this five day festival.

Sheva

Sheva village is abandoned by its people as their lands are acquired for JNPT port development. Approximately 3000 people are relocated to the new Sheva Village. At the old village site however one family resides for upkeep of the temple and on Mahashivratri day close to 5000 people visit Shiva Temple of Sheva which is adjoining three water bodies over flowing into each

Administration/Governance

Ujjain

The redevelopment of the Mahakaleshwar area as the core focus of the city's efforts. The objective was to sustainably increase the carrying capacity of the area while enhancing the cultural experience of pilgrims and tourists and preserving/ restoring the public spaces and temple precinct. To achieve this following administrative set up is put into place to pioneer the mega scale urban rejuvenation work.

Smart Cities Mission (SCM) is peer heading the work through Mahakal Rudrasagar Integrated Development Approach (MRIDA) project. Distributed into three phases. The second phase of the project, MRIDA-II, is co-financed by the CITIIS (City Investments to Innovate, Integrate and Sustain) program. CITIIS is supported by the Ministry of Housing and Urban Affairs (MoHUA), Agence Française de Développement (AFD) and the European Union (EU). The aim of the project is to provide financial assistance by way of grants and technical assistance through international and domestic experts. The project is being coordinated and managed by the Program Management Unit (PMU) at the National Institute of Urban Affairs (NIUA) in New Delhi.

In all, more than 100 'Mitigation Measures' across 19 'Impact Types' were identified across 48 sites contained within the project boundaries.

Mahad

Vireshwar Lake Conservation Project is funded by Vireshwar Temple Trust and State Government through Mahad Nagar Palika being an executive agency. Conservation and beautification project have been proposed for the Vireshwar Lake primarily focusing on lake rejuvenation and conservation of lake edges, providing facilities and infrastructure for the public entertainment and utility and also enhancing the aesthetic of the area. In addition, the project also includes components for improving the water quality and ecological value of the lake.

Sheva

Sheva Shiv Mandir comes under jurisdiction of JNPT authorities. Series of Lakes in front of Shiv temple were taken up for the Project meant for Rejuvenation of Water bodies Within JNPT.

Conclusion

Pure water deemed as sacred through ancient times needs to get reinvented through contemporary interventions. As health of water body is directly affecting success of immersing public spaces. Also sustainable water body marks presence of sacred within the mundane.

Keywords: **SCM, MRIDA, Water Front, Adaptive Reuse.**

URBAN BROWNFIELD AND DISTRESSED NEIGHBORHOOD

Sustainable Regeneration of Khulna Newsprint Mill, Khulna
○Tanha Tabassum tisha

Abstract

Khulna, the third largest metropolis in Bangladesh was an important center for trading and industries during the 50s and 60s. From the late 60s, the political shifts caused the rapid decline of the industries, resulting in urban brownfields finally. Khulna Newsprint mill is such kind of brownfield, closed in 2002 leaving a total of 6000 workers and employees unemployed with the hope of reopening. Though 16 years have passed, they are passing their days with the hope of launching the mill again next to the mill area with multiple deprivations in socioeconomic aspects. In such a context, the present government has drafted a new industrial policy (2010) that indicates investing more in the State Owned Enterprise to reopen only. Without any regeneration scheme, the strategy of reopening isn't working in developing countries like Bangladesh. The research focuses on how the urban brownfield can be sustainably regenerated for the benefit of distressed neighborhoods. The research will first identify the socio-economic need of the distressed neighborhood and then investigate Brownfield's spatial and physical resources, which can be useful for sustainable brownfield regeneration. It is expected that this research would develop a sustainable regeneration framework for urban brownfields which will be beneficial for distressed neighborhoods of the brownfield and provide recommendations for developing policy guidelines specifically on brownfield regeneration.

Keywords: Urban Brownfield, Distressed neighborhood, Sustainable regeneration

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SUSTAINABLE GREEN NETWORK DESIGN IN HANGZHOU, CHINA: LESSONS FOR THAI URBAN COMMUNITIES

o Pachankoo Maneratt¹ Prof. Sheng Zhongwei²

Abstract

Nowadays, Thailand tends to become more of urban communities just like many countries have gone through. This cause many environmental problems. Using Hangzhou as a case study, this article has brought up the problems Hangzhou faced in China before, was able to solve these problems and created the sustainable green network which exists till now. The objective is to study the structure of the green network in Hangzhou that leads to sustainability. And to represent the concept of this sustainable green network to the urban communities in Thailand. The study has shown that there are 2 main facts that made Hangzhou a success. (1) Resource management with a systematic plan. There is an organization that is responsible for clear supervision, resulting in continuity in operations and follow-up. And there are various measures that can make people follow the guidelines in concrete ways. (2) Green network designing that focuses on every detail and emphasize safety, accessibility to all types of users (Universal Design). Including the selection of plants and good materials resulting in beauty effects as well as long-term care.

Keyword: Green Network, Sustainable, Urban Community

Introduction

The definition used to define a particular city area of each country is quite different from the other. Some countries use the numbers of population in one area as indicators and some countries use density. Or using population per square kilometer to define the meaning of city (Prutikarnkij, 2015). Therefore, "urban community" means the place that humans settle together by changing the original natural environment to a new environment created by humans in order to facilitate the social life (Kulchorn, 2002). It is a community with a large population density, housing and buildings density. The civilization in science and technology environment that is man-made rather than something that happens naturally. Career is diverse and mainly related to the industries, trading and services (Usavagovitwong, Sapu & Chairatananonda, 2012). Resulting in the development of both utilities and utilities which accelerates the growth of the city (Chotthong & Poti, 2015). There are road networks linking the city. Various activity zones in the urban areas can be reached. And there are green areas and spaces that are designed in consistence with human-scale (Rungsawang & Suttasupa, 2017).

According to the UN-Habitat report (2011), it was found that the ratio of the global population living in urban areas is higher than in rural areas for the first time in history. And the estimated increase in population is found that by 2050, the population of the world will increase by 66 percent (United Nations, 2014). Over 50 years ago in Thailand, after the announcement of the National Economic and Social Development Plan that aims to spread prosperity to the main cities in various regions. It caused various cities to develop infrastructurally by the public and private sectors. As a result, more immigrants from the countryside came to live in the city. Making Thailand more urbanized (Office of Natural Resources and Environmental Policy and Planning, 2017, p.2-5). Settlements in dense

communities without control made the city that should be beautiful become a crowded city. All these has resulted in the environment of rural communities and urban communities unsuitable for living, insufficient public service, waste of budget in community management. There was no planning for settlement and advance growth. There was no prevention of problems that will occur. This led to endless solutions and an unsustainable urban development (Piromruen, 2006-2007).

From the disclosure of the annual report 2013 of the Netherlands Environmental Assessment Agency, it was found that in 2012, China was the world's No. 1 emission of carbon dioxide by over 70% (Olivier, 2013). Although China is the top country in the world that consumes large amounts of energy. But Hangzhou can be one of the models of environmental management under the face of climate change in various metropolises to contribute to the sustainable quality of life of the city (Suaye, 2014). Moreover, Hangzhou has focused on nature and eco-systems, aimed to maintain a good environment, focused on the construction of clean buildings and industries so that the city receives many global awards such as "International Garden City", "UN Habitat Award", "The Best Chinese City for Commerce" by Forbes magazine and "The City with the Best Investment Environment in China" by World Bank, etc. (Kritaya Nawat, 2010).

Therefore, the study of green networks from a city that has experienced problems with the environment and as a result of becoming a city that can solve and develop the environment to be sustainable, is necessary for today's Thai urban community to help alleviate environmental problems. Connecting the various areas of the city as well as helping increase the livelihood of the city.

The content of the study will consist of 3 parts: The first part is the study of related concepts or theories. The second part is a detailed study of green network, including factors that

contribute to the success in the sustainable environmental development of Hangzhou. And the third part is to use lessons from the case study of Hangzhou City to be adapted to the Thai urban community context.

1. The purpose of the article

1.1 To study the composition of green networks of Hangzhou city that leads to sustainability.

1.2 To present guidelines for green networks that is sustainable for urban communities in Thailand.

2. Literature Review

2.1 Green network

Green network means a system connecting various types of green areas together to be the basic structure of the city (Inchompoo & Srithanyarat, 2017). It is a landscape path with different widths, by connecting to each other as a network as well as road and highway networks. Generally, linked to the park, cultural and historical areas, or natural and environmental preservation areas, or other reserved areas (Fabos (1995) as cited in Danwandee, Kongboontiam, Brzuszek, Duanglampan & Riabroi, 2013). The role of the green area network in that city has many roles. It is a recreation area, an area to create ecological balance for the city and to support and prevent natural disasters (Inchompoo & Srithanyarat, 2017). Which can be developed in many different ways (Tuner,1995) there are,

1. Parkway: the route that links to the park with beautiful landscapes for recreation.
2. Blueway: the waterfront path, sea canal for recreation and nature preservation, ecology, habitat for aquatic animals And store water for use in the city.
3. Paveway : a foot path that has paved surfaces to prevent trampling in the path and facilitate the activity linking.
4. Glazeway: a link between the activity areas in the business area.
5. Skyway : an elevated path above the ground, with a continuously connected landscape.
6. Ecoway : a path that focuses on nature and ecosystems in the area or linking urban forest areas.
7. Cycleway : the route that is used for traveling by vehicles that do not use the engine, to reduce energy consumption, reduce global warming problems and the heat dome of the city.

2.2 Sustainability

The tendency in urban development in various countries around the world in the late 20th century have changed the development paradigm according to Modernization Theory to a sustainable development. Not wasting or destroying natural resources. Therefore, the current trend of development in the 21st century is sustainable development (Piromruen,2006-2007). The World Commission on Environment and Development (1987) has given the definition of sustainability as “development that meets the needs of the present without compromising the ability of future generations to meet their own needs.” In addition, there are guidelines for Sustainable Human Settlement. To be a

solution to the problems of urban degradation and the environment (Agenda 21 for Sustainable Development) for each government as follows (Anambutr, 2004)

1. Prepare housing, facilities and various areas.
2. Use local materials Energy saving and Renewable Energy.
3. Organize city planning to reduce long-distance travel and support public transportation.
4. Reduce poverty by supporting small economic sectors.
5. Reduce migration to large cities.
6. Settlements must reduce the risk of natural disasters.

Other ways of driving sustainability of interesting cities include 2030 SDG: Sustainable Development Goal. Or goals for sustainable development aimed at achieving by 2030. And has focused on issues 5P (s) which are People, Planet, Prosperity, Peace and Partnership. Especially, in goal 11 that is directly related to the city is Goal 11: Make City Inclusive, Safe, Resilience & Sustainable The goal is to make the city a city of everyone. Promote dynamic and sustainable concepts (Marom,2017).

3. Hangzhou City

Hangzhou (杭州) is the capital and largest city of Zhejiang Province (浙江省) is in the East of China, with a total area of 16,596 square kilometers (Poolsawat & Yenbamrung, 2017). And the total urban area of approximately 3,068 square kilometres. Most areas are surrounded by mountains. There is the Xihu Lake, an important symbol of the city (Kritaya Nawat, 2010). It is the second-tier city according to the stratification of Chinese cities (tiered city system) that are divided into 4 tiers, using criteria from GDP, politics and population, which the second tier cities. This will be a city that attracts more investment. There are areas in this city that have very high economic growth. And consumer behaviour is developing rapidly (Khadkarnklai,2017). Which has details as per Table 1.

Table 1. The stratification of Chinese cities (tiered city system)

Factor	1st tier cities	2nd tier cities	3rd tier cities	4th tier cities
GDP	With a total GDP of more than 300 billion dollars	With GDP between 68 billion US dollars and 299 billion US. dollars	With GDP between 18 billion and 67 billion US dollars	With a GDP of less than 17 billion US dollars
politics	Federal direct control	The capital of each province and the city that is second to the capital	The capital at the district level (prefecture)	County level city (country)
population	over 15 million people	3-15 million people	150,000-3 million people	less than 150,000 million

Source: Adapted from Khadkarnklai,2017

Hangzhou, which has a history of more than 2,000 years and is well-known for the Liangzhu culture, silk culture, tea culture, and many tales handed down to become its cultural assets. The development of Hangzhou is a good example of integrating culture as a key tool for promoting sustainable urban development, by preserving urban, environmental and cultural

identity, attracting activities and visitors, fostering the development of the creative economy and improvement of the quality of life (Zhang, 2015).

3.1 Green Network of Hangzhou City

In this study, the nature of the Green network of Hangzhou city will be divided according to Tuner (1995). The details are as follows

3.1.1 Parkway

There are routes designed for people of all ages (Universal Design), can easily access the park. In the case of areas with different levels, there will be designed to have both stairs and ramps to bring a wheelchair or bicycle into. Including the design of routes to support the visually impaired. The use of paving materials that have a rough surface to prevent them from being slippery in the event of rain or wet ground. There are facilities (Street furniture) along the route, such as signs, trash cans, electricity, etc. The design of these routes emphasizes strength, durability and shows the local identity. Along the route, there are selection of plants that are locally available, has a high trunk size and a natural shape, with little trim. There are canopies that can give shade to people who travel on the route. In some areas, the plants that can change colors according to the season are used in order to create a different atmosphere and beauty.



Fig.1 Parkway

3.1.2 Blueway

There are many waterfront routes, such as the canal in the city area, with a small path, rivers, lakes with a larger route, respectively. Designed to be able to touch the beauty by sight-seeing but prevent access to touch to prevent danger. Some places link one area to the other with a beautifully designed cross bridge and shows local identity. Some waterfront corridors can walk under the bridge to cross to the other side of the road. Use paving materials with rough surface texture to prevent slippery in the event of rain or wet ground. There are various facilities that emphasize the use and decoration. Most of the plants used on the waterfront are trees, characteristically shaped, downward, and are local plants. For example, willow

trees or canal area, some water plants are grown to decorate and to adjust water quality etc.



Fig.2 The canal with a small path



Fig.3 The rivers with a larger route

3.1.3 Paveway

Almost every sidewalk in Hangzhou has floor coverings to prevent stepping on plants including facilitating for walking. In public areas, there will be a pathway for visually impaired people without obstructions. Flooring will have a rough surface to prevent slippery in the event of rain or wet ground. And most choose the color that is truthful material (natural color of the material). For harmony with the environment and easy to maintain cleanliness in some important areas, there will be an expression of the identity or image that is symbolic to the city inserted in the corridor perfectly.



Fig.4 Pathway



Fig.5 truthful material

3.1.4 Glazeway

It is a link between the activity areas in the business area. Routes in business areas or trading areas. From the study found that there are 3 types.

Type 1: route along the road will have different elements like a typical pedestrian route but with a wider path size.

Type 2: The path is a courtyard in front of the building to open the view with space or a beautiful garden. Most of them are located in the business area or large commercial area. The general public can use the space.

Type 3: It is a large courtyard linking one area to the other. The courtyard is both an open courtyard for people to do some activities in the city and a garden with decorations. In some areas, it is a garden or a courtyard, and there are various shops on the basement like a park, or the activity area of the city. The surfaces of these three links are also covered with a rough textured material. And also bringing the identity of the city as well as choosing to use plants found in the local area for it's decoration.



Fig.6 Glazeway, Type 2 Fig.7 truthful material

3.1.5 Skyway

This type of route can be found in the community areas with heavy traffic or commercial area. And in a place that does not block the scenery of the city. There are both open-air and back-covered styles. Some places also use escalators as well. The crowded community areas and roads that are very wide or large

split. Skyway is designed to be able to depend on the number of intersections in order to provide convenience and security for users. The materials that are being used emphasizes strength and maintenance keeping.

3.1.6 Ecoway

It looks like a pathway that is laid with materials that have a rough textured outer layer and use colors in harmony with nature. Focus is on durability and ease of care. Two sides of the roads are flanked by plants found in the local area, with a little decoration or natural decoration, suitable for walking. In the case of a long corridor flanked by a car, street furniture, for example, bus stop with accommodation for waiting, periodically signs. And in the case that it is a way to connect to a tourist attraction that has an ecological or natural environment, the walkways are slightly decorated or decorated with materials that harmonize with nature as much as possible and can be reached on foot only. There are street furnitures, such as benches, lights, trash, various signs to facilitate the appropriate points.



Fig.8 Two sides of the roads are flanked by plants

3.1.7 Cycleway

Because the local government encourages people to use bicycles, therefore designing and constructing routes to be easily accessed by those who use bicycles. From the study, it was discovered that there are 2 bicycle paths. The first path will be a route for particular bicycles. Another path is a shared style between bicycles and motorcycles which is designed to clearly separate from the car route by using symbols or different forms of barrier for safety of users. And throughout the path, there are no obstacles that are dangerous.



Fig.9 Cycleway



Fig.10 Barrier for safety for users

4. Summary of the overview of Hangzhou's green network that leads to sustainability

4.1 Area connection

There are plans for designing or solving problems in connection with good areas, making access to various areas convenient and safe. From the study can be divided into the following ways to connect the area of Hangzhou city:

1. Road connection, with crosswalk designs and traffic lights for pedestrians or cyclists to cross the streets covered throughout the city. In addition, the area under the bridge over the large water source will be designed for connecting routes to be able to walk through each other.
2. Over roads or rivers connections. There are both overpasses and bridge designs. The overpasses and bridges will be found in the spot where the traffic is much and not obscuring the beautiful scenery of the city, with strong structure and materials that are easy to maintain. Both as open space and covered. For the bridges over the canal has a design that reflects the identity of the area with the form of colorful materials. There are various elements but still materials that are durable, strong and easy to maintain are chosen.
3. Underground connection: there is a passage design for people to cross the road to another side. The passage for this crossing will be a long tunnel. The interior is designed with beautiful decoration and designed to be safe for users during various periods. Most of them are found in communities with large roads.

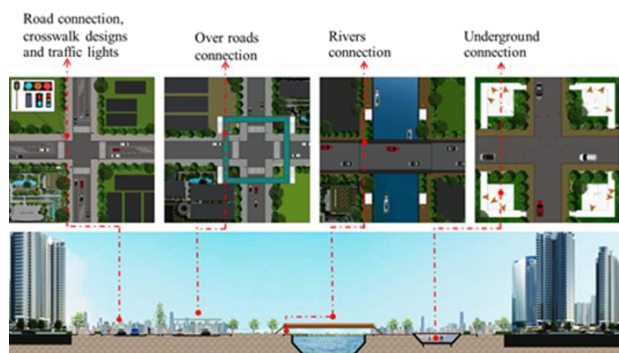


Fig.11 Area connection

4.2 Space

In the center of the business, community, or government buildings, there will be a "space" that looks like a plaza for supporting the activities of people in the community. Or parks for recreation. There are shops, restaurants down the basement. This add freer space or green space to the city, along with economic development perfectly.

4.3 Landscape elements

4.3.1 Plants

There are designs and plans for choosing plants. They are as follows.

1. There is a selection of local plants. This makes it easy to maintain. Some kinds of plants can change color or there are beautiful flowers that change with the seasons, affecting the beauty of the city.
2. Large perennial plants are planted on the streets or walkways everywhere in the city, to provide shade for people. It is to create an atmosphere for walking or cycling, including helping to preserve the ecosystem for the city by choosing to use a beautiful natural canopy trees that don't have to be trimmed.
3. In the waterfront or canal areas, we will mostly see the introduction of "willow trees" which is a plant that represents Chinese identity.
4. The big trees that are used to decorate the road has insect protection to destroy the wood. Including, good maintenance that keeps the trees in good condition and are always beautiful.

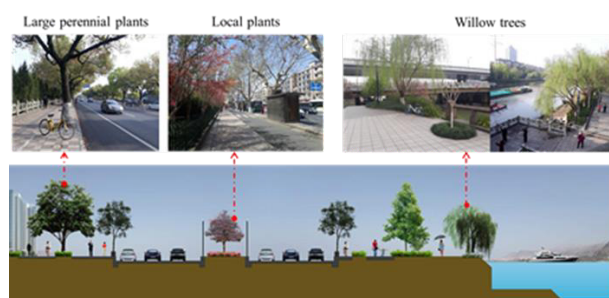


Fig.12 Plants

4.3.2 Material

There are various materials that are considered for use as follows.

1. Safety for users such as, the use of floor coverings, corridors that use rough texture surfaces to prevent slippery.
2. Durable, strong and easy to maintain.
3. In many areas, use materials that shows the identity of the local area, such as woods, stones that are designed in Chinese style or the form that represents Hangzhou.

4.3.3 Street furniture

Every route has a selection of Street furniture that is designed and a suitable amount for the area such as, electric lighting, benches, signs, bicycle parking spots, trash cans, as well as public restrooms in several spots. Mainly focus on facilitating the people who are traveling in the main ways. And some

street furniture are designed to convey the beauty of the local identity.

4.3.4 Maintenance

From the study, we found out that taking care of various elements in the Green network of Hangzhou city can be summarized as follows:

1. Selection of materials or plants that do not require much maintenance
2. There is always protection for keeping plants strong and beautiful.
3. Materials that are selected are strong, durable to use and don't need to be repaired frequently.
4. Each zone has a strong and systematic organization responsible for maintaining the landscape of the city, making the city condition clean and beautiful.

5. Factor to support sustainability

5.1 Concepts in urban development

Since 2002 onwards, Hangzhou government has implemented a project to maintain the environment of more than 605 projects. And there is a continuous urban development plan in order to have green areas in the city. Improving the landscape of the city, increasing green areas on the sidewalks and river sides and adding more public park, which resulted in the present city of Hangzhou being successful in both tourism and sustainable green cities. (Office of Natural Resources and Environmental Policy and Planning, 2017, p.7-1). In a private land, land maintenance and use are by the right of the owner but there are some laws that are still limiting certain rights. Including the part about increasing the number of trees. In addition, there is area management in a manner that controls land use for the development or preservation of the city as follows.

5.1.1 Zoning

Due to the economic progress that has occurred, Hangzhou city has developed into an urban. And the demand for basic utilities was growing rapidly. Causing a concentration of crowded populations in urban areas. Therefore, to solve the problem of congestion and spread development into the suburbs and rural areas. Including to develop Hangzhou City as Smart City. The government then created the Hangzhou Master Plan to create a systematic approach. One of the important issues is the determination of a specific new economic development zone, separated from the old town with cultural and community heritage, to focus on the serious development of each economic sector. And avoid creating impacts on the environment, including the urban people's way of life. There are 3 new economic zones which are Hangzhou Economic & Technological Development Zone (HETDZ), Hangzhou Export Processing Zone (EPZ) and Hangzhou High-tech Industrial Development Zone (HHTZ) (Poolsawat & Yenbarmung, 2017). In various economic development zones, there will be a total of 20 new cities. There are many new cities that have been promoted to be the centers with specialized expertise such as,

Uighur District (Silicon Valley Development Zone), Fuyang District (Comprehensive drug production center), Tonglu Industrial Estate (Intelligent Safety Industrial Development Zone), Longyu District (Longjing Tea Development Zone), Xiecheng District (International E-commerce Development Zone), Pingjiang District (Internet of things development zone), etc.

5.1.2 Building controlling

In some areas of Hangzhou, there is a limit on the height of buildings and houses. In order not to obscure the beautiful scenery of the city. For example, around Xihu Lake area, located in the heart of Hangzhou city which surrounded by various important places. In the past, this lake was abandoned. Until the local government had a serious plan to develop the area. Starting with moving people who were living around the lake out to another location. And built 4 parks to provide quality green space and also issued a law prohibiting the construction of large buildings in the Xi Hu Lake area (Office of Natural Resources and Environmental Policy and Planning, 2017, p.7-2). With its historical significance and beauty, in 2011, this lake was registered as a World Heritage Site by the 35th World Heritage Committee meeting in Paris, France, in the name "Cultural Landscape, West Lake in Hangzhou", etc.

5.2 Concepts in urban development

Hangzhou's main transport modes include car, bicycle, bus, taxi, bus rapid transit (BRT) and waterway transport. Banister & Liu (2013) have studied and found that the transportation sector accounted for about 8 percent of Hangzhou's overall carbon emission (2008), and given the high and increasing rates for travel demand and private car ownership, this share is likely to further increase (Shi, 2010). Especially, transportation in the city that emits carbon dioxide (CO₂) tremendously. The local government then tried to find ways to reduce CO₂ emissions. There are 3 ways (Sathitpongsothaphrom, 2017)

5.2.1 Non-Motorized Transport: MMT

Traveling without using an engine which is walking and cycling. Considered as the main transportation policy in Hangzhou. In 2008, the Hangzhou government launched the first Chinese Bike Sharing System. And it is the largest bicycle rental system in the world (ICLEI (2011) as cited in Suaye, 2014). Both people in Hangzhou and tourists can rent bicycles and ride on bike lanes (Bike Land in a distance of over a hundred kilometers. All the bicycle rental systems in Hangzhou are designed, implemented and budgeted by local governments. They are used to cover the last kilometer from public buses to destinations. Nowadays, the Bike Sharing System offers a wider variety of services, there are more convenient payment methods due to the investment of many private companies. By using the QR code or paying through various apps. And do not have to bring the bike to park at the parking lot like the old system.



Fig.13 The Bike Sharing System

5.2.2 Public transportation development

Hangzhou City has developed a variety of travel modes for public transportation for urban people. There are 3 main forms to facilitate the people in traveling and to promote the reduction of personal cars

1. Subway; there are 4 lines of service now. And in the future, there are plans to build to cover the entire city.
2. Buses; there are both regular buses and electric buses, and BRT running around the city. Moreover, there are also public electric vehicles to the community areas that are difficult to access.

3. Taxi, charged by meter. And there is also a service to call passenger cars through apps named Didi Chuxing

5.2.3 The use of alternative vehicles supporting

Using alternative energy vehicles is the best way to help reduce energy consumption and reduce CO₂ emissions. IN 2010, the government had issued measures to support people who buy alternative cars in 5 major cities. There are Shanghai, Shenzhen, Hangzhou, Changchu and Hefei. Later, there was a development framework called “Subsidy plan for Private New Energy Vehicle Customers in Hangzhou” To facilitate the people that use alternative cars. And also, there are plans to build infrastructure for alternative energy vehicles and battery charging stations as well.

From the serious public transportation development resulting in 2016 Hangzhou city has been selected as one of the three pilot cities. Together with Xiamen and Chongqing which has been ranked excellent city as a green transportation city. For urban development, focus will be on integration. Low carbon city, environmental conservation and convenient transportation (Office of Natural Resources and Environmental Policy and Planning, 2017, p.7-2). And the result of this concrete achievement even making Hangzhou city still committed to making the city become the city with the most environmental regulations. To help raise the quality of the ecological environment in the city, to make Hangzhou become a city with 3 types of development which are economic, social and environment development. These 3 developments will be a balance that helps Hangzhou to be a city with a sustainable development foundation (Yenbamrung, 2017).

6. Lessons for urban communities in Thailand

From the analysis, together with related concepts and theories in the case study of Hangzhou city we found that Hangzhou and the urban community in Thailand have the starting point of entering a similar "urban community". It is caused by leaping development and there are similar problems that arise as follows, Single growth city, urban congestion, Deteriorated environment Traffic problems and others. But Hangzhou has a systematic plan to solve these problems, leading to being a city with sustainable Green network until present. The mechanism that makes this development successful can be concluded in 2 issues:

6.1 Resources management

Resources management by local governments with planning and systematic and continuous operations by using measures to enforce or promote or support that can encourage people in the city to cooperate seriously, making various projects successful and seeing concrete results. The important concepts in this area can be illustrated as follows.

1. Space management. New economic and urban development zones have been established. There are 3 goals which are, (1) To reduce urban areas concentration. (2) To organize a clear city plan that can help reduce the impact between conservation and development. (3) To encourage the creation of new cities with different specializations which are determined by the potential of each area. The government has provided utilities and facilities to fully support various activities.
2. Compact City planning by creating a good public transport system and convenient access to basic public services.
3. Proper use of the areas or resources in the local area and a good management.
4. Promoting the use of energy, including various constructions that are environmentally friendly.

6.2 Green network designing

With a very detailed design by giving importance to various matters, which are

- 1.Safety / Accessibility / User's convenience by designing the different types of traveling levels and means to be connected continuously. Both the road level and above the road and also the underground level.
- 2.There is a selection of local plants or good materials that are durable, can live on their own or with a little care. But providing various benefits to the urban community.
- 3.There are designs that concern all types of users (Universal Design).
- 4.Space is created that increases the quality of life for urban people spread throughout the city.
- 5.The development of a landscape that uses the full potential of the area.

For Thailand, some details still need to be developed such as, resources management. Marom (2017) had done a research on sustainable cities in Thailand, and found that Throughout the

past, Thailand had tried to apply concepts and principles that have changed according to the world. But Thailand still cannot maintain the balance in terms of economy, social and environmental aspects in the country at the same time. The weight of importance therefore falls on either side of the lack of connection in operations. And there is no organization that has a direct role in setting a holistic direction. Including, the design of the Green network. In the urban communities in Thailand, there is only a specific area design, it doesn't cover the entire city. Connection problems in traveling or accessing areas designed for all types of users (Universal Design) that are not yet comprehensive and the problems of various landscape elements maintenance. So, we can see that having an organization that can be responsible for systematic and continuous management of resources is important to Green network development to achieve concrete sustainability. This case study of Hangzhou City, therefore, is a guideline that is presented for the urban communities in Thailand, including other cities to consider and apply in accordance with the context of each community.

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SHAPING CITIES-APPLICATIONS OF ARTIFICIAL INTELLIGENCE (AI) AND DATA SCIENCE FOR INDIAN ARCHITECTS WITH SMALL PRACTICES.

Potential to mainstream these technologies for Smart and Liveable Built Environments

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Abstract

AI and Data Science have gained huge traction in recent times due to increased computational power and real time data generation. The AEC Industry has been slow in adoption of these technologies. This study demonstrates that there is definitely a disruptive potential to optimise these technologies and use AI, Machine Learning and Data Science productively. It can augment creativity, speed and accuracy, reduce costs and give competitive advantage. The major constraints in adoption of these technologies for small Indian practices are knowledge and skill gaps, digital transformation, cost constraints, scalability, data bias/scarcity, discriminatory outputs and paucity of cross disciplinary teams. The data collected shows that there is an association between “awareness of technologies” and “adoptability of technologies”. “Academicians” show higher awareness as compared to “only professionals” categories. However the “willingness to use” is higher in “only professionals” category. “Awareness” is higher among “senior” professionals. The road map points towards capacity building for increased “awareness” and a strong tie-up between academia and industry as they contribute mutually, to better “Awareness” and “Willingness to use”. National level regulatory, professional bodies and senior experts should undertake training programs and hands-on workshops for these subjects and also introduce these technologies into the undergraduate and post graduate programs in architecture, engineering urban studies and allied domains.

Keywords: Artificial Intelligence (AI), Data Science, Parametric Design, Architecture, Engineering, Construction (AEC)

AI and Data Science have gained importance in recent times, due to the increasing power and speed of computing as well as high frequency in the generation of real time data. Moreover, this big data has the potential to create huge value across domains. AI is constantly evolving and revolutionizing the future in many diverse domains. AI is creating a paradigm shift in the domain of the Built Environment too. Real-time data is constantly being generated by the use of mobiles and through social media channels as well. These have become extremely critical and major sources of data, as the penetration of mobiles and other handheld devices has increased exponentially, especially in India. The time spent on social media is increasing and online activities are also diversifying, especially in the post-Covid world with education, work and shopping moving on to online media increasingly. These technologies are all set to have a disruptive influence as architects adopt them in shaping our cities.

Introduction

The term artificial intelligence (AI) was coined in 1955 by John McCarthy. He believed that machines could be developed to think and solve problems like humans and they could develop “artificial intelligence”. AI and Data Science, (which is considered as an overlapping subset of AI) have already proven their value in several applications, in diverse domains ranging from manufacturing, healthcare, marketing, education to business.

SWOT Analysis of AI and Data Science:

Strengths: It can perform tasks with great speed and accuracy, which are virtually impossible for humans. It can lead to the formulation of innumerable iterations and potential alternative solutions, especially in case of design problems.

Weakness: A default requirement of Machine Learning as an AI tool is that it requires large amounts of data. And huge amounts of data is not available in many domains. Hence “Data Scarcity” is a severe limitation for these technologies and often becomes an issue in the application of Machine Learning.

Opportunities: AI offers, not just speed, increased productivity, efficiency and quality but it also helps automate and perfect the tasks that could be performed by humans, especially the repetitive, fatiguing and mundane ones. AI helps to optimise processes and Data Science can offer new insights based on data across every possible domain and process. Machine Learning

and Deep Learning or Artificial Neural Networks (ANN) in particular, is one of the most important tools of AI.

Threats: Data Scarcity is certainly a problem as the large amounts of data required are often unavailable. Moreover, Data Bias is often created because of the kind of prejudices and assumptions which are already built into the data that is used to train the AI models. This leads to unfair or inappropriate outcomes to the problem being solved by the AI. There are multiple issues of “ethics” also, as AI typically draws upon innumerable sources of data while creating solutions. There could be ownership/copyright issues to these AI generated solutions.

AIM: The aim of this study is to understand the capabilities and applications of AI and Data Science in shaping cities and explore the potential to mainstream these technologies for small architectural practices in India.

Objectives:

- Identify the potential and existing use cases as well as constraints faced by small Indian practices in the adoption of these technologies.
- Understand the patterns of “awareness”, “willingness to use” across different variables like gender, academicians, profession and seniority.
- Make recommendations to facilitate the adoption of these technologies and formulate a roadmap for the way ahead.

1.1 Methods:

- **The first step-A systematic Literature Review** was conducted to understand the domain of AI and Data Science, its capabilities, applications and current global and Indian use cases in general. This included all kinds of recent print and other media as well. It was also used to identify the existing use cases and constraints in adoption in general.

The second step-To identify the opportunities available by identifying the gaps for value creation in shaping the Built Environment.

The third step-To overlap the two; i.e. the existing gaps of value creation and the capabilities of AI and Data Science, could lead to the capitalization of the

potential applications of the latter, in the AEC industry as well as the future trends for shaping cities.

- **Open ended surveys** were conducted with AEC professionals to collect data about the potential of these technologies, awareness levels of the same, willingness of professionals to use them, and challenges/constraints in mainstreaming them. The sample surveyed comprised of 36 respondents comprising of a simple random sample of architects and engineers, with a mix of junior and senior professionals (20 year plus experience) and also a mix of genders. There was a mix of academicians, academician cum practitioners, and professionals in practice as well.

Figure 1: Percentage of Gender
Figure 2: Percentage of Senior/Junior

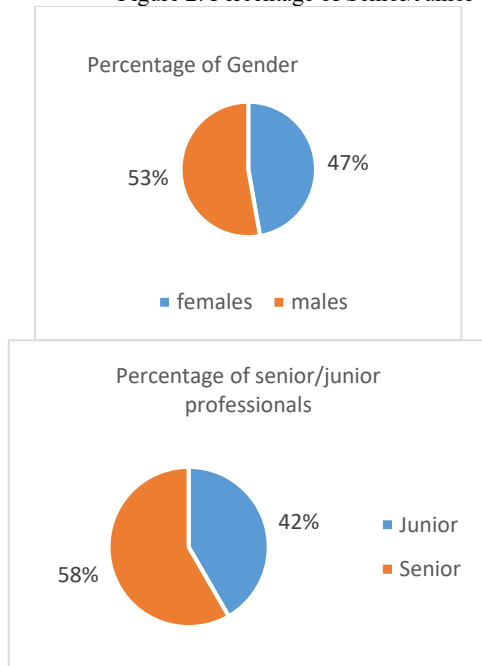
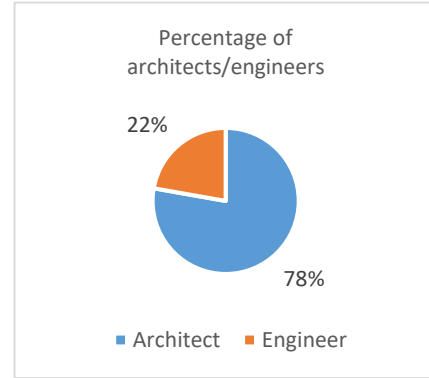
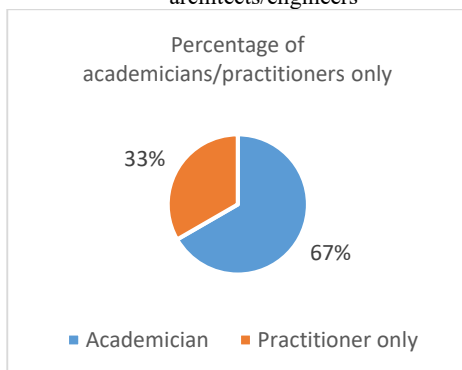


Figure 3: Percentage of academicians/
Practitioners only Figure 4: Percentage of
architects/engineers



“Academicians cum practitioners” have been clubbed with the category of “Academicians” in Figure 3 and in the analysis.

Tools

Google forms were emailed to all the respondents and the data set collected was analysed further using basic descriptive statistics. A large number of respondents are from the State of Maharashtra. Maharashtra State has the largest number of registered architects of the total registered with the “Council of Architecture”, the National regulatory body for India; almost 28% followed by Tamil Nadu with 12% approximately. The other states have much lower percentages of registered architects (7% and less). Maharashtra is also the most industrialized state of India.

Secondary Data regarding expert opinions of large international architectural firms using digital technologies was collected. This gave an understanding of the global trends and use cases in the AEC domain and facilitated identification of technologies and tools being used, more popularly.

Literature Review:

2.1 Understanding Machine Learning (ML):

AI could be thought of as an intelligence of machines by which they can be made to think and make decisions like humans. Machine learning (ML) is an artificial intelligence (AI) where inputs and outputs can be mapped using historical data sets. The computer can give new outputs, without explicit programming, based on the historical data fed into it.

2.2 Some current popular Ai based technologies in the AEC industry:

1. Parametric Design
2. Generative Design
3. AI Aided Design

Parametric Design: It is the traditional approach of programming designs with geometric rules that generate actually generate the design. The designer can make multiple changes by modifying the parameters in real-time **on the same design**. The limitation is the difficulty of application for solutions integrating multiple parameters and their interdependencies for a real world, scalable solution.

It is relatively better known and adopted by many architects globally and in India as well. Some Indian architecture schools also offer post graduate degrees in digital architecture. And the subject of “Parametric Design” is also offered as a course in undergraduate degree programs.

Generative design: In this category, the parameters are introduced at the beginning of the process itself; the system performs the optimization and generates a set of best results. The

next step is the selection of the best result by human intervention. It is a mix of man and machine inputs and intelligence. An AI imaging tool called “Midjourney” could fit into this category. It produces images based on prompts of certain words; these can be refined and tweaked further by human intervention. It is currently being used in India, albeit very selectively.

AI-aided design: The Process is more dynamic where the humans enter data continuously in real time and arrive at a solution with a collaborative approach. It is based on the assumption that there are some aspects of human understandings

1. **Parametric design:** It generates options on the same design by changing the defined parameters. It really helps in creation of multiple options/numerical details and calculations in record time and in visualizing/creating complex forms that are impossible manually, by humans. A lot of current path breaking work in urban design, architecture and structural engineering is happening only because of the capabilities of parametric design.
2. **BIM (Building Information Modelling):** It facilitates real time, remote collaboration across teams of all the professionals involved, in different geographies, in multiple layers of structure, services and cost details in 3d. BIM can be used to create digital twins of buildings and cities to study and analyse them for discrepancies and errors before an actual construction begins or even when the construction process is on with the use of Augmented Reality (AR). It can help to perform Energy Performance Analysis. This cutting edge technology is already being used by many large, mid-sized and small practices as per their project needs and available skill sets. It will support creation of Smart Cities and Smart Homes.
3. **Motion Studies:** These can capture human behaviour as they occupy and engage with indoor and outdoor spaces. This data can help uncover trends which can eventually help to inform design processes for different spaces.
4. **Augmented and Virtual Reality:** This creates virtual tours of unbuilt structures with applications in marketing, design and construction monitoring. A lot of Indian developers and architects are already using these tools to facilitate visualization of unbuilt properties and spaces for the laymen clients. It facilitates fine tuning the design process, increases user satisfaction and helps the marketing process of real estate. The construction monitoring application can avoid costly mistakes and save time by timely identification of errors, clashes between building services elements and save money instead of having demolitions later. Overall, it will result in much better quality and is gaining traction in India too.
5. **Floor plan generation and optimization using AI:** The optimum design option can be created by feeding in the constraints, regulations and other attributes of the required ideal design solution. The AI can integrate all the considerations and generate the plans that meet all the criteria. This is a difficult task for humans.
6. **Aids for the differently abled:** This will facilitate navigation of cities and buildings, using Natural Language Processing (NLP). This technology can help creation of voice assistants and speech to text conversion for the hearing and sight impaired as well as general applications to increase speed of inputting data using speech instead of typing text. This is a

and sensitivities that simply cannot be fully understood and replicated by machines. Hence a collaborative approach works best; with both contributing towards aspects they perform optimally.

2.3 Accepted use cases in the Built Environment-Design, Analytics and Predictive applications and their current status in India:

- promising technology for urban application but not in popular use currently in India.
7. **Transport Optimization using Computer Vision/Image recognition:** It has applications in Self driving cars and larger applications in transport optimisation models for both, traffic and pedestrians. It can help identify shorter routes, scenic paths, potential accident spots and traffic congestion to be avoided. More importantly, it can reduce the carbon footprint and traffic driven pollution significantly. It is in use to some extent through some popular mobile apps in India.
8. **Computer Vision and Image recognition:** Security applications can be created by using face recognition; this is “Image recognition”. Defect identifications of finished products or materials or components in manufacturing or even in constructed buildings and structures can be achieved by using GIS image and drones, especially in inaccessible areas. These can improve the overall quality management.
9. **Urban Energy Modelling:** This is used to map and analyse energy or water consumption patterns using thermal imaging cameras and sensors. It can be applied to Studies of Energy Consumption, Urban Heat Island Effect, Climate Modelling, Indoor Air Quality (IAQ), and ventilation in slums/affordable housing using drones and sensors especially in congested and densely populated areas where conventional manual data collection is difficult or not possible due to other constraints. It can collect relatively large amounts of data in short periods. It can be used for Climate Change Modelling and Analysis using scenario analysis. Many universities are currently researching these technologies globally and in India too.
10. **Predictive maintenance** of buildings and bridges can be done by combining computer vision with historic and real time data. This can save time and cost due to demolitions or rectifications. This trend is increasing in India also.
11. **Covid Management:** This was done using big data and predictive analytics to identify trends, containment zones, and create strategies to combat Covid and frame Covid-appropriate behaviour. It was used very effectively also to predict demand and deploy/plan for various resources like medication, staff and bed capacity in India.

Data Collection

3.1 Expert Interviews

A niche group of large architecture/engineering practices currently use AI and Data Science. As per the study (Gallo, 2020, pages 8-9) Machine Learning (ML) will be the AI tool with the greatest potential in the next 10 years as per interviews with 10

large firms. “Other computational technologies” have emerged as the tool with the second largest potential.

3.2 Surveys:

Open ended surveys were conducted to understand how these technologies can be mainstreamed for adoption by smaller practices in India. The questionnaire investigated the following issues:

- Awareness of these technologies
- Adaptability of these to current professional/academic work
- Constraints in adoption
- Willingness to use

DATA ANALYSIS AND CONCLUSIONS: The primary data set:

A systematic review of relevant and recent literature was analysed to reveal the current capabilities and applications, the challenges of solutions for more complex future problems. The accepted use cases are detailed in section 2.2 and 2.3.

The survey results were analysed for significant insights and to chart out a roadmap for the mainstreaming of these technologies in India. Basic statistical analysis was carried out in Excel.

4.1 The following pie charts and bar charts generated by the Google Survey visualize the responses along with the analysis.

Figure 5: Breakup of professions

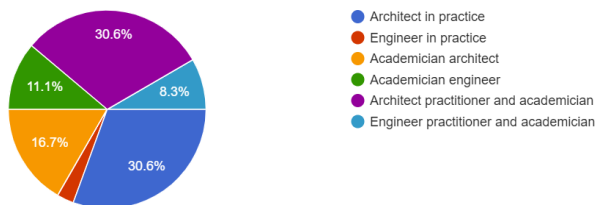


Figure 6: Willingness to use if there are no constraints, (69.4% respondents are willing to use)

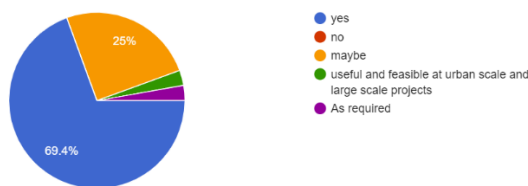
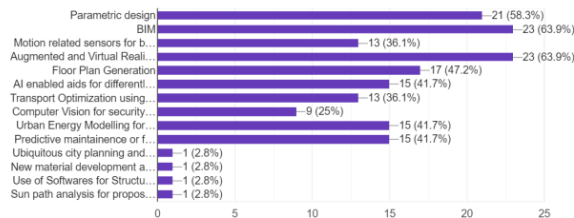
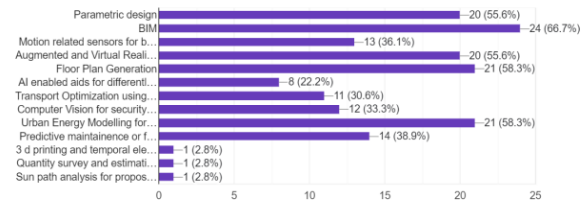


Figure 7: Technologies Awareness (Percentage of respondents)



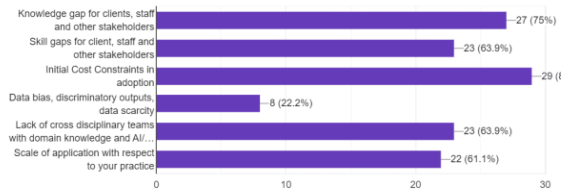
“BIM” and “Augmented/Virtual Reality” (63.9%) followed by “Parametric Design” (58.3%) are the technologies with highest percentage of awareness among the respondents.

Figure 8: Technologies adoption (Percentage of respondents)



“BIM” (66.7%) followed by “Floor Plan Generation” and “Urban Energy Modelling” (58.3%) are the technologies with highest percentage of adoption among the respondents. “Parametric Design” and “Augmented/Virtual Reality” are almost at the same place (55.6%)

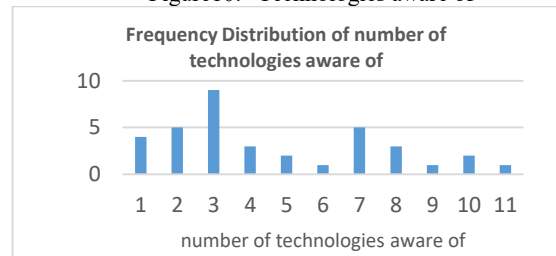
Figure 9: Constraints (Percentage of respondents)



“Initial cost constraints” has emerged as a constraint with highest percentage (80.6%), followed by “Knowledge Gap” (75%) among the respondents. In general, data bias and scarcity does not seem to be a constraint to most people; they probably do not understand it well enough to appreciate the seriousness of the outcomes of data bias and data scarcity.

4.2: Frequency distributions of single variables and scatter plots with correlation coefficients (for analysing two numerical variables):

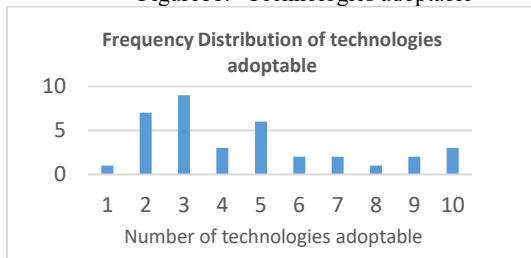
Figure10: “Technologies aware of”



Average number of technologies aware of is 4.66, median is 3.5, mode is 3 and standard deviation (sample) is 2.89. This shows that the variability of data is quite large. Respondents may know all 10 technologies or almost none also. The general level of awareness is low; the mode and median are just 3 and 3.5 respectively. The average is higher at 4.66 because of the outliers of 10 and 11.

Statistic	Value
Average	4.66
Median	3.5
Mode	3.0
Standard Deviation	2.89

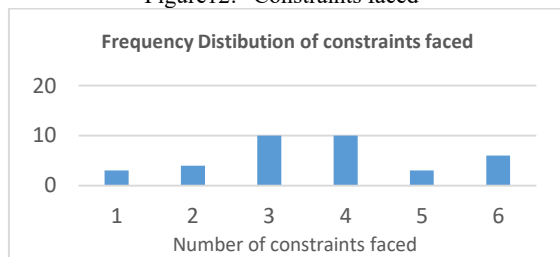
Figure11: “Technologies adoptable”



Average number of technologies aware of is 4.61, median is 4.0, mode is 3 and standard deviation (sample) is 2.61. This shows that the variability of data is quite large.

Statistic	Value
Average	4.61
Median	4.0
Mode	3
Standard Deviation	2.61

Figure12: “Constraints faced”

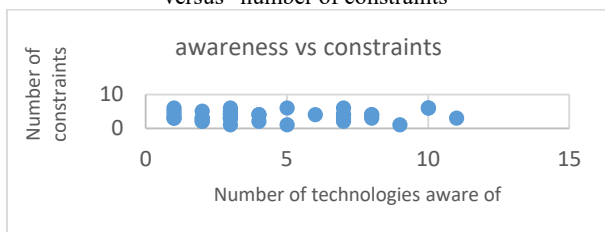


Average number of constraints faced is 3.66, median is 4.0, mode is 4.0 and standard deviation (sample) is 1.47. The average number of constraints faced is quite large and variability of data is also large.

Statistic	Value
Average	3.66
Median	4.0
Mode	4.0
Standard Deviation	1.47

Scatter plots were used for the analysis of 2 numerical variables

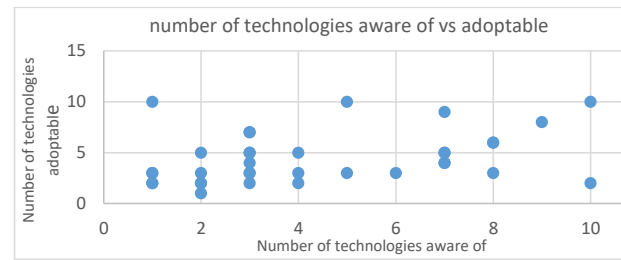
Figure 13: Scatter plot of “Number of technologies aware of” versus “number of constraints”



Co-relation coefficient $r=0.074$.

The visual pattern of the scatterplot appears random and shows that there is no association between the variables “awareness” and “constraints”. The Correlation coefficient is close to zero and confirms that there is no association between “the number of technologies aware of” and “number of constraints to adoption”. The constraints faced by the respondents have nothing to do with their awareness levels.

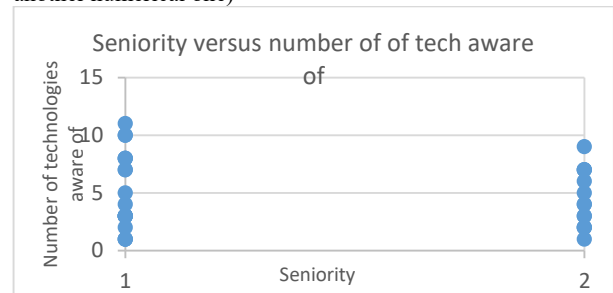
Figure 14: Scatter plot of “number of technologies aware” of versus “number of technologies adoptable”



Co-relation coefficient $r=0.41$.

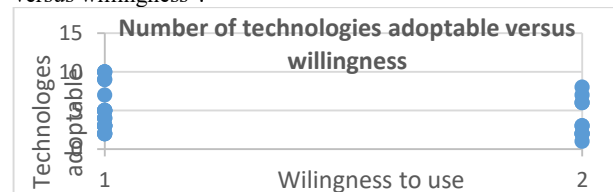
A visual examination shows a weak pattern showing a positive upward slope for some part of the data points and a loose association. The Correlation coefficient is 0.41 and shows a weak relationship between “awareness” and “technologies adoptable”. Hence, there may be other factors like lack of skill set, project scale/domain, affordability and practice size which may impact this variable of “adoptability”.

Figure 15 : Scatterplot of “Number of technologies aware of” versus “seniority”.(To analyse one categorical variable with another numerical one)



It appears that number of technologies known is slightly higher in seniors. (Seniors are coded as 1).

Figure 16: Scatterplot of “Number of technologies adoptable versus willingness”.



It appears that if “number of technologies adoptable” is higher then “willingness to use” exists. (Willingness as “yes”, is coded as 1).

4.3: Contingency Tables: (For analysing two categorical variables)

Table 1: Contingency table between Profession and Awareness

Profession	Number of technologies aware is 5 or more out of 10 (relative row frequency)	Number of technologies aware of is less than 5 out of 10 (relative row frequency)	Total
Academicians	11(45.83%)	13(54.17)	24
Practitioners only	4(33.33%)	8(66.67%)	12
Total	15	21	36

There is a small difference in the relative row frequencies “number of technologies aware of” between the variables “profession”.

Academicians seem to slightly higher awareness as compared to “practioners only”. The average number of technologies aware of in academicians is 5.12 (51.20%) and those in practioners only is 3.58 (35.80%).

Professionals in practice are probably more busy and are not able to devote time unless it is required and paid for through their projects.

Awareness average for engineers is slightly higher at 5.38 (53.80%) as compared as that for architects at 4.39 (43.90%) and is not very significant.

Respondents’ “willingness to use” is related to the possibility of adoption in the real world of practicing professionals and academia also.

Table 2: Contingency table between Profession and Willingness

Profession	Yes (relative row frequency)	Maybe/no (relative row frequency)	
Academicians	15(62.5%)	9(27.5%)	24
Practitioners only	10(83.33%)	2(16.67%)	12
Total	25	11	36

Professional Practitioners show slightly more willingness to use these technologies if there are no constraints. This probably shows that they are aware of the value it will add to clients/the profession and the earning potential possible through the use of these technologies.

Table 3: Contingency table between Gender and Awareness

Gender	Number of technologies aware is 5 or more(relative row frequency)	Number of technologies aware of is less than 5(relative row frequency)	Total
Male	59(26.31%)	14(73.69%)	19
Female	10(58.82%)	7(41.18%)	17
Total	15	21	36

The contingency table shows that females have a higher relative row frequency for the variable “number of technologies aware of is 5 or more” as compared to males. That is probably also because there is a higher percentage of female academicians (62.5%) than males (37.5%) and academicians have already shown higher levels of awareness as seen in Table 2.

Table 4: Contingency table between Seniority and Willingness to adoption

Seniority	Yes(relative row frequency)	Maybe/No (relative row frequency)	Total
Senior	14(63.63%)	8(36.37%)	22
Junior	11(78.57%)	3(21.43%)	14
Total	25	11	36

The contingency table shows that juniors have a slightly higher relative frequency for the variable “willingness in adoption if there are no constraints” as compared to seniors. Seniors show some amount of hesitancy and seem more skeptic about these technologies.

Table 5: Contingency table between Gender and Willingness to adoption

Gender	Yes (relative row frequency)	Maybe/No (relative row frequency)	Total
Male	14(73.68%)	5(26.32%)	19
Female	13(76.47%)	4(23.53%)	17
Total	27	9	36

The difference in the “willingness to use” across genders does not appear significant.

Overall, the following insights were generated from the data analysis:

There is highest awareness for “BIM” and “Augmented/Virtual Reality” (63.9%) followed by “Parametric Design” (58.3%). “BIM” (66.7%) followed by “Floor Plan Generation” and “Urban Energy Modelling” (58.3%) are the technologies with highest percentage of “adoption” among the respondents.

“Awareness” is higher among academicians and seniors (20 years plus experience). However professionals in practice show more “willingness to use”.

“Number of technologies adoptable” is higher if the “Number of technologies aware of” is higher.

As per this dataset, there is no relation between the “awareness” levels and the “Number of constraints”. However, “willingness to use” exists as the “number of technologies adoptable” increases.

Knowledge Gap

There is a huge knowledge gap regarding the value and applications of these technologies at the client and the business end too.

Cost

This is a constraint for application initially.

Scale of application

It may be an adoption barrier for small practices.

Technical skill gap

AI and Data Science need to be integrated into architecture/engineering education. There is a need to fill this gap and develop cross disciplinary teams with domain knowledge and programming/AI skills

Digital transformation of AEC firms

There is a problem of data bias data, data privacy, ethics and scarcity. The transformation process itself poses a challenge for practices as well as organisations and educational institutions.

DISCUSSION:

The respondents are from larger cities and the situation may be different in smaller and more remote parts of the country. The awareness itself may be much lower and hence adoption will be more difficult in these locations for academia as well as professionals in practice. These technologies are still in an exploratory stage and the results from AI-generated models need rigorous validation. Contrary to popular belief, AI is not threatening jobs but replacing tasks. Other jobs will be created as is the case with all automated processes. These could be subsets of jobs entailing multiple smaller activities. In fact, it could make overall performance more accurate and speedy, leaving the more creative aspects to architects and planners.

CONCLUSION:

Roadmap for the future in India:

1. Capacity building through the national professional and regulatory bodies should be undertaken to organize trainings to impart knowledge and increase general awareness. Online and subsidized trainings will benefit participants from remote locations as well.
2. These should be introduced as electives and in undergraduate programs and as full fledged postgraduate degrees at universities.
3. Professionals in practice should focus on developing cross disciplinary teams in order to reap maximum benefit.
4. An integrated design approach including all professionals as well as academic expertise and research inputs from the onset of the project itself, is recommended.
5. Industry-academia tie up should be stronger so that professionals can reap the benefit of academic expertise and knowledge.

AI and Data Science will certainly be the disruptive drivers for architects as they shape the cities of the future. The major challenges for AEC firms in India are cost constraints, knowledge and skill gaps. Digital transformation itself is a challenge. The technologies must be used in a responsible manner because data can often create discriminatory outputs. The knowledge and skill gap should be filled up to leverage these technologies and mainstream them by increasing the number of cross disciplinary teams with domain knowledge and programming skills. There is a strong need to increase the collaboration between academia and practicing professionals. Professional bodies should play a role in spreading awareness through trainings and capacity building on these emerging technologies. Students and academia will also become industry ready and willingness to use these technologies will increase across the board. This is the need of the hour and the future, to create smart and liveable cities.

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JAIPUR: VERNACULAR ARCHITECTURE AND BEYOND

○ Ar. Tushar Sogani

Abstract

"The city of Jaipur is globally recognised as an exemplar of eighteenth century urban planning and has been extensively studied for its cohesive urban morphology and architectural identity. For most, the walled city of Jaipur symbolises the futuristic vision of its founder, Sawai Jai Singh II, with a carefully laid out grid-iron plan organised into neighbourhoods or *chowkdis* by a strict hierarchy of streets and a uniform urban fabric. However, Jaipur has constantly re-invented itself, assimilating a range of social and cultural influences, visible in its vast repository of crafts, traditions and architectural expressions. This is perhaps most clearly reflected in the way its architectural identity has transformed over three centuries. The eighteenth century vocabulary drew upon prevailing Mughal and Rajput elements while the nineteenth century buildings show a distinct colonial influence which was merged with the pre-existing fabric."

Keywords: Architectural identity, Heritage and Modern Vernacular, Coexistence of old and new, passive measures, urban fabric

Introduction

Architecture of a place defines its identity. It is well said that architecture built with vernacular roots is always sustainable. At its roots, architecture exists to create the physical environment in which people live, but architecture is more than just the built environment, it's also a part of our culture. It stands as a representation of how we see ourselves, as well as how we see the world. This paper discusses Jaipur as the case study, with its rich heritage architecture. The city has a lot of potential to become one of the pioneer in the green revolution as well.

Architectural works and buildings – as members of these components – play important role in the formation of architectural identity of the city.

The city of Jaipur is one of India's architectural wonders. It houses some of the country's most ornate royal palaces -- elaborate structures designed hundreds of years ago that still captivate visitors today. Largely built in the 1700s under the order of Rajput ruler Sawai Raja Jai Singh II, Jaipur is surrounded by a city wall and several defensive forts.

City evolution

Jaipur lies at a distance of about 200 miles from Delhi, 150 miles from Agra and 84 miles from Ajmer. Capital city of Rajasthan is located amidst the Aravali hill ranges at an altitude of about 430 m above sea level. The eastern Rajasthan, lying to the east and south east of the Aravalli divide includes the modern administrative districts of – Udaipur, Chittorgarh, Rajsamand, Banswara, Dungarpur, Kota, Bundi, Baran, Jhalawar, Bhilwara, Ajmer, Jaipur, Tonk, Dausa, Dholpur, Karauli, Bharatpur and Alwar.

The current district of Jaipur lies in Eastern Rajasthan, in the Banas River basin and forms a part of Eastern Plain of Rajasthan. The region is drained by a number of seasonal rivers of which Banganga, Dhundh and Bandi are prominent. From the 10th century onwards, the district referred to as Dhoondhar, formed one of the four distinguishable politico-cultural regions of Eastern Rajasthan, in addition to Mewat, Hadauti and Mewar. Dhoondhar region was roughly comprised of current districts of Jaipur, Dausa and Tonk, with Jaipur and Amber further constituting Dhoondhar subzone within the larger tract of Dhoondhar region.

In Aryan epics, Dhoondhar region (called Matsya Desh/ Mina Wati) was the shortest trade route between north India and rich port cities of Gujarat and Malabar. The region was held by

Badgujars, Rajputs and Minas till the 11th century. From the 11th century onwards, however, the Dhoondhar region was increasingly under the power of Kachchwaha dynasty of Rajputs.

Conceived as a commercial center in the state of Rajasthan, it was considered ahead of its time due to the use of grid iron city planning. The earlier capital of Amer (or Amber) was shifted to Jaipur.

Reasons for Maharaja Sawai Jai Singh to change his capital from Amber to Jaipur:

Military Reasons

Defence was an important consideration. A site at the South of Amber ensured greater distance from Delhi and also prevented the expansion of the city in that direction. It was clear that the out skirting hill ranges (Nahargarh hills) shaped as a horseshoe would allow the new city to expand only in the South. So this flat site with a basin like shape was chosen. It was an open plain bounded on the north-west and east by hills.

Earlier Rajput capitals were established in the hills, and so moving capital to the plains was an ex of Sawai Jai Singh's boldness.

Geographical Reasons

The rocky terrain of Amber restricted expansion.

- Jaipur had the potentialities of developing into a city with adequate drinking water due to the presence of a perennial stream nearby and good drainage system. Its rugged hills also ensured a constant supply of building material, which might be required in the times to come.

Two significant facts responsible for the origin of the city and its subsequent layout:

1. The need of a new capital for 18th century Dhoondhar as the earlier one of Amber built on a hill was getting congested.
2. Sawai Raja Jai Singh's vision of the new capital as a strong political statement at par with Mughal cities and as a thriving trade and commerce hub for the region.
3. The site selected for establishing the new capital of Jaipur was a valley located south of Amber and the plains beyond, a terrain that was the bed of a dried lake. There used to be

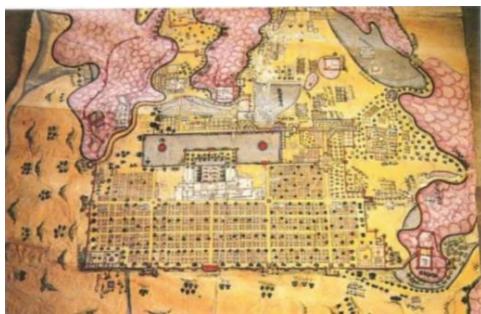
dense forest cover to the north and the east of the city. The physical constraints that informed the building of Jaipur city included the hills on the north that housed the fort of Jaigarh and the Amber palace beyond, and the hills on the east, which contained the sacred spot of Galtaji. To facilitate water supply to the new city, the Darbhavati river in the north was dammed to create the Jai Sagar and Man Sagar (that later housed the Jal Mahal) lakes. Later the Jhotwara River in the North West was diverted through the Amani Shah Nallah and a number of canals were channelised through Brahmapuri and Jai Niwas to supply water to the city.

The town has around it a masonry wall, 25ft. high & 9ft. thick, with eight gates. Jaipur is known as the Pink City, a rather idealized description of the terra-cotta-colored lime plaster that coats the old part of the city's walls, buildings, and temples. Public spaces can be divided into-Chaupars, Bazaars, Mohallas, Streets, and Temples. Since time Jaipur has been one of the major case studies for heritage vernacular architecture.

Time and again researchers have been inquisitively studying about its local techniques, materials and the passive measures used for the dry and hot climate of the region. Even a cursory examination of Jaipur illustrates themes of power and kingship being articulated through architecture and urban planning. This 18th-century city demarcated by thick walls and gateways carries the palimpsest of centuries, rulers and the changing needs of times.

The city of Jaipur was not meant to be a fort-town, or a military base, but a Centre for commerce and trading. The new capital was meticulously planned, keeping in mind the traditional treatise on architecture, the Vastu Shastra.

Planning of the city



The generic plan of a medieval Rajasthani hill town- as in Dausa and Amber



Amber Town with the Fort on top of the hill and the walled town down the slopes

The medieval towns of Rajasthan were of military, agrarian, mercantile or religious nature. The presence of a deity marked the reference point for the ruler's abode and the rest of the city. The name of the town was usually associated with the political or religious centre (with the Ambikeshwar temple in the case of Amber and with Sawai Jai Singh in the case of Jaipur).

Unlike Dausa and Amber, the two previous capital cities of the Dhoondhar region established on hill-top, who's planning was guided by topographical structure of the areas, Jaipur city was revolutionary both in terms of its grid-iron pattern planning and its location at the base of the hills.

There was also a significant economic shift from an agricultural base in Dausa and Amber to trading in the capital of Jaipur.

The layout of the city of Jaipur wonderfully links the concept of a Shastric city with the practicalities of the chosen site.

First, the straight line of the ridge suggested itself as the route for one of the main east-west thorough fares and building a road along its crest makes best possible use of the topography for the purpose of drainage.

What followed then was to regularize the Amber-Sanganer road as a north-south route at right angles to it.

The point of intersection would be one of the city's main cross-roads (chaupar).

Although the location of the axes was determined, their extents were yet to be defined. The southern boundary of the city had to lie within the line of the Agra-Ajmer road. So by extending the NS road as far as possible southwards gives the first fixed dimension, the length of a side of a square and so establishes the size of the unit or module of the city.

A hunting lodge known as Jai Niwas. It was the king's wish that this establishment come within the city.

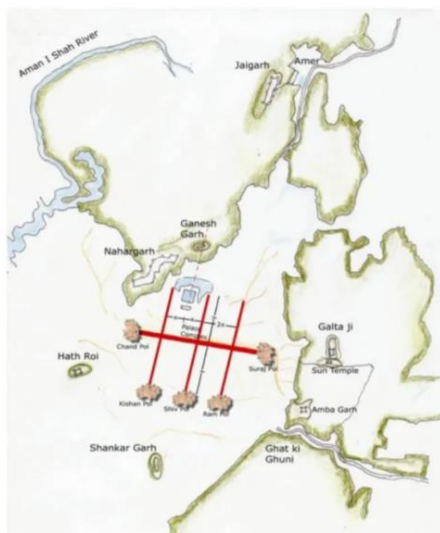
A road cutting the plain from N to S linking Amber, the capital to Sanganer, the principal trading town. This road had to be preserved and controlled and therefore had to fall within the city's boundaries.

A second road ran E to W between the Mughal cities of Agra and Ajmer and placing the new city on this already established communication line would help secure its economic success. However since this was an imperial road that could not be encroached on, thus the city had to be contained to the north of this line.

Also, a natural ridge runs across the plain, N of the road and parallel to it, in a roughly EW alignment (with a slight deviation of 15 deg. from the cardinal axes). The area to its S is flat while that to its N slopes down gently. In Shastric terms, this is an ideal arrangement as declivity towards the north-east is considered the best site. In practical terms, the ridge too had to be accommodated.



The intersection of the axes to define the Badi Chaupar (City Square).



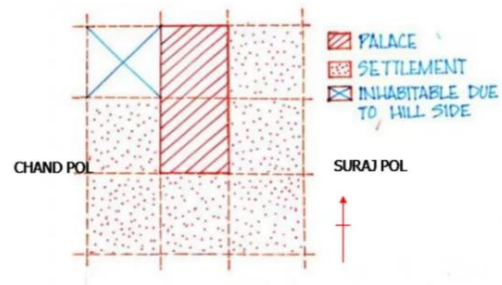
Division in to eight portions, ends of the roads marked by Gates in the City Wall

It is a model of town planning- the first planned city in India. It is based on Hindu systems of town planning and followed the principles prescribed in the Shilpa-shastra, an ancient Indian

treatise on architecture .according to this shastra the site should be divided into grids or mandalas ranging from 2x 2 to 10 x 10.

Planned according to the Prastara type of layout, which gives prominence to the cardinal directions.

Thus plan of Jaipur is a grid of 3x3 with gridlines being the city's main streets. The central axis of the town was laid from East to West between the gates of the Sun (Suraj pol) and the moon (Chandpol).



This was crossed by two roads at right angles dividing the town into nine almost square, almost equally sized blocks, which were further sub divided by lanes and alleys all at right angles. But by building the western boundary of the city right up to the hill's southern apex, it provided a continuous line of defense.

The mandala could not be complete in the NW due to the presence of the hills. On the other hand in the SE an extra square has been added that plugged the gap between the city and the eastern hills.

Towards a contemporary city

As the city has grown, contemporary spaces have also made an impact. Most prominent is Charles Correa's 1993 Jawahar Kala Kendra, a dynamic arts complex. Unlike in many historic cities, the coexistence of old and new in Jaipur is supported by its residents. On the one hand, Jaipur's rapid urban expansion in the early twentieth century could be viewed as diminishing its rich architectural traditions.

However, some of the city's most intriguing architectural developments also took place in this period. Chief amongst them is the development of the Mirza Ismail Road, one of the iconic market streets of modern Jaipur.

The Ram Niwas Garden and Albert Hall lay further south of the road and several smaller structures. With the development of the C Scheme, the highway's significance as a local connector grew and it became one of the prime commercial districts outside of the walled city. The Maharaja was so impressed with the exceptional contributions of Mirza Ismail that he named the road after him.

Several significant changes were also made within the walled city during Mirza Ismail's tenure, even though the emphasis was on development beyond the walled city and the implementation of the municipal plotted development. Of these, perhaps the most visible addition was that of the colonnaded verandas added to the

primary bazaar streets. These verandas which comprise of a simple repeating unit helped unify the individual structures along the bazaars visually. They also regularized the edge of the wide avenues laid out by Jai Singh and provided a shaded refuge for visitors and traders alike.

The uniform terracotta 'pink' wash introduced in the nineteenth century was renewed after almost three decades and the sandy by lanes were paved with stone. Several of the 'kutchcha' structures which still dotted the various chowkdis were replaced with newly built structures.

The urban fabric of the walled city was also changing, with the regularised streets and by lanes branching off the main bazaar streets while the inner street networks remained informal. The bazaars of the walled city including traditional bazaars such as the Johri Bazaar, the Tripoliya Bazaar, the Chaura Rasta and the SirehDeodhi Bazaar as well as the high-end Mirza Ismail Road together contribute to a specific image of Jaipur as a commercial haven. While the bazaars of the walled city are a complex layering of additions and modifications over three centuries, the everyday visitor gets a sense of a unified urban precinct which goes beyond the use of a limited colour palate. The verandas offer a continuity of façade, but at no point do they overpower the individual structures themselves, acting instead, as a foil to the contrasting shapes and forms of the walled city skyline. The M.I. Road colonnades serve a similar function for its individual buildings, though there is much less disparity in proportion and style. The verandas serve as a visual anchor between the old city streets and the rapidly developing M.I. Road. Despite the fact that

the colonnade was proportionately and stylistically different in both areas, the system unified the two districts.

Architecture turns interesting in smaller colonies, where individual tastes are more freely expressed—from a simple houses to designer sandstone havelis, old trees and rambling gardens. The city may have grown, expanded, and centers of power moved to democracy, but the living heritage, traditions of art, craft and culture continue to draw visitors to the city of Jaipur.

Conclusion

The growing need for housing and other amenities have contributed to the changed urban fabric of the city. The city has evolved as per the needs and urgencies of the residents and visitors. The shift has been descendent of the past but loses its essence. The pink city still maintains the heritage vernacular architecture in the core, but the newer colonies see a much more modern appeal, with minimalist ornamentations.

Each time a city or a town undergoes an architectural shift in its design techniques and material usage, it shows the city is moving towards modernization. Jaipur has also shown remarkable shifts from heritage to modern vernacular to glass buildings, but what is commendable for the city is to have preserved its heritage vernacular architecture. This has been the essence of the city since its birth. People across the world know Jaipur as a rich cultural and architectural marvel. And that is why it is rightly said that architecture of a place can define it.

RECONSTRUCTION WITH MUD MORTAR

Sharada Sec. School, Yalachhen, Bhaktapur

○ Srijana Prajapati

Abstract

Reconstruction work after April 2015 (2072 Baisakh 12) was taking slower pace than expected (Prajapati & Panta, 2019 AD). This project was also pipelined for many years. Finally, it was decided to make in mud mortar with Newari traditional technology. These vernacular technologies are complicated to prove scientifically earthquake resistance. Whenever there are so many private residential buildings as well as temples (for example: nyatapola temple and fifty-five window palace of Bhaktapur Durbar square) in Kathmandu valley. They existed till date from more than three century. Thus, this project became a model project for future generation. Because this kind of technology use in larger (more than thousand square feet) & taller (more than two storeys) buildings are being rare in these days. The technology is not only traditional but also sustainable and vernacular.

Key words : Newari technology, Mud mortar, Reconstruction, traditional building, vernacular.

Proprietor of Method Consultancy, Bhaktapur.

URBAN HERITAGE CONSERVATION IN MADHYAPUR THIMI

Documentation of Intangible Cultural Heritage; Sindur (Abir) Jatra of Balkumari Guthi

o Shrestha Ram¹, Prof. Sheng Zhongwei² Shrestha Rujal³

Abstract:

The growing uncontrolled urban sprawl has made an adverse effect on different parameters and attributes of our heritage in core heritage areas. Due to this, a slow loss of our intangible assets made a huge concern for heritage conservation from all over the globe. Since many issues arise in the sustainability of remaining Jatra Guthi, various safeguarding domains have been mentioned by UNESCO 2003 Convention. Similarly, the conservation and preservation of tangible aspects of monuments, settlements, etc. are more emphasized and enhanced by its intangible aspects. Since, these Guthi depict people's origins, lifestyle, their socio-economic and cultural attributes; they should be conserved for future generations and international recognition too. By case study method, this paper includes detailed documentation of the Intangible cultural heritage of Sindur Jatra of the Balkumari area. Finally, this paper concludes to reduce the possible gap between tangible and intangible aspects to make space around an urban heritage more viable, livable, and sustainable.

Background:

One of the most successful conventions in Heritage Conservation is — the "UNESCO Convention Concerning the Protection of the World's Cultural and Natural Heritage" in 1972, which primarily identified the damages caused to the heritage sites by different social and economic changes; confirmed to be even more damaging than the natural processes of decay (Maharjan and Barata 2018). To some extent in the past, people are considered rich if they have numerous amount of grains to feed throughout the year. Since, there were no concrete value of money at that time they didn't misuse Guthi's assets, they just grew to continue hand-to-mouth relation. But, today, people have enough to eat but didn't have money. So, there is easy way of acquiring wealth by Guthi properties by selling it.

So, taking the case study of Balkumari Temple, different Jatra Guthi had come up to give continuity to Bisket Jatra; a Jatra of color. All the scenario of this study gives a massive responsibility and opportunity to guthi member to celebrate the festivals and culture and make feel one as an interconnecting and non-separable of this whole Jatra.

Introduction:

According to Schouten (1995:21), Heritage is a processed history, constituted through "mythology, ideology, nationalism, local pride, romantic ideas or just plain marketing, into a commodity." Larkham (1996:14) suggests that heritage is not a singular instance bound in history or place that but is a "process of selection and presentation of aspects of both, for popular consumption. "Thus, what becomes declared as heritage is as much a process of its historical or cultural construction.

The concept of urban conservation has its roots in the conservation movements in the late nineteenth century when awareness of the value of historic urban centers

developed in reaction to the loss of the defense structures of many fortified medieval cities in Europe due to their expansion. During this period, a city was considered as monument or as an object of art (Jokilehto, 2003). John Ruskin, a prominent advocate of conservation, in his work entitled "The Seven Lamps of Architecture" identifies the values of conservation. His seven lamps were considered as guiding principles and they were: sacrifice, truth, power, beauty, life memory and obedience.

Hence, urban conservation deals with cultural heritage within urban areas and in particular historic urban centers. It is the process of managing change in historic urban areas in which urban conservation works within the greater context of the urban system.

Guthi is a social organization that is used to maintain the socio-economic order of Nepalese society based on relationship, caste, or territorial aspects for the establishment and maintenance of religious and cultural functions. Jatra is a periodical festival in honor of an idol, to which pilgrims resort. In Nepal, people use to celebrate different gods' festivals, where they use to pull huge chariots in different places to travel the god through different places.

The UNESCO Convention 2003 considers the Intangible Cultural Heritage (ICH) as "the practices, representations, expressions, knowledge, skills — as well the instruments, objects, artifacts and cultural spaces associated therewith — that communities, groups and, in some cases, individuals recognize as part of their cultural heritage. This ICH, transmitted from generation to generation, is constantly recreated by communities and groups in response to their environment, their interaction with nature, and their history, and provides them with a sense of identity and continuity, thus promoting respect for cultural diversity and human creativity" (Joan Reguant-Aleix, 2009).

Objective:

- To study the issue of the Jatra Guthi system in traditional Newar settlement
- To study the Sindur(Abir) Jatra Guthi of Balkumari Thimi

Research Methodology:

The research was carried out by following the “Case study method”. The representative of Guthi clarifies all the scenarios of the Jatra system, its value, and even the lagging behavior of today’s public towards Jatra and Guthi. Several field visits were carried out by the author for better verification of data that we get through primary and secondary sources. Similarly, the data for analysis were taken directly from the interview and many more from bibliographic, local, and national news publications. Furthermore, an information questionnaire survey was also conducted among local people.

Literature Review

Under this Guthi Sansthan Act, exclusive power is provided to the Guthi Corporation to manage properties under its ownership. The continuity of local festivals and maintenance of monuments and cultural heritages in the country lies within the jurisdiction of this authority. The Guthi system has been in operation since the Lichhavi era, with the first practice being recorded in scriptures on pillars erected at Changu Narayan Temple..

There are about 4000 different types of *Guthi* altogether (including private *Guthi*). The *Guthi* Corporation was formalized under the provision of the *Guthi* Corporation Act (1964) - under the Ministry of Land Reform and Management and it is run by a board, which is delegated with the management and protection of all *guthi* lands across Nepal.

The funds that support the functions of the *guthi* come from the revenue collected from the tillers of the endowed *guthi* lands. At present there are approximately 67,000 Bighas (approximately 5,836.23 hectares) of fertile land in the Terai belt in southern Nepal, and 535,000 Ropanis (27,226.46 hectares) in the mid hills and valley belonging to the *Guthi* Corporation. However, the collection of funds from these lands has proven to be very difficult. The *Guthi* Corporation has suffered several setbacks over the last 30 years. Namely, after the amendment of the *Guthi* Act (1972), *Guthi Adhinastha* land (land ploughed by tillers) was converted into *raikar* i.e. land that could be sold, which over the years has led to a loss of income(Haworth and Vincent 1974).

Guthi can be categorized into 4 types. They are Sana Guthi, Twa: Guthi (Locality Guthi), Guthi for temples and festivals, and Digu Dyo: Guthi which is for worshipping lineage deity and only family members are concerned.

“Guthi as Intangible Cultural heritage”

When the physical body meets the soul, a human is created. Likewise, tangible aspects of cultural heritage like its structure, architectural style, ponds, etc will remain conserved and lively as long as it combines with intangible aspects of society like its culture and traditions, rituals and activities, Jatra and festive, social practice, skills, and crafts, etc. Any monuments or heritage won’t FIT INTO CONTEXT if intangible aspects were eliminated from it.

While fragile, intangible cultural heritage is an important factor in maintaining cultural diversity in the face of growing globalization. An understanding of the intangible cultural heritage of different communities helps with intercultural dialogue and encourages mutual respect for other ways of life. The importance of intangible cultural heritage is not the cultural manifestation itself but rather the wealth of knowledge and skills that is transmitted through it from one generation to the next.

UNESCO’s 2003 Convention for the Safeguarding of the Intangible Cultural Heritage (ICH) proposes five broad ‘domains’ in which intangible cultural heritage is manifested:

- Oral traditions and expressions, including language as a vehicle of the intangible cultural heritage;
- Performing arts;
- Social practices, rituals, and festive events;
- Knowledge and practices concerning nature and the universe;
- Traditional craftsmanship.

Adding to the first point, there is a proverb in Newari saying “JHI MWASA BHYA MUAEE”; it means “IF WE ARE ALIVE, LANGUAGE WILL BE ALIVE.”

The new recommendations of UNESCO are trying to consider that a city is not only meant to be aesthetically pleasing but should also be strong in terms of cultural, social, and economic aspects. According to Jokilehto, we should now see the cities through the dimension of space and time and not only in plans(Jokilehto 2009). The trends in tourism are also changing since the visitors want to connect with the locals and experience what the locals do as a part of their daily lives. In other words, the conventional way of displaying monuments and establishing museums is shifting and ideas of creating dynamic traditional environments are beginning to prosper. In addition, it needs to be mentioned that when conserving the urban heritage, planners mostly focus on the monuments and buildings and exclude the intangible aspects of the city. These intangibility features provide identity to the city and the functional elements like the monuments and buildings need to be integrated with the intangible assets for achieving proper Heritage Conservation(Steinberg 1996).

The Guthi System Should Be Regarded as Important Intangible Cultural Heritage’ - Prof David Gellner Professor of Social Anthropology and a Fellow of All Souls College in the University of Oxford, It has been reckoned that 4% of all cultivated land was held under Guthi land tenure at the end of the Rana period. The main conflict here arises, I believe, in lands now held by the Guthi Sansthan (Guthi Corporation), which were given to support famous shrines such as Pashupatinath, Swargadwari, and Swayambhu. Ritualists who carry out the activities that comprise the big festivals complain every year that they do not receive from the Guthi Sansthan what they are supposed to receive and that they have to make up the difference by paying out of their pocket.

The National Foundation for Indigenous Nationalities (NFDIN) has recently encouraged different folk groups to study the languages and cultures of groups different from their own, which mirrors at a national level wider international viewpoints, such as the UNESCO declaration on Cultural Diversity (2005) which states that “cultural diversity is as necessary for humankind as biodiversity is for nature” .

The International Information and Networking Centre for Intangible Cultural Heritage in the Asia-Pacific Region (ICHCAP) has called Guthi Sansthan “a major setback to the indigenous community” of Nepal and has diagnosed rapid modernization as the primary reason for the disappearance and bankruptcy of many Raj Guthi and Duniya Guthi. ICHCAP has stated that the guthi system is not formally recognized or respected in the realm of heritage conservation and that it is in danger of extinction.

Hence, Nepal should be applying to UNESCO for recognition of the guthi in the institutional sense as an item of the intangible cultural heritage of international importance so that modernization and change in social traditions and their attributes don't break the continuity of Jatra guthi. If it achieved that, there would be some kind of legal framework for the protection and conservation of cultural heritage.

Case study 1: Balkumari Jatra Guthi

Balkumari temple is located in the heart of old Thimi around 300m north of the Shankhadhar Chowk. The temple was built in the 17th century. King Jagajyoti. Goddess Balkumari is worshiped as one of the Bhairab Shakti. It is believed that only four Balkumari temples should reside in the Kathmandu valley. During the festival, locals gather



and process 32 floats containing idols of different gods and goddesses. People smudge themselves with vermilion powder and sing and dance to the tune of traditional music of Dhimey baja

The term Bisket Jatra is derived from the Newari word "Bi" and "Syaku" and it means "the festival after the death of pythons". There are various stories about the origin of the festival. Once upon a time, a merchant from Thimi used to visit the town of Lubhu. There he fell in love with the princess. The princess became pregnant, she asked the merchant to take her with him. The merchant agreed on one condition that she should bring the goddess Balkumari along with her. The princess agreed and thus then the Balkumari temple shifted from Lubhu to Thimi.

Research finding and analysis:

As per an interview with a member of Kasa Guthi (one of the Guthi of Balkumari temple); Tui Lal Kayastha of Balkumari chariot Guthi, some information was recollected. The Bisket Jatra also called Sindur Jatra celebrated at Madhyapur Thimi was started in **50 B.S.** In the modern era, the sustainability of such Guthi is on the verge of extinction due to changing socio-economic conditions and cultural attributes in society. Mainly people with varying occupation, education system, and daily livelihood has a direct impact on their involvement in Guthi. Based on this research, the following data were extracted about Guthi members of Kasa Guthi. There are 8 Guthi members in Balkumari chariots Kasa Guthi. Their diverse location is shown in the table.

Members of Balkumari Kasa Guthi	Location		
	Grandfather	Father	Son
1. Hari Krishna Shrestha	Thimi	Kathmandu	Kathmandu
2. Shyam Bhakta Shrestha	Thimi	Thimi	Thimi
3. Babu Ram Shrestha (Ghasaley)	Thimi	Thimi	Thimi
4. Bhakta Krishna Shrestha	Thimi	Kalanki	Kalanki
5. Laxmi Lal Shrestha	Thimi	Thimi	Thimi
6. Keshram Shrestha	Thimi	Qatar	Thimi
7. Babukaji Shrestha	Thimi	Thimi	Thimi

8. Deepak Shrestha	Thimi	Thimi	Thimi
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Many years ago, Guthi of Balkumari temple used to have 45 ropanies of land, and an amount of Rs 1,700 was given every year by Guthi Sansthan. But later on, 35 ropanies had already been misused by Guthi members through a procurement called "Ratyauni" remaining just 7 ropanies coming to the present date. Today, the total expense of Balkumari Bisket Jatra tends to amount to nearly Rs 2, 00,000 but provides only NRs 90,000. The guthiyar had a lot of issues and queries regarding the so-called Guthi Sansthan.

Here, the issue is not only the finance that has been provided but also the socio-cultural aspects of society. People are prioritized by their jobs, education, and lifestyle.

Different issue of Balkumari Jatra Guthi

Case Study Name	Balkumari Jatra Guthi (Madhyapur Thimi)	Inference
Issue		
Financial Aspects	Insufficient money given by guthi Sansthan to guthiyar. Misuse of assets of Guthi i.e. Ratyauni(Raikar)	Supplying materials directly rather than providing money.
Social Aspect	Lack of time management and people participation in managing Guthi works.	Reviving Guthi Sansthan regarding festivals, social events and many more
Cultural Aspect	Prioritization and recognition of only tangible aspects as compare to intangible one.	Support from local government and guthi Sansthan combinely to revive our intangible aspects

Conclusion:

To conclude, we can say that the present scenario of the Guthi system has been adversely affected by socio-economic and cultural aspects. So, to minimize the risk of further extinction of the Guthi system, it should be protected both nation and international wise by applying in UNESCO for recognition of the guthi in the institutional sense as an item of intangible cultural heritage. Hence, the physical/tangible aspects like monuments, temples, squares,

etc. can be conserved easier and systematically in a sustainable way. We have to reduce the possible gap

between tangible and intangible aspects to make space around an urban heritage more viable, livable, and sustainable. So, to minimize the risk of further extinction of the Guthi system, it should be protected both nation and international wise by applying in

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HOUSING AS BUILDING BLOCK OF A CITY CASE OF HATTIAN, LALITPUR MUNICIPALITY

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Abstract

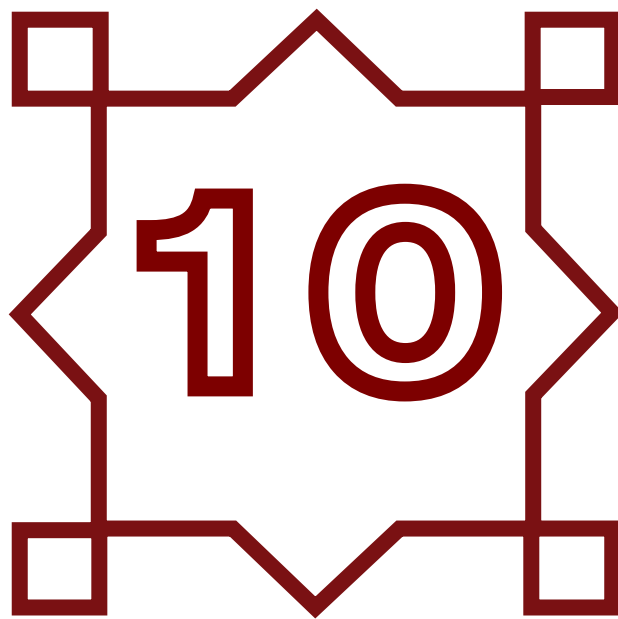
With the pressure of the growing urban population, the urban sprawl is evident in the cities of Nepal. To balance the urban development and create livable cities, new towns have been proposed by the Ministry of Urban Development. The plans and programs are in a nascent stage where execution, especially in terms of housing, is not dealt with in-depth strategy and formulation. While housing is the building block of neighborhood and ultimately, the city, a careful strategic planning is essential. However, the government has not been able to effectively manage the sprawl up until now, while the private sector has been able to take the market demand running a successful real estate housing business. Based on the 2020 National review of Sustainable Development Goals, private sector involvement in urban real estate is not sufficient to address housing demand, moreover, the produced housing raises the question of affordability. The research thus aims to explore the contrast of planned and unplanned housing in the same neighborhood proximity and potential upscaling of planned housing. The research is composite of both qualitative and quantitative kind and falls under pragmatic paradigm where Case study has been taken as research methodology to explore the case area of Hattiban in Lalitpur Municipality. Focused Group Discussion, Interviews and Survey has been taken as methods of research which has led to the conclusion that planned housing with integrated urban facility is emergent need of growing city which should to be accessible and affordable for all income groups.

Keywords: Housing, City, Planning, Affordable

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REVIEWERS

Reviewer 1

Dr. Inu Pradhan Salike



Dr. Inu Pradhan Salike has completed her PhD in Architecture in 2019 under CNRD scholarship. She is also alumni of DAAD scholarship program (for Master's degree) and COLOMBO plan of Indian Embassy (for Bachelor's degree). She is currently working at Department of Architecture, Pulchowk Campus, Institute of Engineering, Tribhuvan University. Her subject of interest lies in Climate change, Urban Disaster Risk Management, Hospital Preparedness for Emergency and Risk management of Cultural heritage. She has guided student research in similar topics and also worked in Centre for Disaster studies in Institute of Engineering. She has experience working with different agency like ADB, Unhabitat, UNESCO, UNDP-Nepal departments of Nepal government in the analysis of Risk Data, Vulnerability assessment of Kathmandu Valley, Hospital Preparedness

for Emergency training etc. She is also vice president of ICOMOS Nepal and worked with Department of archeology-Nepal to analysis the reconstruction of Cultural heritage after 2015 earthquake. She has contributed on behalf of Center for disaster studies in Damage assessment data collection of affected districts during 2015 earthquake for Shelter cluster of Nepal jointly with ACTED initiative. She is also the regional instructor for Hospital preparedness for emergency "HOPE".

Reviewer 2

Dr. Shital Babu Acharya



Dr. Shital Babu Acharya specializes in Urban/Regional Planning, Community facilities and Rural planning. His research alignment is towards learning environment, Community participation, Integration of Function, Placemaking in Urban Design, Urban morphology and Public Private Partnership. Currently, he is a visiting faculty at Himalayan College of Engineering.

Reviewer 3

Ar. Biresh Shah



Ar. Biresh Shah is an Architect, Urban Designer and Lecturer who has been actively involved in the field of Urban Design, Planning and Conservation. He completed his Bachelor's Degree from the School of Planning and Architecture, New Delhi, India in 1984. Later he joined MIT (Massachusetts Institute of Technology), Cambridge, U.S. and completed his master's degree in Urban Design and Housing Studies. Professionally, he has had the experience of working in a variety of projects of different natures nationally and internationally. Besides his professional life, he is a lecturer and profound writer.

Reviewer 4

Dr. Kirti Kusum Joshi

Dr. Kirti Kusum Joshi Specializes in urban and regional planning including land use planning, urban resilience, urban economics, evidence-based policy research, and results-based management. He is a Fulbright Postdoctoral Scholar at Harvard University (2014/15). He holds PhD in urban and regional planning from Tohoku University. ASIA Fellow at University of Indonesia (2009). He is a co-author of "Traffic Congestion and Land Use Regulations: Theory and Policy Analysis" published by Elsevier. Currently he is a visiting Faculty at M.Sc. Urban Planning Program, IOE, TU (Courses: Planning for Urban Resilience, Urban Economic Theory, Urban Informality, Project Development); a visiting Faculty at Master's in Public Policy and Management Program, KUSOM (Courses: Urban and Rural Land Use Planning, Regional Planning and Local Development) and a visiting Faculty at Master's in Natural Resource Management & Development Program, NOU (Courses: Landscape Engineering and Planning). He is also President of Fulbright Alumni Association of Nepal and Associate Editor of Fulbright Chronicles.



Reviewer 5

Ar. Apil KC

Apil K.C. is an accomplished Architect and Urban Planner who has been active in both academia and the professional field since 2012. He currently serves as the General Secretary of the Society of Nepalese Architects (SONA) and runs his architecture and urban planning firm, Urban Park Pvt. Ltd. Additionally, he is a Part-Time Lecturer at the Institute of Engineering and a Disaster Risk Reduction Consultant for the World Bank. In 2013, Apil was awarded a fellowship for the Ando training program in Osaka, Japan. He was also the recipient of a prestigious DAAD research grant in 2014-2015, which allowed him to spend four months at the Institute for Technology and Resources Management in the Tropics and Sub-tropics (ITT) at Cologne University of Applied Sciences, Germany, to conduct research in governance and urban planning. He also received the 2019 DAAD Short-Term Grant. Apil has conducted various research projects at the Institute of Engineering, JICA, UNDP, World Bank, and WWF. His research interests include inclusive planning, integrated and innovative planning practices, urban governance, community-based disaster risk management, and public participation in planning. He also strongly advocates for inclusive urban planning, political economy, and architecture theories. He has written on contemporary issues related to urban planning and resilience city planning in popular newspapers and online portals. In addition, Apil has served as an Executive Member of SONA (2016-2018) and an active member of the Nepal Engineering Association (NEA) and the Nepal Urban Planners Society (RUPSON).



