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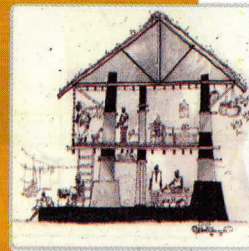
# Protibesh

ENVIRONMENT

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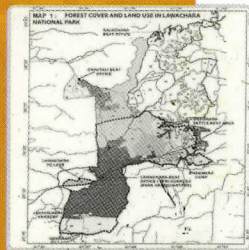
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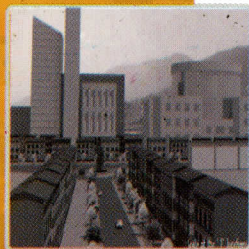
In digenous Architecture



Urban Design



Landscape Conservation



Urban Planning



Bangladesh University of Engineering and Technology, Dhaka



Protibesh is a peer-reviewed research journal published by Department of Architecture, Bangladesh University of Engineering and Technology, in January and July every year. Protibesh, meaning environment, aims to provide a forum for publication of original research and scholarship, for better understanding of the different aspects of and intervention for environment in urban and rural settlements. Protibesh is committed to act as a catalyst to bridge theory, research and practice in the broad field of Architecture.

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## Editorial

Protibesh is a Journal of the department of Architecture in BUET where the papers of Architecture and allied disciplines are always welcomed. It provides an intellectual platform for the researchers and academicians and its appeal has already spread towards east and west by direct involvement of authors and reviewers from different corners of the world. We would like to thank the BUET authority for their financial as well as organizational support. Since last year, 2007, Protibesh has been being published by the officially recognized Editorial Board in BUET. The continuous effort of the members of the Board and the other members of the Publication Committee materialised the dream of the department of Architecture in spite of many limitations. We are also proud to launch the online publication of the back issues of Protibesh from the recent time.

This issue of Protibesh consists of six papers among these first two papers focus on architectural aspects, next two on urban design and last two on planning aspects. The first paper titled "Do Mahela" -an 'Enlightenment' about Two Storied Mud Architecture, by Sajid-Bin-Doza and Mohammad Zakaria Ibne Razzaque, discusses on vernacular mud architecture in the northern region of Bangladesh. Although mud is a popular building material in large areas of the deltaic belt yet academic contributions are rare on this topic. This paper tries to explain the two storied mud architecture, Do Mahela, and its materials' quality, the constructional techniques. It is also concerned about schemes, the planning and organizational features of this vernacular building type. It covers issues like climatic control, liveability and sustainability of the architecture as well as the house form itself. This paper seems remarkable for its attitude to bring this diminishing building method to the educated professionals who work in the domain of architecture. The paper by Professor Dr. Mahbubur Rahman discusses about the condition of affordability for Housing in the Developing Countries. Its focus is on definitional and conceptual aspects of housing as it should be viewed in the context of developing countries. This paper argues that it is often misunderstanding and miscalculation of affordability and underestimation of the components based on wrong assumptions that affect affordability to be considered in detailing a project. This makes such projects inaccessible to the target group and hence unsustainable in the long run. Moreover, the paper suggests an alternative concept of measuring affordability more realistically. Both these papers reflect the strength of localise and contextual quality as well as the conception of architecture.

The next two papers elaborate the aspects of Urban Design focusing on the quality and concept of urban space. The paper by Rehnuma Parveen and Fahmid Ahmed titled 'Impact of new Interventions on the heterogeneity of the plaza "De Coninckplein" in Antwerp city, Belgium' concentrates on rejuvenating the urban plaza with the introduction of new activities and users from other part of the city. The paper introduces a case of Antwerp where a historical urban plaza deteriorated its quality by the misuse of spaces through the antisocial activities due to shifting of business centres. The urban design theme included the regeneration of life in the plaza by improving the physical quality of space and thereby encouraging people to ensure right use of the space itself. The next paper on 'Cultural Space' written by Ms. Farhana Ferdous and Dr. Farida Nilufar elaborated on the conceptual deliberation and characterization of cultural space as urban space. This theoretical paper attempts to determine the characteristic features of 'Cultural Space' in order to visualize that theme in real world and to understand those as urban space. The strength of this paper lies in its wide spread literature hunt as well as in its commentary. It shows that the notion of cultural space is not merely a physical entity but also a perceptual reality. It has revealed a complex construct that works behind the deliberation of cultural space. It also takes the challenge of analyzing the elements of the mental construct of urban space as a manifestation of cultural space which is unique of this writing.

Protibesh always welcome the planning issues as architecture and planning goes hand in hand. The last two papers focus on planning strategy for sustainable forest development in the eastern forests of Bangladesh and aspects of planned urban development in the context of Kathmandu in Nepal. Thus the fifth paper of this issue titled 'Strategies for Sustainable Forest Conservation Practice: A Case Study on Lawachara National Park' written by Md. Shohel Reza Amin and Mrs. Umma Tamima tries to evaluate the Co-management operation towards the goal of sustainable forest conservation practice. The paper tries to elaborate how the participatory planning approach in Nirshorgo Support Project in Lawachara National Park is being endangered due to inappropriate application of the planning concept. Towards this ends it identifies stakeholder's perception about the involvement of Kamalgonj Upazila Parishad in forest conservation for reducing the drawbacks of the existing practice like the present conflict between the Forest Department (FD) and Co-management Committee, inadequate funding and training; and ambiguity in the future course



of the project. The statistical method involving the factor array for the assessment of the planning strategy is also important for the researchers in quest of appropriate methodology for such a qualitative assessment of complex social issues. Finally it suggests that local government is felt to be an active partner by the stakeholders of Lawachara National Park for forest conservation in a sustainable way.

The last paper titled 'Implementing the Proposed Outer Ring Road in the Kathmandu Valley: Creation of new sets of urban problems OR opportunity for the planned development?' discuss about the weaknesses of the proposed Outer Ring Road. The authors, Dr. Bijaya K. Shrestha and Sushmita Shrestha, try to evaluate the planning proposal with a critical planners' perspective. They also suggest an urban design guideline to address the planning implications of this mega project in Kathmandu in case of absence of Master Plan for the city itself. The authors identify the weaknesses of inadequate legislations which fail to regulate the haphazard urban growth and land pooling projects as well as the building construction. The paper identifies not only poor technical and managerial capabilities of the concerned public agencies but also exhibits, their lack of coordination and cooperation. This may result into haphazard development with high population migration and finally resulting into uncontrolled urban growth.

This issue of Protibesh also published reports on two Events that took place in BUET organized by the Department of Architecture. A Workshop was held on Fire Safety in Buildings: role of Architects on 8-9 November 2007 with the objective to raise awareness among the professionals and the related persons regarding the vulnerability of fire hazard in buildings. Prof. Dr. Nizamuddin Ahmed was the key person who delivered a number of lectures on Fire related aspects in building construction rules and legislation. Fire Service and Civil Defense authority provided a complete support on this occasion. On December 10, 2007 another workshop was arranged in the department of Architecture on Project Management for Architects. This event introduced the necessary processes, techniques and tools for accomplishing successful project outcomes, particularly those of a complex nature. It is hoped that such a Workshop may help the participants to be an effective player in the construction industry.

The articles printed here were submitted on time and this issue of the journal was due to be published much earlier. We apologies for causing inconvenience to many by failing to publish the journal on time. However we hope that the objective of Protibesh to contribute new knowledge to the field of Architecture will be achieved through this issue.

We express our regards to all the technical member who reviewed the articles and advised suggestions to each author. We express our gratitude to all the members of Protibesh Committee for their labor and services without whom the issue would not have seen the light.

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## "DO MAHELA" An 'Enlightenment' about Two Storied Mud Architecture Chanduria, Tanore, Rajshahi, Bangladesh

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### **Abstract:**

Facing the devastating flood of monsoon in every year is a common phenomenon for Bangladesh, the large deltaic and riverine country. The process of eradication and rejuvenation is a part of the struggle for existence for the people. They are hard labored, avid, creative, modest and calm. The 'fertile land' is the grace from the God which is rich for agriculture. The spirit of the people comes from that land even if the massive calamities occur repeatedly. The vernacular organization as well as the indigenous architecture is prolific where land, water and people are harmonious in creating the indigenous form of architecture. This paper works as an enlightenment about the two storied mud architecture in north region of Bangladesh, named "Do Mahela", and its materials' inherency, the constructional course of action and schemes, the planning and organizational features, climatic control, spatial environment for both the outdoor and indoor spaces and above all livability and sustainability of the architecture as well as the house form. Documentation and illustrations are other significant elements of the paper. The people of present days are getting away from their traditional and socio-cultural continuity. Rising of modernity and urbanization has declined the rich vigor of the vernacular architecture into a faded and rusted era. It is evident that the innate indigenous architecture of our country would be the rare treasury for us and we are loosing it as we are not yet responsive. We have to awake, revive and reinforce our rich indigenous rural architecture.

**Key words:** Mud architecture, Vernacular organization, Indigenous architecture, Livability and Sustainability.

### **1. Introduction:**

Bangladesh is a riverine country and this great deltaic alluvial land is composed of hundreds of rivers. During the monsoons people of this country struggle with unprecedented flood. On the other side, this flood creates new horizon of hopes and aspirations by siltation.

Historically, Bangladesh was divided into six distinguished divisional States. Among those, the northern part, which is known as North Bengal, was famous as the ancient capital of Gaur ( Sanday J.; Ahmed. N., 1984) named Pundrabardhana or Pundranagar in around 1500-2000 years ago. This area was significant for Buddhist epoch; in later period Hindu, Muslim and British colonies together evolved a traditional and cultural value of this region which itself was very wealthy. As the Gaur or north Bengal is relatively elevated in comparison to the other parts of Bangladesh, so flood is less in this particular region. River Padma is one of the widest river in the country that flows all it's way through the North Bengal, and at the southern end it meets the Bay of Bengal.

Mud architecture of the North Bengal is the synchronized expression of this land, water, geography, climate and people where the nature and life together have created an unparallel relation, which had developed a vernacular style. In this region, the soil is comparatively stable and strong, so construction of two storied mud structure is a common phenomenon. 'Tanore' upzilla which is 20 km away from Rajshahi city is famous for the construction of this generic type of mud structure. This area generally has high land and composed of agriculture (especially paddy) based villages, where paddy field can be seen up to the horizon all over the season. Therefore, people of the area is generally well off to maintain their family. The economic strength of this area is high and the rural governance is structured in a sound



manner so that the people put trust on the administration. A survey revealed that here the community had been mostly developed through marital relationship among the nearest relatives. Thus the kinship has a strong impact on the societal development of this area. The most interesting thing of this area is the traditional attachment of the people with their ancestor's values and prevailing myths. This familial integrity has special impact on the construction technique of the famous two story mud structures of Tanore upazilla.

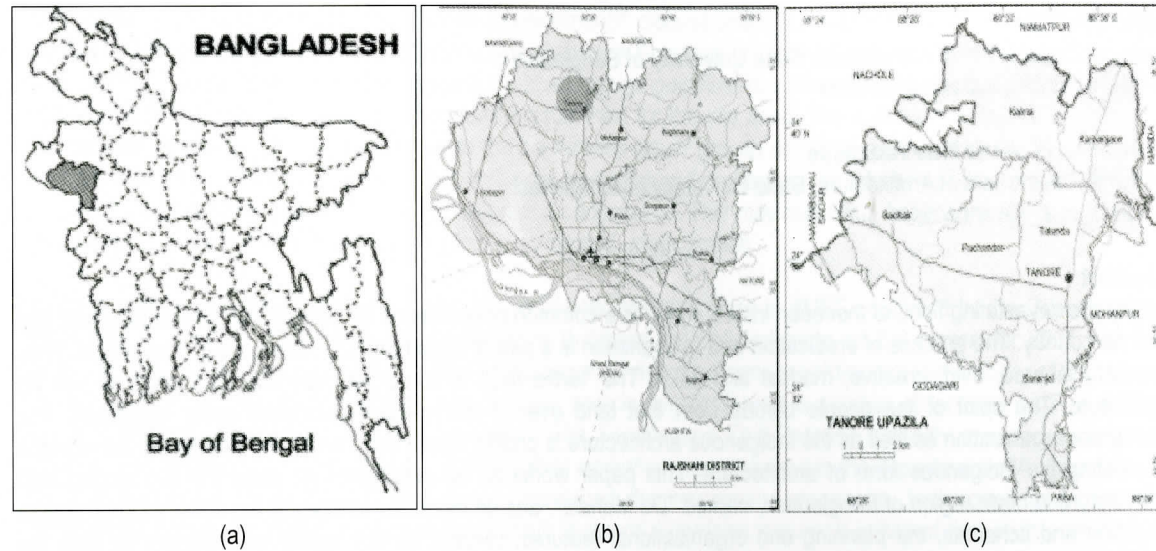


Figure: 01: The site and its contextual setting (a) Rajshahi District in key plan, (b) location of Tanore in Rajshahi District & (c) Tanore Upazilla.

## 2. The Construction Techniques and Course of Actions:

The process of construction of DO MAHELA is unique. At first they prepare the ground by excavating earth with the alignment of built up area. The excavation level is about -2.5 feet down. This excavated earth is kept and is used later on for the wall construction. Foundations of the DO MAHELA starts from the plane of the excavation. The thickness of the foundation is about 72 inch at the base and it is truncated at the top into 48 inches thus the whole foundation becomes tapered. This heavy ring of the tapered foundation is continued around the entire building which is named as KANTHI. It is actually the main underground foundation work. For the construction, earth is prepared with mixing of straw, dry leaves, paddy chip with dust and jute and then the mix of mud is well rammed to get strength and well bonding. These structures remain durable for more than 200 years. And researchers discovered the existence of a house in the study area that was built 150 years before and found still surviving with the eminent glory. The outer massive walls of the house rest on the gigantic KANTHI which acts as the base of the main structure and above the KANTHI the walls are shortened by 6 inches on both-sides. The outer wall diminishes upward, and stops at the height of about 22 feet, where the thickness is about 12 inches. The wall is constructed vertically about 4 feet high at a time to avoid the lateral pressure on it. The slab construction is also pretty innovative like other vernacular structures.

The massive walls are the main supporting component of 1st floor where the main elements of the floor are TEER (rafter), bamboo joist, and the thick tiled mud covering of the floor. First the TEER, which is made of wooden plank, is laid along the shorter direction of the walls, then the bamboos are placed at opposite direction and tied with ropes for strong bonding and slurry of mud is used as adhesive. Finally thick mud tiles are embedded on the floor. The main roof at the second floor level is always built with the wooden members or sometimes with the regular sized bamboos. The ground floor height is kept at 10 feet approximately, and the first floor is kept at 9 feet 8-10 inch. Wooden frameworks are carefully joined to each other and set on the top of the wall. Huge concentrated straw and slender bamboo frames are girded on it at the main roof or CHALA. A triangular shape positive space evolves right under the pitch roof which is used for storage of all kinds of seasonal granary. Both the inner and outer sides of walls are finished with the fine process of hand touched plaster coating called NUREE. The NUREE is the preparation of paste containing a high quality processed mud with vegetable color like kiln burnt red, natural adhesive and a perfect mix of water. Different relief patterns are carved on the mud walls. Window and other openings are arranged by like lintel made of wooden plank or TOCKTA, or sometime with bamboos which is less durable. The doors are of average 5 feet 6 inches to 5 feet 8 inches in height. The reasons for shorter height of doors are the actions of lateral loads and the structure itself.



Figure: 02: (a) DO-MAHELA & neighborhood, (b) view to courtyard, (c) court facing two-storied façade and cantilever PIRA SAJANNI, (d) cantilever balcony and other details, (e) AKSAALI and spatial relation, (f) hanging bird nest, (g) hanging veranda, (h) space beside kitchen & (i) JAHAJI DHAP or single-flight wooden stair

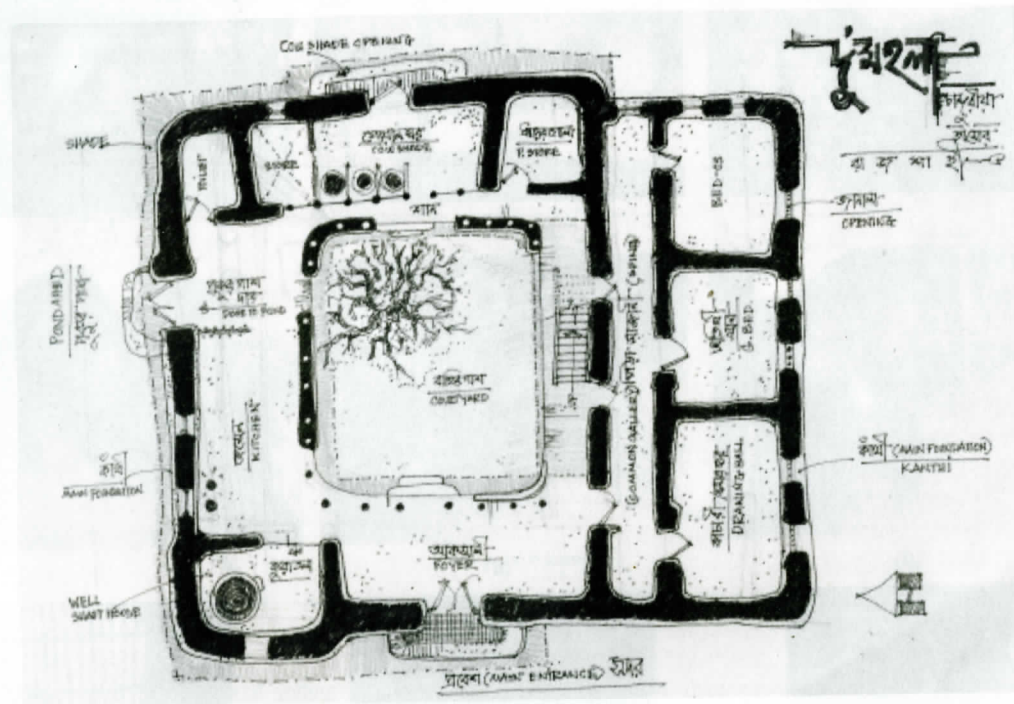
## 3. Planning Organization:

The Plan of DO MOHALA has a regular geometry, which is approximately squarish, where the organization of the houses is focused on the courtyard or BAHIR PASH. All functions are accommodated around the courtyard. The served and the service spaces are separated distinctly and rationally. In most of the cases, it is visible that west side is dedicated to the services such as well, kitchen, store, cow shade and toilets. The formal elements of the house and their corresponding functions are as follows:

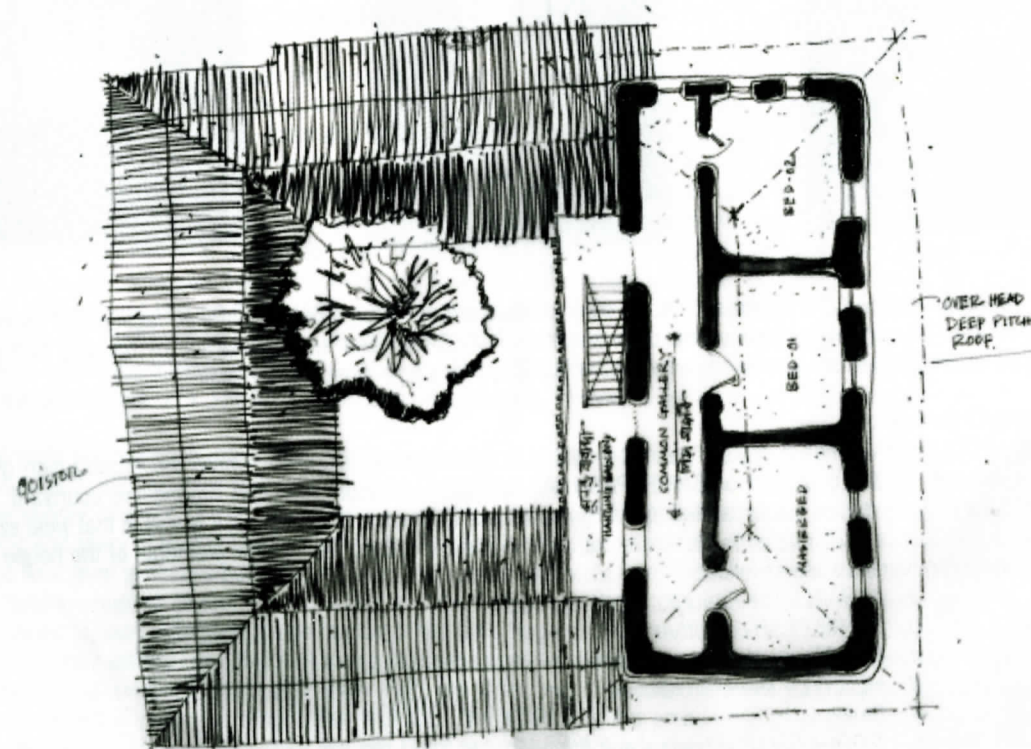
- a. AKSAALI- Pre Function Space or Foyer
- b. BAHIR PASH- Courtyard
- c. KUA TOLA - Well Shaft House
- d. HESHEL - The Main Kitchen
- e. Dining
- f. GOOLA GHAR - Granary and Store
- g. CHOWKI - Bath Space
- h. DHAAP - Wooden Single Flight Stair at the Verandah
- i. PIRA SAJANEE - A Common Gallery and cantilevered Verandah



- j. SHEETHEN - Series of Bed Rooms
- k. BAHIR GHAR- Outside Living Area



(a)



(b)

Figure 03: (a) Ground floor plan of DO-MAHELA, & (b) First floor plan  
The formal elements of the spatial organization are elaborated below:

- a. **AKSAALI \_ Pre Function Space or Foyer:** The entrance space grand in scale, which is used for the accommodation and meeting with the strangers and guests. Floor layed with best quality mud mixing with reddish color in general. Wall is plastered with mud (NUREE). The size of the space is about 15 to 18 feet in length and 6 to 10 feet in width.
- b. **BAHIR PASH \_ Courtyard:** Basically it is a courtyard which acts as the nucleolus of the house - DO MAHELA and spirit of interaction. This space is also used for types of house-hold works and activities. This space is important to keep climatic comfort in the surrounding built form around the courtyard. The length and width of the Bahir Pash is about 20 to 30 feet and 25 to 30 feet. Traditionally people of Bangladesh are used to interact in outdoor space and this courtyard acts as inspiration of all activities.
- c. **KUA TOLA \_ Well Shaft House:** For the daily utility and house hold works water is the essential element for each living being. Well house has many diversified usages; like bathing of domestic animals, washing of all kind of house hold goods and bathing of family members etc. all takes place at the spot. It is located generally at one corner. For better use this space is aligned with the kitchen, store, dining and cow shade.
- d. **HESHEL \_ the Main Kitchen:** This is the space for cooking, dining and storing which is generally 7 to 10 feet in one side and 10 to 14 feet in other side.
- e. **Dining:** A small square space is extended close to heshel and dedicated to dinning. Traditional ritual is to sit on the floor of dining for taking feast.
- f. **GOOLA GHAR \_ Granary and Store:** Storage space for the seasonal granary is Goola Ghar. This store is engaged with paddy and others corns all the year round.
- g. **CHOWKI - Shower Space:** A small cubicle space for taking bath.
- h. **DHAAP - Wooden Single Flight Stair at the Verandah:** A decorative stair is used for vertical circulation, which is generally secured with a double shuttered door. Width of this stair is around 3 feet.

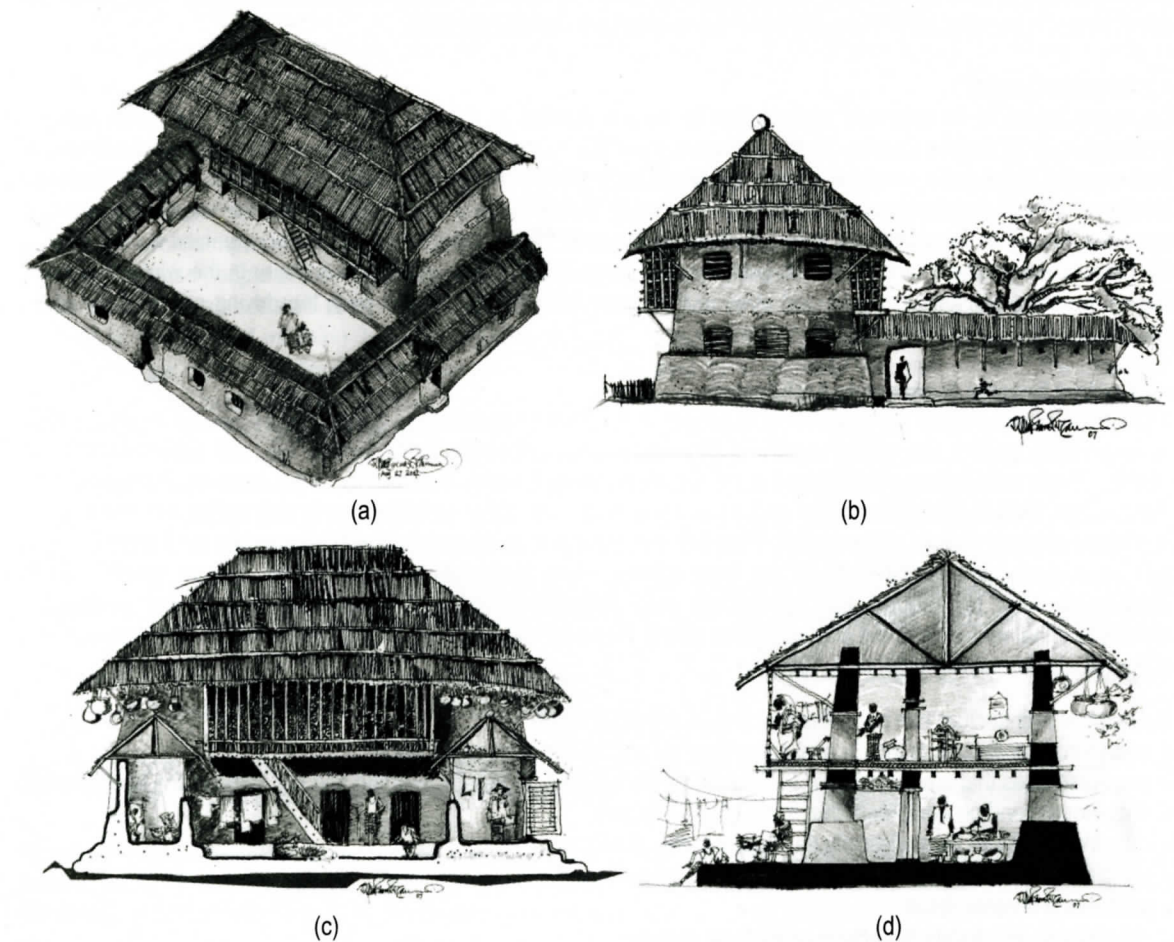


Figure 04: (a) axonometric view of a DO MAHELA, (b) side elevation, (c) longitudinal section & (d) cross section



- i. **PIRA SAJANEE - A Common Gallery and Cantilevered Verandah:** It is the platform in-between the verandah and the rooms. The space is actually addition of one sort of preparatory stage or common gallery. PIRA SAJANEE means ornamental and ceremonial stage or platform where different types of activities are held. This space works as the air tunnel or circulation among other spaces. The spatial quality of the PIRA SAJANEE is different and dramatizes by play of light and shade.
- j. **SHEETHAN - Strings of Bed Rooms:** Conventionally the beds rooms are arranged at the north south direction for proper cross ventilation and adequate lighting. More over PIRA SAJANEE works as the spout of an air tunnel to conduct air circulation to each compartment of bed room.
- k. **BAHIR GHAR - Outside Living Area:** The front house is known as the BAHIR GHAR or Drawing hall. Which is a very common feature of vernacular architecture in this region, This space is also used as sleeping space for guests.

#### 4. A Critical analysis of DO MAHELA

Beyond the construction techniques and the planning organization, this two story mud houses has immense quality which needs to be focused with critical view. The following part of the discussion focuses the special attributes of this indigenous house form of northern region of Bangladesh.

##### 4.1 Inherent Use of the Space

The architecture of 'DO MAHELA' is unique in nature which has developed on the basis of local context and family needs. The use of materials and techniques in this building system has been developed through a continuous process of thousands of years. The building organization and pattern of spaces are the expression of local culture and interaction patterns of the local people. The spatial relationship and the sequence of enclosures (from private spaces to courtyard and courtyard to the community spaces) have been inherited by the inhabitants. Thus here the spaces are inherent and synchronized with land, water, people above all for nature. It has an indigenous meaning. This vernacular development is sustainable in every means of socio-economic-cultural aspects.

##### 4.2 Climatic Control

Courtyard house is an excellent organization to ensure comfort in this hot dry region where the mean average temperature is 35 degree Celsius. So the courtyard plays the most effective role in keeping the house cool and well lit. The massive thick walls work as superb insulators to maintain the thermal comfort at indoor spaces. The heat dissipation is also very convenient for the thick mud walls. So the result is during the summer the interior remains cool and courtyard is comfortable for its daily activities. On the other hand, during the winter interior remains warmer than of the outdoor environment, and the courtyard becomes lively with the glow of shiny sun beam in the winter mornings. During the rainy seasons the projected eaves of the house form help to protect from the driving rain and the sharp pitched roof help the rain water to run quickly.

##### 4.3 Context Specific Sustainable Architecture

It has been observed that the sustainable approach in this form of architecture encompasses several characteristics, however each aspect like environmental sustainability, socio-economic sustainability, etc. are essentially context specific. These aspects are either related to the resources that are locally available, or to the customs and needs of the local people. This building technology as well as the house form under consideration is well suited with the cultural, social and physical factors of the region. Thus one can classify it as architecture with appropriate local technology as well as a sustainable architecture in the local context. Here sustainability is essentially context specific. When considering what techniques and approaches may potentially produce popularly accessible and sustainable architecture that responds to the characteristics above. However, the following criteria can form a basis for assessment of Sustainable architecture (Norton, 1999) -

Sustainable Architecture can be defined as that architecture which,

- makes substantial use of locally available materials and local means of transport;
- uses resources that are available in sufficient quantity to satisfy a general demand and not damage the environment;
- does not depend on equipment that is not easily available;
- uses skills that can be realistically developed in the community;
- can be afforded within the local socio-economic context;
- produces a durable result;
- responds to and resists the effects of the local climate;
- provides flexibility to adapt to local habits and needs;

- can be replicated by the local population.

DO MAHELA gives the sense of sustainable development; the buildings are vibrant to the people as per their need, desire and aspiration. It creates dialog with land, people and nature.

#### 4.4 Value and Validity of DOMAHELA:

The design and organization, materials and methods of construction of the traditional rural house form - DOMAHELA - have clearly established its local character. The indigenous materials, methods and organization have the potential for improvements to meet the growing needs of the people. It seems that these offer the only viable choice for development of the rural habitats of Bangladesh from the viewpoints of both cost and performance. Using uncommon material like wood, concrete, steel, and glass for building construction can waste both money and resources in local areas of Bangladesh where mud is available. Because mud is cheap, accessible, and ecologically sound, it is well known that efforts are underway throughout Africa to overcome negative perceptions of this traditional building material. The use of machinery and the addition of concrete as a binding agent have given new life into the timeless technologies of adobe brick and jalis. Mud bricks can be produced quickly and at cheap rate, and can be made almost as strong as concrete blocks. It has been proved that the actual cost of the traditional house even with modifications, approximately equaled the cost of the constructional improvements to one pucca house. (Muktadir 1985).

The house form of DOMAHELA is introvert in layout as like as the urban house form to some extent. It consists of combined cloister around a courtyard which exists as an extension of the indoor living areas of the residence. The courtyard maintains a direct and convenient functional relationship with the build form around as well as it ensures privacy from the visitors and passerby. It also responds to some other out-door activities like paddy thrashing, cloth drying, outdoor cooking, and so on which are the common characteristics in the daily life of an agricultural community of rural Bangladesh. To perform these functions conveniently the compound of DO MAHELA makes a sense of security around the court-yard.

#### 5. Conclusion:

The DO MAHELA is derived from the lives of people and elements of the nature. A house is lively with some natural observable facts, sustaining towards the statement of future, not to look behind, or to stop, but to the solution of sustainable architecture. The existence of DO MAHELA, now a days, are found in a limited number and a few are surviving because people of the region are being changed by the rapid grasp of urbanization. The regionalism and the innate indigenous architecture of our country is becoming a rare treasure for us, as we are loosing our treasury and strength of "indigenous" meaning, towards which we are not yet responsive. It certainly is about time we understand the value of our cultural continuity which can act as a major catalyst for sustainable built environment. We must look back towards our precious past positively and develop an attitude to identify the simple, sustainable and contextual answers." DO MAHELA" definitely deserves a pivotal position in that respect.

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## Housing Affordability in the Developing Countries: Definition, Concept and Measurement

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### Abstract:

In many developing countries, housing is plagued by huge shortage and substandard accommodation. Lack of affordability widens the gap between ability to pay and the cost of standard housing, pushing a large part of the population into severe housing problems. This paper argues that it is often misunderstanding and miscalculation of affordability and underestimation of the components based on wrong assumptions that affect affordability to be considered in detailing a project. This makes such projects inaccessible to the target group and hence unsustainable in the long run. The paper discusses the importance of affordability in housing, the different methods of assessing housing affordability, consequences of incorrect assessment, and suggests an alternative concept of measuring affordability more realistically.

**Keywords:** Affordability, Income, Cost, Housing projects, Expenditure.

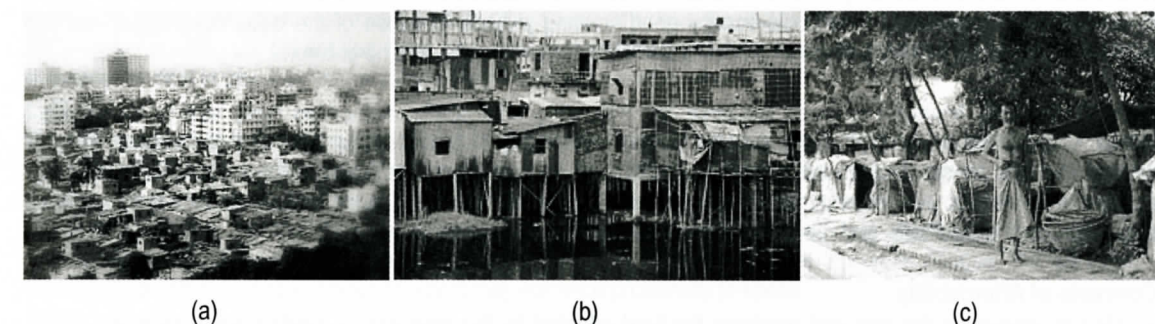


Figure 01: Different kinds of slums and squatter settlement (source: www.flickr.com) photo by (a) M Niloy (b) Michael Foley

### 1. Introduction

Not all households can spend on housing equally. Typically, these expenses that include both capital cost of the shelter and recurring expenses like rent and/or service charges etc. are almost a constant function of income up to certain income level. Thereafter the proportion decreases inversely, more often the upper-income groups spend less part of their income on housing. However, housing expenditure for many may stay low only perforce to accept sub-standard housing. Otherwise in many developing countries the propensity to spend on housing rises with rise in income, more due to the lower-income groups' priorities for subsistence and food and clothing, rather than for the availability of a wide-range of solutions.

### 2. Housing Affordability

Affordability is simply one's ability and willingness to pay. According to Aboutorabi and Abdelhalim (2000), household (HH)-income, housing costs, housing standard, living standard, etc. affect affordability. They defined housing affordability as the ability of HHs to pay for the costs of housing without putting constraint on living. In other way it means the ability to pay a rent and occupy adequate housing that enables them to lead life above the poverty line (Bramley, 1990). Thus affordability requires a balance between the ratio of income devoted to housing and that devoted to costs of living. An imbalance may result due to excessive rent compared to their income in some HHs which put those under financial burden, and creates a fading prospect of affording standard housing (Howenstine, 1993).

According to the above arguments, substandard housing is seen as a symptom of unaffordable cost (Malpass, 1993), which in the first place could be due to lack of access to housing. Such causes i.e. lack of affordability and problems i.e. inadequate housing more frequently exist among the low-income HHs. Thus to make a housing program accessible to the target HHs, the apportioned cost must be affordable to them.

<sup>1</sup> In economics the term rent is commonly used to define the cost of any commodity or service whose supply is limited, for example housing. Hence for housing it also means cost of owning, service charges, financing, etc.



Despite the knowledge of the above and of the components of successful housing projects, a gap had remained between targets and achievements due to weak implementation, low cost recovery, and standards of provision not matching the available financial resources (Lee, 1985). The reasons have been ascribed to wrong-estimation of affordability - mainly for not understanding the extent of the HHs' ability, and particularly the willingness to pay for housing may be affected by other priorities. If affordability was estimated correctly, housing projects could be set at a standard that are affordable and optimizes the use of resources that are expensive in one way and in excruciatingly short in supply on the other way. Such measures could possibly ensure full cost recovery from the beneficiaries, and sustain the project.

A target group can reach an unaffordable project only with subsidy; a continued reliance on subsidy is not realistic for a provider with weak economic base. Subsidy suppresses the ingenious cost-effective solutions brought by the low-income HHs, make them depend on external aids, and thus increase the burden on the public sector (CIVIS, 2003). Moreover, often the rich who could influence the resource allocation gets the subsidized provisions in the developing world, not those who deserve these more.

Historically, much effort went into reducing the capital costs of housing and infrastructure so that the low-income HHs could meet the financial demand with their ability to pay. Whereas instruments like finance or saving have helped to extend the affordability limits only in recent decades. However, most of the lending schemes benefited the upper-income families (Moss, 2003), who could occupy good housing projects because of the class advantages and the common practice of not including those who are not bankable for low income and no collateral.

Even when housing finance has been available for enhancing affordability, authorities have search for physical solutions within a pre-determined cost based on a rigid relationship between capital cost and HH-income. Though estimated cost and payment calculated as being affordable to a target group are linked, corresponding access to any specific scheme to HHs with incomes falling within a pre-set range is restrictive. Such ideas misinterpret affordability, suppress people's capabilities, and reduce the coverage of the housing programs.

### 3. Concepts of Affordability

The policy of recovering the cost and revolving the fund adopted by the international funding agencies in the 1970s characterizes the current low cost housing programs in the developing countries. The concept of affordability-accessibility-replicability was a major deviation from the concepts of earlier projects, the success of which pinned on affordability more than any other aspects. Earlier it was commonly taken that the HH could afford to pay a fixed part of their income, usually 20-25%, for housing. This was considered in the context of both developing and developed countries (Jorgensen, 1977), and the relationship between income and cost was defined rather rigidly.

However, it was not easy to estimate the ratio between income and cost, as Hulchanski (1995) pointed out that people in various situations spend on housing according to changing HH size, age-composition and income, and therefore, affordability could be measured only on individual basis. Even after recognising the varying contexts, estimated affordability was rather generalised with an average ratio. Such average and the real preference and desire of each HH mostly did not match, which led to what Hulchanski (1995) described as 'policy distortion'.

Use of a fixed rent-to-income ratio for defining housing demand, predicting affordability or forming housing policy was not foolproof, when these are based on affordability and demand derived as such. One conclusion using rent-to-income ratio (percentage) was that those paying above a preset 'ideal' ratio was considered facing affordability problem, and vice versa. This idea misled to the exclusion of HHs who were spending less than the 'ideal' amount only because they had to meet other basic priorities, not because 'ideal' housing was available within 'ideal' cost; and inclusion of high-income HHs who nevertheless were willing to pay more for better housing (Bourassa, 1996).

A better understanding of the relation between the cost and affordability begun in the 1980s. Keare and Jimenez (1983) included income, housing expenditure, and propensity to consume housing in calculating affordability. However, interpretation and measurement of these variables face questions. For example, income was taken to comprise no more than the simple wage or documented income of the HH-head only. However, low-income HHs often comprises extended families, and the HH-head may have more than one job, complemented by informal incomes by other family members. BBS (2001) shows that among the lower and middle-income groups, primary earners contribute 70% of the HH-income, and each HH has 1.45 numbers of earners in Bangladesh. Later, the affordability issue started to consider regular earnings of all HH-members, which may increase with time.

Banks only consider regular and documented income in granting loans. But it is now recognised that occasional remittance from outside the immediate HH also plays a part in determining housing affordability. Though the irregular flows of income to urban HHs from either rural areas or overseas are less documented, yet the importance of remittance as a supplementary source of income is not reduced (Keare & Jimenez, 1983). There is also evidence that most of the foreign remittance is invested in real estate due to the lack of other attractive and reliable avenues, and low-level of literacy among many earners (Awaal, 1982). Thus the full extent of housing affordability is often not charted.

### 3.1. Affordability Assessment

It is often difficult to solicit correct income figure, which can often be figured out from the household expenditure surveys. But such findings are often not directly relevant. There are projects where future income sources were considered in calculating affordability (Lee, 1985). It recognizes that many participants will take advantage of the allocated space to make extra income that will increase their affordability (CIVIS, 2003; Daramola 2006). They will use part of the space either for commercial or productive purpose or to sublet to others. Therefore, plot layouts were designed to integrate this possibility in few projects in Cairo, Mexico, Nairobi and Senegal (Ward, 1984).

Recognition of the above phenomenon is important to understand affordability as many of the low-income groups would use the house as workshops. Their occupation or services they offer often rely on socio-economic contacts and goodwill, and revolve around home-based activities often participated by more than one HH-member. Provision of this in the project, which are supported with incentives like space and credit, can enhance the affordability. Construction sector can absorb the mostly unskilled rural migrants who compose the major part of the urban low-income groups. Since a new housing project creates extra jobs, though temporarily, the future settlers could be engaged in the project to reduce the cost in one way, and enhance their affordability on the other.

Experience shows that it is difficult to predict total income, more so when a HH is applying to participate in a project much ahead of when it will actually be occupying it (Ullah, 1987). Even a correct current income figure may vary in future as a HH applying in a housing project is often different in composition from the HH that will actually live there. A changed HH size or number of earners and income may mean changing need and affordability too. Within each income range, a wide spread of income is available for loan payments; simple averages conceal the full extent of affordability as often homeownership prospect may enhance propensity to spend.

The final element of the affordability relationship is the proportion of income a HH is willing to spend on housing, often after meeting other basic needs. Attempts were made to assess part of income deemed affordable by noting essential expenditure on other basic items. The idea of equating disposable income to housing expense remain acceptable until the need for massive subsidies arose when low-income HHs were to be housed at these levels of affordability which often was unrealistic (ADB, 1983). Hence it was reasoned that poorer HHs would be able to pay little for housing after meeting other pressing needs.

These ideas were based on a common sense or expectation, not on what actually was happening (Lee, 1985). England and Alnwick (1982) measured housing affordability by recognizing that food is a priority and major area of spending to most of the lower-income HHs, who often spend up to 60% of income on housing (Jorgensen, 1977). So they derived at a 'least cost diet' based on the adequate level of intake for nutrition and health. But the diet cannot be universally applied as the food habit and prices are not uniform. Almost all concepts failed to recognize that any financial contribution to housing expenses by the low-income HHs would be at the cost of other essential needs, which reflects the willingness and priority of the poor HHs who have high esteem to owning home that provides them many advantages including a legitimate foothold in the contested urban areas (Peattie, 1987).

Howenstine (1993) forwarded a similar idea, where in a 'market-basket' concept income was measured against the costs of living necessities, such as food, clothing, etc. The balance would then be taken as amount available for housing. Another method adopted an opposite approach, shifting the affordability from housing to non-housing costs. In both ways, the balance between housing and living costs was the indicator of housing affordability.

### 3.2. Incorrect Assessment

A good number of plots in self-help schemes had been built up to a level exceeding the theoretically calculated affordability of the particular beneficiary group (Islam, 1987). Some of these came about because the occupant HHs was able and willing to invest savings to extend their homes beyond the limits set by the project criteria. Others could borrow informally, usually on disadvantageous conditions, to supplement the formal assistance.



Most of the surveys on propensity to pay for housing were conducted in near-homogeneous groups. These did not present good data on the rent propensity of the population at large which vary widely (Lee, 1985); hence generalization based on such surveys would lead to gross inaccuracies. The assumption that financial resources of a HH can be equated as a multiple of income, and most of it would be available for housing is also debatable. In the developed countries, housing cost is more often considered equal to 30-36 months' income, but only to set credit limit or calculate recovery and return (Jorgensen, 1977). Housing prices cannot rationally be determined in relation to incomes of the target groups, nor can income be predicted by prices, since there are wide variations between individual HH's propensities to pay and their access to resources.

Down payments required by individuals are calculated as if they can be readily saved out of present income. It ignores the probable existence of any already accumulated wealth. Low-income HHs has little cash savings; yet a few of them could accumulate wealth in other forms that might be put in housing (Keare & Jimenez, 1983). There are evidences that many of them would sell less important household items or less advantageously located rural property in order to generate additional cash for financing housing (Rahman, 1991), often up to 100 times of their monthly income (Helaluzzaman, 1984).

Project authorities often determine the expenditure patterns of each beneficiary themselves. This often leads to distorted relationship between the HH resources and anticipated expenditure on housing. Thus benefits accrue either to the upper-income HHs who did not need those and the privileges do not trickle down, or the lower-income groups are prevented from availing what were meant for them, resulting into gentrification. There is little evidence for the authorities to be able to determine and predict housing costs, the resources available to households in project areas or the proportion of those resources which households would be prepared to spend on housing, with sufficient accuracy to make policy prescriptions.

Objectives of project design generally are i. to mobilize private funds for housing as the public sector cannot hope, ii. to finance a fraction of the total housing needs, minimize public intervention in housing market to the extent necessary to ensure efficient and equitable development, and iii. to be flexible to accommodate variety of needs (ADB, 1983). The conventional approach to affordability cannot meet any of these objectives. Thus poor households are required to commit themselves financially to housing that they cannot afford, and hence get no benefit from those. If the government decides to write off the cost it tantamount to huge subsidies, and often the higher income groups move in i.e. gentrification.

By linking payments to income, some HHs may have been inhibited from paying as much for housing as they would be willing to do. This either deprived them of access to additional finance or challenged scarce public fund into areas where private finance could be better mobilized. The regulation generally requires that HHs must have more than a minimum demonstrated income in order to be permitted to participate in a housing scheme. Through a narrow income definition, some categories of low-income households will unjustifiably be excluded from the projects. The process needs time to be devoted to targeting to gain agreement on the target incomes and to verify that of the participants.

#### 4. Alternative Approaches

Housing programs in many developing countries tend to be characterized by paternalism, bureaucracy and inflexibility, often as a result of the low level of institutional development and conditions imposed by the donor agencies. Greater flexibility in income targeting or other criteria would encourage the already privileged to reap additional advantages. Housing programs are increasingly being structured so that the lower-income HHs are excluded because of the overriding need to ensure full cost recovery, which is not possible with low level of affordability of the neediest groups.

As factors determining housing affordability differ among HHs, different situations of unaffordability emerge in real life. Hancock (1991) identified 4 main categories as i. those paying for less than the minimum standard of both living and housing costs, ii. those paying housing costs above minimum standard, but living below the poverty line in a state of over-consumption of housing, iii. those whose budget for living is larger than the poverty standard, while consuming housing at costs less than what secures the minimum standard (families that have greater desire for living necessities but are living in substandard housing), and iv. those whose income allows them to have housing and living conditions above minimum standards without any problem of affordability.

However, these failed to reflect the HHs' preferences. For example, the second category included all HHs over-consuming housing without distinction between those who are compelled to do so and those who choose to do so when climbing up the social ladder. So Aboutorabi and Abdelhalim (2000) proposed a more precise analysis of affordability cases using the minimum income that covers the cost of standard housing and living as a constraint.

There are several ways to adopt a more enquiring attitude to the question of how HHs views their own affordability problems. The contemporary themes encourage potential beneficiaries to determine themselves what they can afford, taking a less dogmatic approach to income targeting. These follow from the argument that the project designers are not in a position to judge. The main drawback of this approach would be the lack of financial sophistication of the participants and the concern by the financiers of the soundness of the projects and prospect of recovery. Some form of monetary guarantee and a readiness of the authority to intervene in case of default should pacify the elements of risk when financial decisions rest entirely on the beneficiaries.

The above requires the bounds of a public housing program not circumscribed tightly: the rules would be redefined so that a proportion of those HHs previously excluded as being too poor may now be eligible to participate and benefit from the program. The relaxation may question the basic nature of public housing programs structured merely by permitting HHs with above average incomes to benefit from public programs. Thus the less privileged are sacrificed to pragmatism, and the average costs per beneficiary rise. This forced the number of beneficiaries to fall, and housing shortage not to lessen as much as expected.

Safeguards against both eventualities can be built into any program. Authorities can be persuaded to acknowledge that the problems to be solved by any housing project are an integral part of a complex urban system, and to make the majority of urban HHs ineligible to benefit from housing schemes would create as many problems as it solves. By pushing the income thresholds up, wider opportunities for cross-subsidization will be offered within a program. This may reduce the political resistance to projects greatly by inviting some portion of upper-income groups. In schemes, the layout may contain a variety of housing options (size, orientation, payment methods, level and standard of services) to accommodate the above possibilities. Also commercial uses could be introduced to provide a scope for cross-subsidization.

Charges could be based on full recovery so that a greater proportion may be recovered through a voluntary take up of affordable building loans rather than from fixed costs per plot. Looking from the other side, allocation could also be dependent on the proven ability to pay. This could be determined through pre-facto saving, which could be used as down-payment. Applicants could relate their own resources, both immediate and future, to affordable plot sizes and the appropriate type of loan (package). Except for the above, standard conditions, for example, the minimum time of occupation and evicting permanent defaulters, could be applied.

Individual components in settlement scheme need not to be self-financing. Thus the required payment for infrastructure could be set at a level calculated to be affordable to a majority. Residual cost could be recovered through cross subsidy from elements with an optional take up. Fine tuning could be achieved through interest rate adjustments, consistent with those applied outside the project boundary. Many of these features have already been applied in projects worldwide (ADB, 1983). However, they failed to attack the root problem when the projects embodied the judgment by the authorities on the HHs' ability to pay. In many circumstances, it might need to base charges on documented income rather than on proven expenditure patterns. But it is clear that a proper approach to affordability could clear away some of the obstacles of shelter programs.

#### 5. Conclusion

Housing encompasses large direct and indirect costs of numerous components, which are variables in the eventual financial composition of a shelter program. It is axiomatic that the land cost is the first debit from the sum total of what can be afforded. An individual cannot organize Land servicing successfully. The poorer section of the society is politically weak to be able to ensure that they are provided with infrastructure out of regular budgets and thus it is realistic that they themselves finance these.

The poor households in an incremental and informal fashion can build much of the superstructure. However, the cost of materials and some labour will still have to be considered. Unless the households' income rises commensurately, commitment at a later date may add to the present borrowing load. All the resultant management costs also need to be afforded. No cost or service is dispensable, but the standards of provisions can be based according to the affordability of the target groups. Reducing the initial costs would require a greater financial effort to provide for building materials and labour from the participants' resources at a later date.

Thus the gap between the cost of housing and household's affordability remains at the centre of the housing problems, especially for the lower income groups. Housing shortages, lack of services, sub-standard houses, etc. are the results of this mismatch among the poorer part of the population, whose number often exceeds millions in many developing world cities. Most housing-related problems could be solved by reducing the costs of different components of housing in one hand and increasing the affordability on the other hand.



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## Impact of New Interventions on the Heterogeneity of the Plaza "De Coninckplein" in Antwerp City, Belgium.

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### Abstract:

Antwerp, on the river Scheldt, is a port city and the city of diversity and different ethnicity in Belgium. The plaza "De Coninckplein" in Antwerp city, a 19th century establishment beyond the old walled city, is now an integrated part of the expanded present city. The subjected plaza along with its neighborhood areas had lost its prestige in the second half of the last century due to the shifting of business enterprises to the outskirts of the city. Today, People of the city, in general, perceive the plaza as one of the areas with antisocial activities like hijacking, drug dealing, prostituting etc. Mostly the inhabitants of the surrounding neighborhoods are responsible for the criminal activities that happen, which has stamped the plaza as one of the most notorious places in the city. Apart from the creepy reputation, the plaza is equally recognized for the heterogeneity it contains which is very diverse and rich in nature. The city authority is inserting new functions next to the plaza and in surrounding neighborhoods with the intention of changing the 'bad image' of the area through inviting new people and new economic activities. Moving the city library here along with a café is the most significant intervention, which already has taken place. Besides, a design centre, new apartments, renovations and face lifting of many old buildings etc. are being realized simultaneously. The main idea behind these initiatives was to bring new people in, which would reduce the ratio of existing users and thus the antisocial activities of the plaza. The triangular shaped plaza and the surrounding neighborhoods are occupied by diversified immigrant people and communities like the Chinese, the Africans, and the Nepalese etc. Besides, two streets used to be occupied by the prostitutes and homosexuals (Gay Street), which does not exist anymore. The concerned plaza seems a strange place with the seats, the basketball field, the restaurants, the telephone shops and finally, the new "Permeke" library building with a cafe. The plaza owns two distinct characteristics, which are antithesis to each other. This is a place with full of antisocial activities, which are not desirable and at the same time with full of heterogeneity, which is desirable. This paper presents the study based on three days extensive field survey, which reviewed the probable impact on the renowned aspect of the plaza-the heterogeneity while changing the "bad image" through new interventions.

**Key words:** Heterogeneity, Public plaza, Impact of New Intervention, Cultural Diversity.

### 1. Introduction:

The plaza "De Coninckplein", the subject of this paper is a distinguished and well-known plaza in Antwerp city of Belgium. The plaza owns two distinct significant characteristics, which are antithesis to each other. The people of the city in general perceives the plaza as a place with full of antisocial activities, which is undesired; at the same time a place with full of heterogeneity, which is appreciated. The plaza along with its neighborhood areas in 19<sup>th</sup> century was a prestigious place to live in with major radial roads, the prestigious station as a node for public transport and it counted with the presence of shops with local and supra local functions (DE MEULDER, 2003).<sup>2</sup> In the second half of the last century the economic power of the area started to get weakened with the shifting of the successful companies to the outskirts of the city. This phenomena lead to an increase of unoccupied houses, which was eventually taken over by the poorer section of the society, especially the immigrants. Today, the housing infrastructure is outdated and the density is four times higher than any other part of the city, which is fairly understandable why. Although the area

<sup>1</sup> Official Brochure of Stad Antwerpen, 13 Feb, 2003, p-4

<sup>2</sup> DE MEULDER, Bruno, HEYNEN, H, DEVOS Rob (ed), VANMARCKE Luc (ed) (red.), "The role of space in processes of exclusion and normalisation. An explanation based on a detailed case study (De Coninckplein, Antwerp)", Uitsluiting - Insluiting. Kanttekening bij een beleid van sociale integratie, pp. 59-88, 2003.



gradually lost its elite status and started to house poor multinational immigrants, but on the other hand, it gained a unique quality of heterogeneity with rich diverse ethnic composition and activities. The plaza area is also known as a place with antisocial and undesired activities such as hijacking, drug dealing, fighting, prostituting etc. These activities happen mainly by the inhabitants of the surrounding neighborhoods, which has given the area a 'bad image', which the concerned authority is trying to change. However, the city authority inserted the city library with a café next to the concerned plaza with the intention of bringing new people in, primarily the Belgians, along with some other interventions like new apartments, renovation and face-lifting of many old buildings for studio apartments, introducing polices and surveillance camera etc. Reasons for these interventions were to upgrade the environment and security condition, as well as, to change the tarnished reputation of the area.<sup>3</sup> The question is, whether, the intentions are right to the context and, more importantly, how these are affecting the much coveted heterogeneity while changing the 'bad image' of the plaza.



Fig 01: Map showing the triangular shaped plaza with surrounding urban tissue. (Source: City authority)

## 2. Methodology:

The study explicitly stressed on the issue 'Heterogeneity' which was investigated through different rapid methodologies i.e. interviews, mapping, observations and photography documentation, which was best suited to the moment. Rapid methodologies, applied to answer ethnographic research questions, refer to certain methodologies that are useful to get quick data especially when there are time limitations and based on which an acceptable conclusion can be drawn. "As researchers, we have had to decide what would work best in a range of settings and have adapted our methods to fit the specific site and problem"(LOW,2005)<sup>4</sup>

Rapid methodologies greatly depend on primary sources of data collection rather than secondary sources like literature review. This particular study gathered necessary data & information mainly through individual interviews, participants' observation, mapping, photographic documentation & a limited literature survey. Collected data was then analyzed to get the answer of the research question. However, it is important to remember that rapid methodologies are especially useful to be applied in highly culturally diverse area for quick understanding and the result should be considered as a strongly probable one instead of looking for 100% accuracy.

"Rapid assessments [choose] timely, focused & qualitative information at the expense of 'scientific' sureness of results through strong probability sampling." (LOW, 2005)<sup>5</sup>

<sup>3</sup> Official webpage of Antwerp City Authority: [http://www.acturban.org/biennial/ElectronicCatalogue/Antwerp/antwerp\\_conic.htm](http://www.acturban.org/biennial/ElectronicCatalogue/Antwerp/antwerp_conic.htm), last retrieved 3rd March, 2008

<sup>4</sup> LOW, M SETHA, TAPLIN, Dana, SCHELD, Suzanne, Rethinking Urban Parks, public space and cultural diversity, University of Texas press, Austin,2005, p-175

<sup>5</sup> MANDERSON 1997, 2 quoted in LOW, M SETHA, TAPLIN, Dana, SCHELD, Suzanne, Rethinking Urban Parks, public space and cultural diversity, University of Texas press, Austin,2005, p-185 .

## 3. The concept of heterogeneity and the plaza:

The success or failure of a public plaza depends on many aspects such as, heterogeneity, cultural diversity, controls, security, management, design decision etc. A new or critical decision on any of the above aspects can turn a successful plaza into an unsuccessful one or vice versa by enhancing or reducing the diversity of the place. In fact, aspects like successful control; management and good design for a plaza can be achieved through sensitive policies and decisions. But, ensuring heterogeneity and cultural diversity, the most important aspects of all according to many researchers of this field, is rather more difficult and is dependent on many other variables like the social and economic status of the users and neighborhood people, accessibility to public transport and so on"(LOW,2005)<sup>6</sup>. Cultural diversity is important since it is one of the essential components of heterogeneity, which can significantly enhance the liveliness and vibrancy of a plaza through diverse uses and activities by the different cultural groups. Interestingly in recent days, conserving already present cultural diversity is rather getting more arduous than providing or ensuring it. According to Low, Taplin, Scheld (2005),

*"In this new century, we are facing a different kind of threat to public space not one of disuse, but of patterns of design and management that exclude some people and reduce social and cultural diversity"* "(LOW,2000).<sup>7</sup> Heterogeneity or the state of being heterogeneous is like a precious gift for any public place since it provides the unique opportunity of getting acquainted with different cultures and activities and this is one quality, which is not easily available.

The survey confirmed that the concerned plaza still has a unique heterogeneous character, not only due to the presence of people from at least twenty different countries but, also, for diverse and vibrant activities. The heterogeneity of people seemed very high in the place. One can find people from Middle East, Asia, and Far East to Africa along with Europeans. The signboards on the buildings, mainly shops next to the plaza, were adorned with Asian, Oriental, Arab or African names and decorative elements. The posters of African Churches, Rasta shows and Communist Labour Party on De Coninckplein were stating the strong heterogeneous character of the area. Although these people hardly mixed with each other, still they all together formed a vibrant environment.



Fig 02: Figure showing activities by different group of people

It was astonishing to observe during the survey that these different groups on the plaza showed no or very little interest in each other. As one of the Croatian inhabitants of the neighborhood said,

"I don't have any interest about any people in the plaza and normally I never talk to anybody."

Different user groups never mingled, even though they coexisted on the plaza at the same time, still all the groups had expressed a close attachment with the plaza, which seemed an interesting dimension of De ConinckPlein where all the

<sup>6</sup> LOW, M SETHA, TAPLIN, Dana, SCHELD, Suzanne, "Rethinking Urban Park" University of Texas press, Austin, pp-01 ,2005.

<sup>7</sup> LOW, M SETHA, "on The Plaza, The Politics Of Public Space And Culture." University of Texas press, Austin, 2000.



groups are attached to a common place still not behaving as one. Of course, the new interventions already have started to bring new people in and to exclude some old ones. The interviewed Library users admitted that they do not feel any attachment or belongingness to the plaza, for them it is a non-space. Whereas, on the other hand, the former addicts believe that they are not welcomed in the place anymore.

A feeling of temporality was quite evident in some people probably because, many people there are from Eastern Europe came due to economic reasons for a short period of time living in the neighbourhoods around the plaza. Most of these people cannot speak English or any of the local languages such as Dutch or French. These comparatively new ethnic groups, who are there mainly on temporary basis, are making some neighbourhoods very fragile and temporal since they did not express any belongingness to the concerned place and get easily involved in many undesired activities such as illegal drug taking and fighting. But there were also some people such as the Chinese, who have been living there permanently for more than a decade and to whom the sense of belongingness to the neighbourhood is very much important.

#### 4. The Virtual Boundaries of the plaza:

As it is mentioned earlier, different areas of the plaza were occupied by different user groups and functions, which resulted in several different spaces within a single place. Different activities at different times of day and night took place at their own designated corners that hardly go beyond limits. This phenomenon created a kind of mental or virtual boundaries. For instance, the people who were waiting for trams at the tram stop next to the library never stepped down into the plaza or towards the wooden raised platform at the opposite corner, whereas, on the other hand, the platform was always occupied by the junkies (drug addicts and alcoholics) who never approached the other corner of the plaza. Also, the youngsters playing basketball limited themselves within the basketball court area. Besides, other people who came to the plaza for recreation and other purposes used only the seats next to the basket ball court at the middle of the plaza and not the seats next to the wooden platform. The people waiting on the plaza and tram stop for opening the library, junkies hanging around at the plaza corner, playing basket ball, all are totally different kinds of activities within one boundary. The surveillance camera restricted the junkies to be concentrated at the corner and their activities, to some extent, were controlled.

According to a former drug-addict, currently there are about six groups of users of the plaza, the Addicts, the Ex-addicts, the Moroccans, the Youngsters who play basketball, the Library users, the Africans and the "scum that come to get drunk and fight at night". The pattern of gatherings and different activities happened on the plaza are shown in the following maps, which had been developed following rapid methodologies during the field survey.

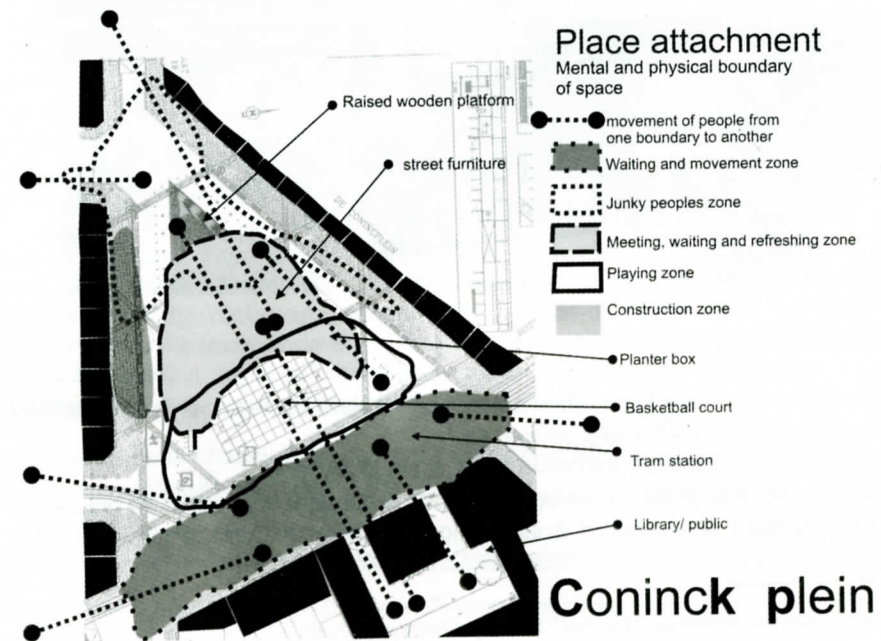


Fig 03: Showing the virtual boundaries of the plaza (prepared by: Fahmid Ahmed, Field survey)

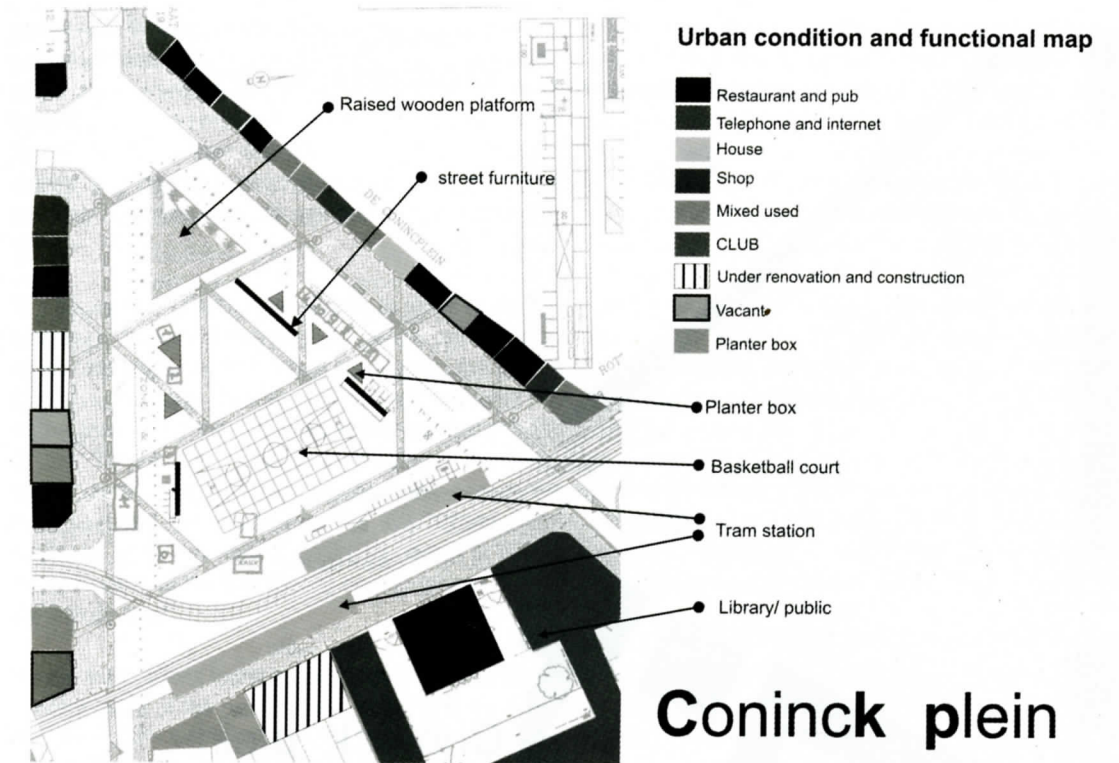


Fig 04: Showing the functional map of the subjected area (prepared by: Fahmid Ahmed, Field survey)

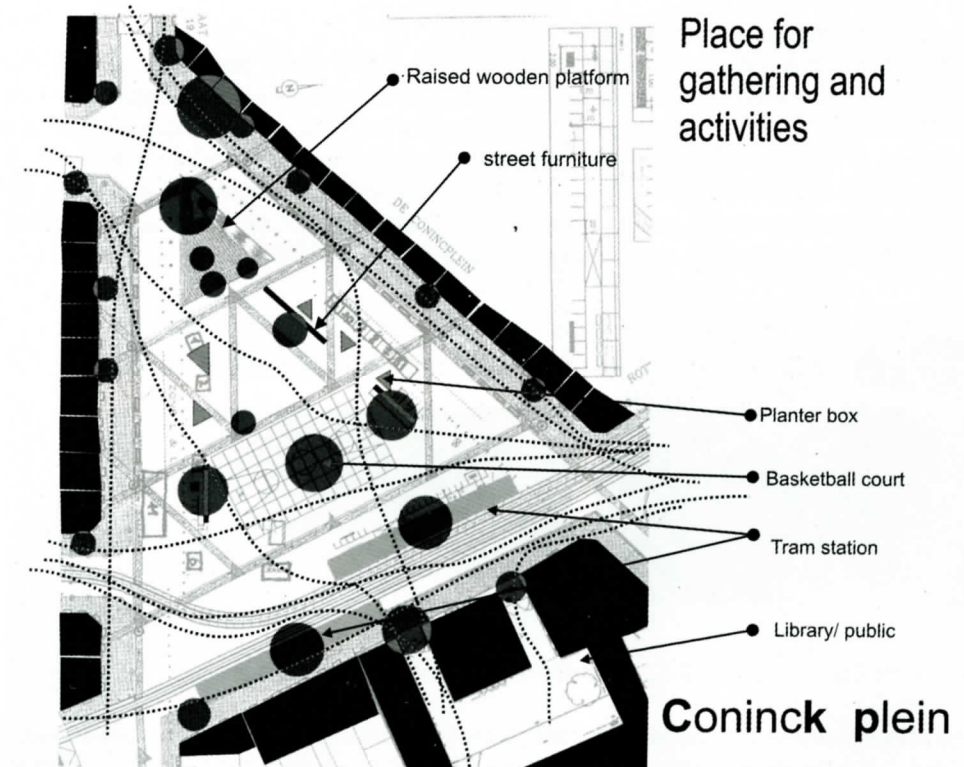


Fig 05: Showing the gathering places and flow diagram of people in the area (source: Fahmid Ahmed, field survey)



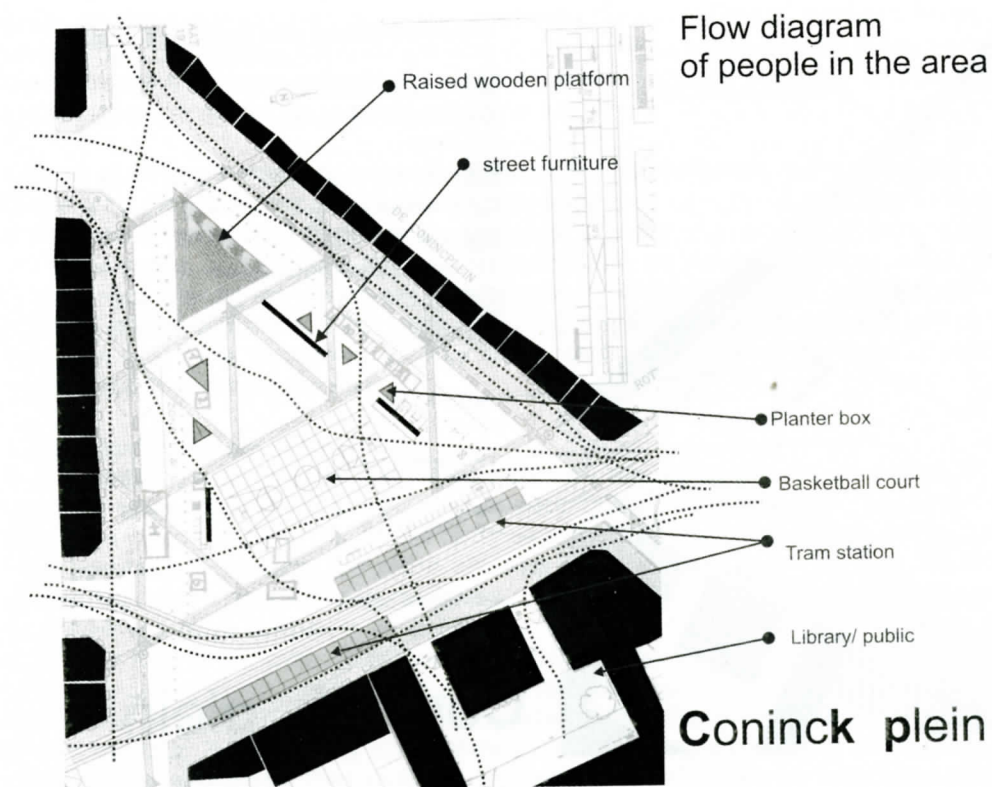


Fig 06: The pattern of movements (Source: field survey)

5. The new Interventions and the process of Transformation:

The process of transformation had already been started, which was fairly evident during the survey, with the new development of posh café and restaurants, the renovation of old dilapidated buildings to new exclusive apartments and design centre, the introduction of surveillance camera etc. Certainly these are the physical transformations which were more evident than the social or mental transformations. The people interviewed during the survey confirmed, many of the old activities and inhabitants had become non-existent. The cheap shops and restaurants for the immigrants, the beauty salons and shops for the prostitutes who used to live in the nearby neighborhoods and to deal with their clients at different spots on the plaza are now past. Also, the homosexuals are diminishing in numbers.



Fig 07: The new plan for the Coninckplein and the surrounding neighborhood (source: city authority)

The survey also found different opinions and interests about the concerned area many of which were antithesis to each other. Some people said, "I like the place and the plaza, and I use the library every time, it is a very good place for refreshing". Other people said "it is a very bad neighborhood, police do almost nothing to those junkies, they sit in front of my shop and the customers do not feel comfortable to come inside that hampers my business a lot". The people

gathered in front of the library came only to use the new Permeke library building and the cafe or to get the tram. Most people of these two particular groups do not use the plaza and said that they do not feel comfortable to use that. Lots of people crossed the plaza to take a short cut but did not pause on the plaza. The drug addicts and the alcoholics were always found moving in groups. The children came every afternoon for playing in the plaza. The café of Permeke library was found very expensive for high class people. The plaza was found under surveillance all the time by the camera and the police, which turned the place into an unfriendly one for certain groups. The new restrictions by the city authority of closing the café and restaurants in the early evening turned the plaza dead and even more vulnerable at night.

The library users found were diverse in terms of age and sex. It seemed, also the users interviewed supported, more and more women, young and old people are coming to the Library, although, the users dominantly represent the middle and higher income group and majority are the Belgian people. Asian people were lesser in number in the library even though a large number of permanent residents near the library are the Chinese. According to a user (Romanian) of the library and the Coninckplein, "a lot has changed since the Library has come". According to a woman from Ghana, "before, if you said, you are going to the Coninckplein, everybody would stare at you." Another woman from same country said, "nothing has changed." According to another European woman, "the square is now better; it is more safe and lively," although she was bothered about the traffic. According to some library users, "Accessibility cannot be better than now since the tram stops in front of the Library". According to the Librarian "everybody thinks that the new one is better than the old one. Emphasis on the combination of functions makes the Library a success. People like it more now".

Hence, the opinions found about the interventions were different and contrasting in nature. Most of the library and non-resident users of the plaza believe that it is a positive move. On the contrary, the resident users think that the library does not fit with the neighbourhood and has nothing to do with the people who actually live there. The sense of place is different for different groups of people using the plaza, and the heterogeneous people truly expressed diverse interpretation regarding the interventions and the subsequent consequences.



Fig 08: The new intervention for the Coninckplein and the surrounding neighborhood



### Examining the impact of the interventions on heterogeneity:

This study initially examined the physical impact of the new interventions by the Antwerp city authority, which were meant to improve the reputation, security and physical quality of the notorious plaza "De Coninckplein". Later, it investigated the impact on the aspect heterogeneity, the unique and appreciated character of the plaza while changing the 'bad image'.

The new interventions were to bring some new people into the concerned area and to restrict some old users that all together in turn will change the 'bad image' of the area. The new library building truly has managed to bring a lot of new people on the plaza, but these new people do not use the plaza and remain aloof within the proximity of the library building and tram stop. The building has increased the economic value of the plaza neighborhoods and indirectly affecting the heterogeneous character of the plaza users by compelling the poor multinational immigrants to leave the place. Although, Majority of the library workers and users who mostly are Belgians expressed their satisfaction about the new building pointing that the old library building was not attractive, where as, the new one is a modern building designed by an eminent Architect, which is fascinating indeed from aesthetic and functional point of view. Besides, the accessibility is also better since the tram stops just in front of the library building.

The initial aim of bringing in more new people into the area, especially the Belgians, is successful, but the associated intention of their using the plaza, which eventually will lessen the prevailing antisocial activities, has not succeeded. Several reasons could be pointed out; first of all, since the tram stop is just next to the library and the plaza is on the other side, the library users do not need to cross the plaza. If the library was situated at the other corner; it possibly would have more impact on the issue of using the plaza since it would make the library users to cross the plaza, and the possibilities of using the plaza by some of them would increase. Now, they can avail the facilities without being a part of the plaza. Secondly, the library is closed at 5:00pm and most of the antisocial and undesired activities such as drugs taking, hijacking, dealings with the prostitutes and fighting occur in the late evening; therefore, the library users hardly can affect these activities. It is true that the previous overall creepy perception of the plaza in general city dwellers' mind has been reduced now; but, that is due to the constant surveillance by the camera and police, not due to the presence of more new people. On the contrary, the new decision of closing the restaurants in early evening has enhanced the vulnerability of the area at night since the plaza becomes dead without any people. Previously, it was more people in the restaurants and shops with the prostitutes and their clients for buying their stuffs and so on. The new interventions could not stop most of the antisocial activities; though it is quite successful to stop some of the undesired activities according to city authority. It is rather more successful in obtaining the other intention of the interventions, which is to increase the number of Belgians in the area.

On the other hand, the neighborhood people and the existent plaza users next to the library showed least interest towards it. It was quite clear that the new interventions could not be integrated with the surrounding area and the library itself is acting like an isolated island. Both the library and the expensive café failed to attract the interest of the neighborhood people. Instead, it along with other ongoing renovation projects has increased the price of the land and accommodation. As a result, many of the old inhabitants are moving out of the area. On the contrary, more and more upper class people, mainly the Belgians, are getting in. Here comes the impact on the heterogeneous ethnic composition. The plaza and the surrounding neighborhood, which was the place for poor immigrants, of course with a bad name, are getting beyond their reach and a transformation slowly towards a place for upper class people is taking place. It can be said almost without any hesitation that this will reduce the precious heterogeneity of the plaza since the Belgians or rich Europeans, instead of people from almost every continent of the world with their different cultural activities, will occupy the plaza more. It could have been more contextual and sensitive if, it considered the status and affordability of the surrounding inhabitants, since the executed and planned ones are so expensive that can only be availed by the comparatively wealthy group, which shows a kind of ignorance to the context and the users of the plaza. Where as, the interventions incorporating and integrating the local people would ensure the preservation of the unique heterogeneity of the plaza, which is an essential and important parameter for a successful and sustainable public space. The plaza "De Coninckplein" is always transforming from one event to another at different times of the day and night, which gives it a vibrant character and, has the potentiality to play a vital role for integration, communication and sharing among different ethnic groups. The only thing it needed was to improve the security but not at the cost of heterogeneity, not by excluding the poor immigrants. It is for sure that the proposed interventions did not consider the existing inhabitants; rather, it targeted the upper class of the society, which will enhance the reduction of the cultural diversity.

### 7. Conclusion:

In a nutshell, the study can be concluded by saying that; the new interventions are gradually transforming the concerned area from poor multicultural immigrants' neighborhood to an upper class monoculture neighborhood, which holds the danger of becoming less heterogeneous. But, as it is mentioned earlier, a vibrant and successful plaza or urban space possessing heterogeneity in the long run can bring many positive results not only to the micro level like individual users but also to the macro level such as the society. This is such since it offers people the opportunity of getting acquainted with diverse people and activities, which enable them to broaden the horizon and to increase the potentiality of communication, and thus they are better groomed to serve the society. The new interventions by the concerned authority were not as sensitive as it could be. The only intention was to erase the 'bad image' of the plaza and ignore the other aspect, the unique heterogeneity. It didn't consider the current users of the plaza or the inhabitants of the nearby neighborhoods rather; it constantly injected such functions that only can be availed by the nonresident wealthy section of the society, primarily the Belgians and directly excluded the poor immigrants from using them, even the appearance of the library is very posh and unfriendly. In fact increasing the number of the Belgians was one of the agendas of the city authority.

Finally, the new design of the plaza and the library building with cafe seems a kind of forceful gentrification, which couldn't be integrated with its surrounding context. It is true, the disrepute of the plaza concerning antisocial activities has been lessened, even the status to some extent has already been upgraded, but, at the same time, it has been failed to conserve the heterogeneity of "De Coninckplein".

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## Cultural Space - a Conceptual Deliberation and Characterization as Urban Space

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### Abstract

This paper concentrates mainly on the conceptual deliberation of Cultural Space based on review of prevailing ideas in the literature. The focus of this paper lies on the characterization of cultural space particularly as urban space. It has been revealed that like the word 'Culture' which indicates the way of life of people, cultural space is also concerned about both people and their environment within a range of natural and cultural values. The notion of cultural space is not merely a physical entity but also a perceptual reality. This paper attempts to determine the characteristic features of 'Cultural Space' in order to visualize that theme in real world and to understand those as urban space. It has been identified that concept of cultural space encompasses the collective memory and historical layering of spaces where the additional structure provides memory, identity and imageability of collective existential consciousness. In addition to the perceptual component; the cultural space comprises of social and physical attributes of space.

**Key words:** Culture, Cultural space, Urban space, Perception of space, Concepts of space.

### 1 Introduction

Culture is about a group of people who share a set of values, beliefs, worldview symbol system, which are learned and transmitted from one generation to the next. (Kroeber and Kluckhohn, 1952) Culture is the way of life of a people while the spatial framework of urban spaces could be called cultural space. The rules, which guide the organisation of space, time, meaning and communication; show regularity because they are linked systematically to culture. The concentrated focus of this paper is to unveil the concept of culture and cultural space in urban spatial pattern. In this sense, the conceptual deliberation of cultural space of this paper is mainly established through review of similar concepts and taking arguments from the prevailing literature. Besides these, this paper tries to converge on the governing issues of culture, which influence the spatial structure of urban spaces. It also attempts to pinpoint the qualitative as well as perceptual, spatial component of culture and cultural spaces to consolidate the attributes of these spaces.

### 2 Culture and Cultural Space

The word culture, from the Latin root "colere" (to inhabit, to cultivate, or to honour), generally refers to patterns of human activity and the symbolic structures that give such activity significance. According to Raymond Williams 'Culture is one of the two or three most complicated words in the English language'. (Williams, 1983: 87) Different definitions of 'culture' reflect different theoretical orientations for understanding, or criteria for valuing human activity. Anthropologists most commonly use the term 'culture' to refer to the universal human capacity to classify, codify and communicate their experiences symbolically. (Wikipedia, 2006)

One of the important definitions of 'culture' is given by Margaret Mead in 1937;

Culture means the whole complex of traditional behaviour, which has been developed by the human race and is successively learned by each generation. A culture is less precise. It can mean the forms of traditional behaviour, which are characteristics of a given society, or of a group of societies, a certain race, a certain area, or of a certain period of time. (Kupiainen et. al, 2004)

The term culture itself has its own history. The primary meaning of culture is the cultivating of natural growth and by extension in recent times; it has come to mean the cultivating of human mind. Culture therefore refers to behaviour



patterns socially acquired and socially transmitted by means of symbols. It includes language, tradition, customs and institutions. (Thapar, 1987) Furthermore, culture in relation to tradition links the past to the present. It has therefore a historical context, which is as significant as the cultural form itself. Culture is always a collective phenomenon, because it is at least partly shared with people who live or lived within the same social environment, which is where it was learned. It is the collective programming of the mind. In this conception, culture is an ever changing entity not a static one; culture is learned not inherited; it derives from the social environment, not from the genes. (Segers, 2004)

'Culture' is a mental construction rather than the innate property of a certain community. Cultural theory considers culture as a system consisting of a number of subsystems, such as economic, educational, religious, technological and artistic subsystems. Each subsystem is based on all activities as performed by participants. This means that a systemic approach is interested in all the 'actions', in all the 'activities' as performed by the participants within a particular subsystem (Segers, 2004).

According to Young, culture is the way of life of a people. It consists conventional patterns of thought and behaviour, including values, beliefs, rules of conduct, political organisation, economic activity, and the like, which are passed on from one generation to the next by learning and not by biological inheritance. (Young, 1994) Therefore, culture is the system of meanings, values regarding which we interact. The organisation of space, time, meaning and communication are systematically linked to culture. (Rapoport, 1977: 14) (Fig: 01)

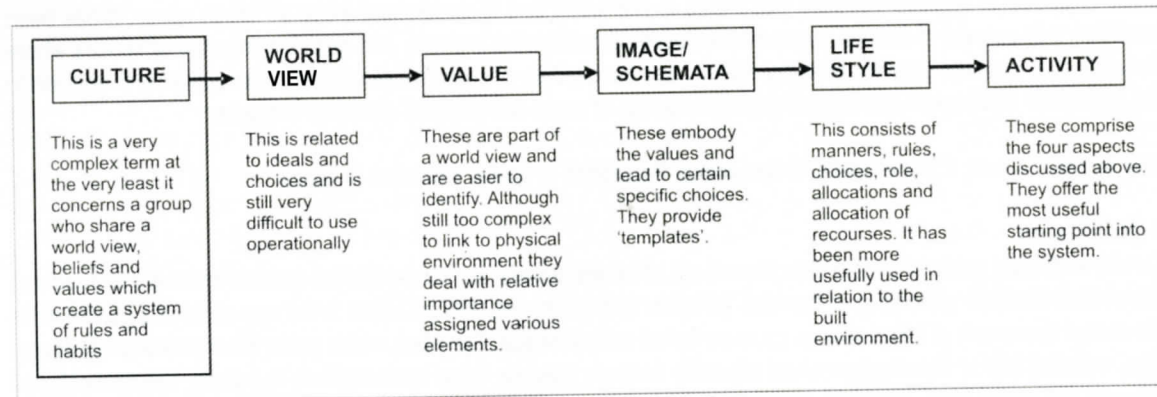


Figure: 01 Concept of culture influencing lifestyle and activities. Source: Rapoport, 1977

In this regard, it can be summarised that culture is learned and depended on being brought up within a framework - a **cultural space**. Second, a large component of culture is below the level of conscious awareness. Third, cultural patterns structure both thought and perception. In the past, cultures were often thought of in quite rationalistic ways as conscious creations. Similarly, there were more or less explicit rankings of cultures from the most primitive to ours. Modern thinking about culture is in some ways consistent with psychoanalytic ideas, especially with respect to the limited and subordinate role of intellect, with the development of the modern culture concept the intellect itself came to be viewed differently. It was now understood that people acquire the ideas, beliefs, values, and the like, of their society, and that these cultural features provide the basic materials by which they think and perceive. (Young, 1994)

Society is the structure of their interaction, and cultural space defines the location of an individual (or group) in this structure. The term cultural space is concerned about both people and their environment within a range of natural and cultural values. The word '**cultural space**' define not only a certain type of space where cultural activities are perform rather it is more related with the pattern of space, the environmental characteristics and above all the surrounding people within it. Behavioural and psychological spaces are also related to cultural space defined by various groups in terms of varying categories, taxonomies or domains (Rapoport 1977: 14). Therefore, cultural space is not any specific entity of space rather it is individual or collective perception of spatial quality of cultured people. These types of spaces are profoundly involved with the ways of life of people. As culture is always a collective phenomenon, these spaces should be communal space of different activity.

### 3. Urban Space as Cultural Space and the analogous spatial concepts

Cultural space can be composed with the social interaction and social activity pattern of certain spaces which sometimes acts as an extension of public spaces even in the street. Hence, social activities depend on presence of others in public spaces and occur spontaneously as a direct consequence of people moving about and being in the same spaces. According to Jan Gehl, a social activity takes place every time at least two people are together in the same space for social interaction. (Gehl, 1996) The most wide spread social activities directly involved with passive contacts in urban spaces. Thus the urban spaces are also cultural spaces where human interaction and cultural activities take place.

By definition, urban spaces indicate those discrete spaces of cities (i.e. of urban areas) which are used by the public - a counter concept of 'private spaces' where public access is restricted. Typologically, linear urban spaces are streets or roads, and fat open spaces are 'squares' or 'plazas' (i.e. the Chawks in the oriental concept). Beyond these two groups, green open spaces (i.e. the parks) in cities are also considered as urban spaces characterised by the very presence of people and being situated in urban areas.

Beside such categorization of urban spaces, some other analogous spatial concepts of cultural space are also present. To define cultural spaces where human interaction and cultural activities take place at first we need to comprehend some conceptual perception with analogous explanation of cultural spaces which bear similar concept as urban space.

#### 3.1. Social Space

In a Durkheimian sense, social space is a person's position in 'sociological space' and specifies nothing about his situation in physical space. (Durkheim, 1890) Social space is determined by the individual's perception of his social world and not by the objective description of his social relationship by any observer (Buttimer, 1972: 283). Rapoport defined social space which is used by social groups and reflecting their behaviour patterns, perceptions (Rapoport, 1977). However, definition of 'social space' commonly emphasis corporate and neighbourhood oriented activities (Ley, 1983:102). Social space complies with the concept of cultural space as both encompass the social and spatial factors in physical space and combine both the subjective and objective dimension of space. Cultural space is also used by some social group and reflecting the behaviour pattern and perception of individual by cultural activities. Like social space, cultural space also synthesizes the perceived and interactional dimension of space.

#### 3.2 Neighbourhood Space

"A group of people who occupy a discrete territory constitute a neighbourhood" (Blower, 1973:51). In the literature, neighbourhood is an area where a group of people live in proximity. In 1968, Mumford stated that the neighbours are people united primarily not by common origins or common purposes but by the proximity of their dwelling. Neighbourhood is primarily a social phenomenon arising from cohabitation in a physical area. Thus, neighbourhood space is also an extension of social space as well as it contains some important aspects of cultural space. As cultural space is more than social phenomena like neighbourhood space, both social and physical factors are important in it.

#### 3.3. Human Space

The concept of 'human space' indicate a small-scale physical space in the vast areal extent of a local area being defined by a perceptual boundary but involving a low level of social interaction. It is identified that the large physical extent of many 'localities' in cities are subdivided conceptually into smaller segments by the inhabitants on the basis of their cardinal direction or noticeable differentiation (Nilufar, 1997). Hence, human space is more involved with the perceptual boundary of inhabitant in smaller segment. Similarly cultural space also contains the perceptual boundary of inhabitant but it deals in large-scale social level with maximum social interaction. To some extent, cultural space is a synthesis of small-scale physical space in large social context.

#### 3.4 Community Space

Community is a fundamental concept of human association in sociology. Hence, in community space, a group of people is living together in one particular area that is considered as a unit because of their common interests, background or nationality. Thus community space is more involved with particular group of people in neighbourhood scale where as in cultural space people of common interest, background and nationality meet in urban space. In this sense, community space in urban scale is much more involved with the basic concept of cultural space.



### 3.5 Existential space

Christian Norberg-Schulz defines existential space as a relatively stable system of perceptual schemata, or image of the environment. Existential space has its roots with the existence of human perception. Social and philosophical sensitivity is the two possible sources of information for developing the perception of existential space. Therefore, Architectural space and Existential space are very much similar, where the first one denotes the subjective character of space and the other one objectively define man-space relationship. Like existential space, cultural space has its roots with the existence of human perception. Beyond its social and philosophical concept, cultural space objectively defines man space relationship from human perception level.

Hence, to perform the activities whatever social or cultural we need some spaces. According to these spatial concepts, cultural space resembles some important components of Social, Human, Neighbourhood, Community and above all Existential Space. From the above discussion it reveals that like social space, cultural space is reflecting the behaviour pattern and perception of social group by cultural activities and constitutes the social component. Characteristics of Human space are emphasized by synthesizing small-scale physical space in large social context and put emphasis on the physical indices. Cultural space is the extended variety of community space also; where people of common interest, background and nationality meet in urban space. It is clear that some important components of the above discussed spatial concepts are physically, perceptually or socially overlaps with the notion of cultural space.

### 4. Qualification of Cultural Space: it's components and attributes

The cultural space, that intermingle the history and layering of traditional urban space with the orientation and recognition, create existence of sense of place. This layering of space and culture create interconnected environment with human perception. To find out the inner meaning of cultural space these perceptual aspects need to reveal first. Thus, to make a clear deliberation of the urban spaces as cultural spaces the following sub sections tries to entangle their various components and their attributes. Among those, the most important character is how we perceive the existence or spirit of a space with our cognitive values and norms. Then come the physical character and social meaning of such spaces. Not but the least the existence of human perception in social, philosophical as well as psychological level is deeply rooted with the man space relationship in urban scale that also underline the attributes of perceptual components.

#### 4.1 The Perceptual Components

The meaning of cultural space more refers to the human perception rather than any concrete entity of spaces. It has been described that although the physical components of all cities like house, street, gathering places, cult buildings, plants and so on are same; it is the term culture that varies from region to region. In fact, the inner meaning of spaces especially urban spaces may differ from culture to culture as well as to the geographical setting of cities. In this sense, Rapoport claims that the nature of meaning and relationships among the elements with the associated human behaviours may differ under different socio spatial situations (Rapoport, 1977:15). This proposition supports a view, which conceives human societies as spatial phenomena. It is therefore believed that, in urban areas the built environment also plays an important role in the formation of social behaviour pattern in local areas. It is now understood that social characteristics and activities of people have association with the physical aspects of urban spaces and other levels of urban environment.

Built or physical environment can be seen as setting for human activities and their perception to the materialistic world that determine human behaviour. Therefore, if the design of the environment is seen as a process of encoding information, then the users can decode it. If the code is not shared, not understood or inappropriate by the society, the environment does not communicate (Rapoport, 1977:03). Claude Levi-Strauss also noted that the city achieves a balance between natural and artificial elements; it is an object of nature and a subject of culture. Hence, people's perception of a space relates to their culture and their individual memory of place. The memory association plays an important role to define the actual perception of spaces incorporated with the tradition and lifestyle of individual community. Subsequently, to define and reveal how cities really are experienced, comprehended by their users; the effects of values, images, schemata, and human behaviour on the shaping of urban form; some perceptual components of cultural space that are assumed to be related with the perception of cultural space need to be revealed. Hence, the perceptual components are as follows.

**4.1.1 Sense of Place:** The relationship between people and environment is transactional. Space is more than three-dimensional physical space (Rapoport, 1977:12). The environment is made up of combination of physical and social features; the sense of place is an experience created by the setting combined with what a person bring to it. In other

words to some degree we create our own places, they do not exist independent of us (Steele, 1981). Sense of place is a particular experience of person in specific physical settings and surroundings of spaces within the social settings of culture (Figure 02).

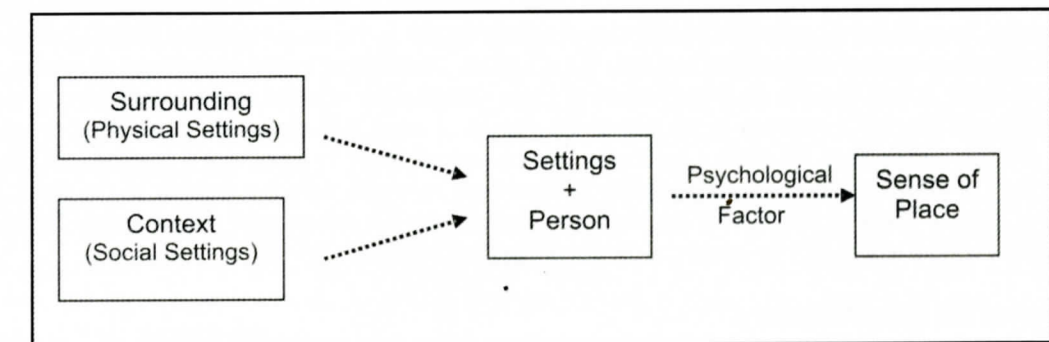


Figure 02: Sense of Place.

Source: Steele, 1981.

**4.1.2 Memory:** Colloquially memory means the process of recalling facts or experience. Memory is one of the most important requirements of cultural space and memory association with time can create a sense of place. According to Aldo Rossi, the city itself is the locus of collective memory of its people, and like memory, it is associated with objects and places (Rossi, 1982). In general, the history of a place is its collective memory.

**4.1.3 Orientation:** Memory as knowledge or recognition is the presupposition of orientation (Schulz, 2000). In other words, one must know where he or she is going if they want to get there. Orientation is extremely important and basic to the behaviour of all motile organisms- animal and people. It is linked to survival, sanity and cultural variability (Lynch, 1960). The spatial organization of a place helps to orient people associated with memory in a particular situation. It is also key element in defining the physical entity of a person within a space.

**4.1.4 Perception and Cognition:** 'Perception' is the most fundamental mechanism linking people and the surrounding environment, where all pervasive process involved in entire man-environment interaction (Rapoport, 1977:178). The term perception comes from the Latin Percipere to take hold of, to feel, to comprehend. The term 'cognition' has been used to describe the way in which people understand structure, learn the environment, and use the mental map to negotiate it (Rapoport, 1977:31). Cognition from the Latin word for getting to know refers both to the process of knowing and understanding the product; the thing known (Rapoport, 1977:109). Perception deals with how information is gathered and obtained, while cognition with how it is organized (Figure 03). The perceptual and cognitive image of cultural space should be perceived by the user of that space.

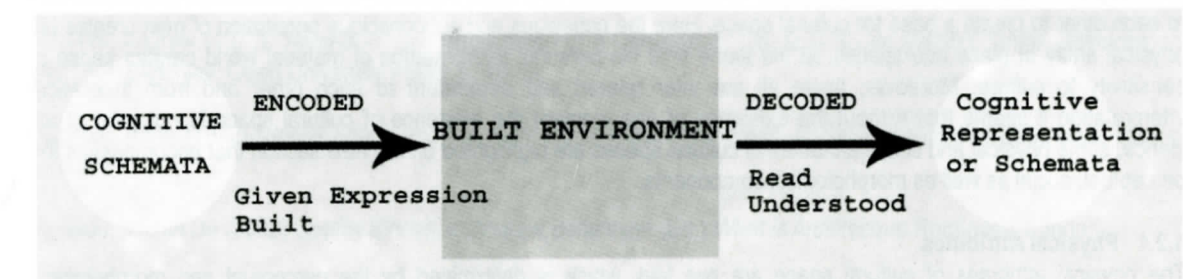


Figure 03: Cognitive schemata of Built Environment

Source: Rapoport, 1977

**4.1.5 Identification and Imageability:** In the identification of any given environment, memory performs a fundamental function whose particular atmosphere is spontaneously recorded, even before we have become acquainted with its indicative markings, i.e. those characteristic motifs that give it a well defined configuration. In other words, it is necessary to know how of a place in order to recognize its Identity (Schulz, 2000). 'Imageability' is the quality of a physical object, which gives it a high probability of evoking a strong image in any given object. Therefore, a workable image requires three things. First, the identification of an object as a separate entity called 'identity'. Second, the image must include the spatial or pattern relation of the object to the observer and to other object. Finally, this object must



have some meaning for the observer, whether practical or emotional. Identification and imageability is directly related with orientation of space.

Hence, the qualitative relationship between human perception and space as well as the abstract qualitative aspect helps to notify the spatial and configurational attributes of cultural spaces. In this case, Heidegger denotes that, space does not indicate an abstract mathematical continuity, but a qualitative relationship among concrete places (Heidegger, 1971). Orientation in fact refers to cardinal direction of space, identification indicates to the concrete forms of the environment, and memory symbolizes to the emblematic images of which it is composed. If one does not orient oneself, one can neither travel nor reach a destination, and one cannot reach an agreement if one does not identify with the spirit of place. Moreover, it is not possible to experience belonging without a memory of the constituent features of a place. These all components are profoundly involved with the perception of cultural space. Therefore, cultural space is more related with the perceptual component besides the social and morphological aspects.

#### 4.2 Physical and Social Attributes

Cultural spaces vary from region to region, from city to city, from area to area and even from person to person. Each space must have some distinct identical value. Every places and elements must be distinguishably different before they can be used in orientation, in the subjective definition of areas, in subjective distances or incorporated into mental maps. (Rapoport, 1977: 229) Therefore, cultural space is not any specific entity of place rather it is individual or collective perception of spatial quality of cultured people. These types of spaces are profoundly involve with the ways of life of people .Cultural space is the concoction of all previously the mentioned spaces. As culture is always a collective phenomenon, these spaces should be communal space of different activity. From the above discussion of analogous spaces , it is clear that cultural space is more involved with the perceptual dimension of man space relationship. Hence, cultural space is not any certain type of space where cultural activity is performed rather it is combination of three most complex words; Man, Space and Culture. (Fig 04)

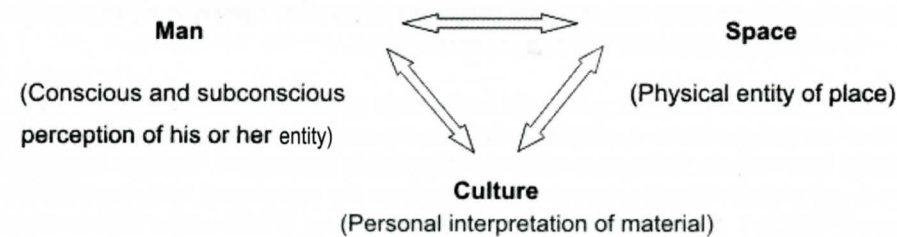


Figure: 04 Tri fold relationship of man, space and culture

The diagram shows a threefold relationship where man, space and culture all are interconnected and complementary to each other to create a base for cultural space. Here the conscious and subconscious perception of man creates his physical entity of place into spaces, at the same time his personal interpretation of material world creates sense of sensitivity to culture. Moreover, these all are inter related and dependent to each other and from theoretical interpretation it seems that without the existence of one element the existence of cultural space is not valid at all. Hence, some physical and social attributes of cultural spaces are highlighted on the next section that encompasses the perceptual, social as well as morphological components.

#### 4.2.1 Physical Attributes

The physical attributes of cultural space are two fold, which is determined by the perceptual and morphological features of spaces. Although the morphological features are to some extent tangible, the perceptual components are indefinable in nature. Morphological indicators of space exhibits expressive character on the other hand, perceptual features of cultural space are more qualitative and intangible hence, to be perceived by cognitive process. It has been discussed that cultural space is an extension of social, community, human as well as existential space and some significant properties of these spaces are present as an essential features of cultural space. Hence, the morphological properties of a space can be determined by the characteristics of its urban fabrics, prominence of location, street network and open space system. On the other hand, perceptual component is very much related with the memory, orientation, and imageability aspects and the perceptual quality of cultural space is revealed by the historical layering and enclosure feeling of space.

#### 4.2.2 Social Attributes

Society plays a vital role in setting up an urban environment. The attributes of cultural spaces to some extent create an order where order involves a relation, or a set of relationships, of a definite sort. Social order in urban spaces can be recognised and described on careful observation by a set of varied characteristics and attributes. Cultural space in any society is much more related with the social space hence, social order of urban space is important to understand the society. Other than physical order, social order in some cases may not be manifested spatially, but once the social order of the spaces is understood, an apparent chaos becomes comprehensible. The structure of any society can be characterised by the social as well as cultural attributes. Cultural activity of any spaces is a social phenomenon and different social attributes like ethnicity, activity, behaviour pattern and neighbourly relation of community etc. are indices that determine the quality of cultural space. People of different ethnic background use urban space differently therefore, their cultural use should be different. On the other hand, community of densely built up urban areas behave differently hence, their activity of urban spaces can be reflected in their neighbourly relation in social as well as cultural spaces. The social aspects that are responsible to shape the cultural spaces are therefore necessary to point out according to the following aspects:

- Population density and neighbourly relation
- Religion and Ethnic background of people
- Community Activity, Behaviour Pattern and Use of Cultural Space.

#### 5. Conclusion

In conclusion it can be stated that the entire discussion therefore, related to the use of space and how we perceive the existence or spirit of a space with our cognitive values and norms. The cultural space, that intermingle the history and layering of traditional urban space with the orientation and recognition, create existence of sense of place within the urban areas. This layering of space and culture create interconnected environment with human perception. By interpreting the phenomenological aspects of cultural space with physical and social attributes, as well as the identity of this space in urban settings can be revealed.

Apparently, it seems that the historical layering of urban space, as well as the strong memorable perceptual images produces an interwoven social system that helps to promote cultural space in urban areas. As culture depends on people and their environment; cultural spaces in urban areas are distinct in character where memory, orientation, identification, sense of place are overlapped and physical-social attributes are interconnected with surrounding people and environment. This super layering of spaces combines the characteristics of urban spaces and thus generates different types of cultural spaces.

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## Strategies for Sustainable Forest Conservation Practice: A Case Study on Lawachara National Park

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### Abstract

The rapid growth of population in Bangladesh along with unplanned urbanization causes a serious threat to the marginal forest resources of the country. The degrading situation spurred government effort to designate and establish a number of protected areas (such as national park, wildlife sanctuary and game reserve etc.) with significance of biodiversity under the provision of Wildlife Preservation Act, 1973. The Nirshorgo Support Project (NSP) was designed to develop, promote and implement forest co-management model in order to conserve the forests of the protected areas. This paper examines and appraises the existing conditions of Nirshorgo Support Project in Lawachara National Park of Moulvibazar. Based on field visits and interviews of the stakeholders of the project this paper tries to evaluate the Co-management operation towards the goal of sustainable forest conservation practice. Towards this ends it identifies stakeholders perception about the involvement of Kamalgonj Upazila Parishad in forest conservation for reducing the drawbacks of the existing practice like the present conflict between the Forest Department (FD) and Co-management Committee, inadequate funding and training; and ambiguity in the future course of the project. As an act in response, local government is felt to be an active partner by the stakeholders of Lawachara National Park for forest conservation in a sustainable way.

**Key words:** Co-management approach, Sustainable forest conservation, Stakeholders' perception.

### 1.0 Introduction

Forests form an integral component of the biosphere and essential for the stabilization of micro and macro climate of a country. Unfortunately, forests are being destroyed at unprecedented rates due to unsustainable and illegal logging, agricultural expansion, population pressures, large scale industrial and infrastructure projects, and national policies that prop up forest conversion to other uses. To avoid this unprecedented rate of forest destruction, a sustainable forest management practice is required. The goal of such a sustainable forest conservation practice is to maintain and enhance the long-term health of forests' ecosystems while providing ecological, economic, social, and cultural opportunities for the benefit of present and future generations. Collaboration among diverse stakeholders can strengthen such management efforts by resolving conflicts, pooling resources, and enlisting community support (Wikipedia, 2008).

The government of Bangladesh has made an effort by gradual shifting of the existing practice of the forest management approach from the Forest Department (FD) who was in a traditional custodian's role to a more participatory approach. Forestry Sector Project (FSP) has been implemented with a major policy shift in favor of a participatory management of the country's forests and protected areas (FSP, 2000). The Nirshorgo Support Program of the FD was adopted in the form of a 'co-management model'<sup>1</sup> in 2004 with the financial support of USAID in order to conserve the forests of the protected areas by building partnerships between FD and main stakeholders from local community (NSP, 2006a and 2006b). Such a shift in management approach is hoped to be sustainable as a forest conservation strategy which needs to keep a balance between improvement of the production by the community and the supply of the forest products for the community itself. Therefore, the paper aims to explore the activities of

<sup>1</sup> Collaborative management or co-management is defined as a situation in which two or more social actors negotiate, define and guarantee amongst themselves a fair sharing of the management functions, entitlements and responsibilities for a given territory, area or set of natural resources. An equitable sharing of benefits and costs of protected area's protection and management among the stakeholders is, therefore, an important part of co-management approach. An effective linking of socio-economic and ecological incentives and biodiversity conservation will be instrumental in eliciting stakeholders' participation in this approach.



Nirshorgo Support Program in Lawachara National Park at Kamalgonj Upazila, Moulvibazar District and to evaluate those towards the objective of sustainable forest conservation in Bangladesh.

**1.1. Lawachara National Park and Emergence of Nirshorgo Support Program (Nsp)**

The total forest in the north-eastern part of Bangladesh i.e. Moulvibazar district is known as West Bhanugach Reserved Forest (WBRF) and Lawachara National Park is only a part of the WBRF. (FSP, 2000) (Map 1) During the initiation of the project, the Neshorgo Support Project of USAID made a land use plan of Lawachara National Park which included 250 hectares available forest (at that time) along with additional 281 hectares proposed extensions. So, the existing area of Lawachara National Park is 1531 hectares. The parts of the existing forest include the following. (Table:1)

**Table: 1- Existing Forest Area**

Major coverage of natural primary forest	80.6 hectares
Long rotation plantation	1110 hectares
Short rotation plantation	187 hectares
Bamboo and cane plantation	25 hectares
Village area	129 hectares
<b>Total</b>	<b>1531.6 hectares</b>

The major coverage of natural primary forest includes the Forest Research Institute, unconverted betel leaf plots and small patch of forest. The long rotation plantation (Teak, Jarul, Chaplash, Garjan etc.) covers an area of about 1110 hectors and short rotation plantation about 187 hectors. Bamboo and cane plantation covers an area of about 25 hectors. Out of the forest, the village area of 129 hector among which about 110 hectors are covered by betel vines area and the rest are homestead lands. FSP (2000) compiled lists, based on studies, which include a number of species of plants and animals: about 176 plants, 4 amphibian and 6 reptiles, 246 birds and 20 mammals, and 17 odonate insects (Ahsan, 1995).

However, the population pressure and their demand on the resources of the forest have endangered the existence of the forest and its rich eco-system. In practice sustainable forest conservation is the attainment of balance - balance between society's increasing demands for forest products and benefits, and the preservation of forest health and diversity. This balance is critical to the survival of forests, and to the prosperity of forest-dependent communities. Forest managers must assess and integrate a wide array of sometimes conflicting factors - commercial and non-commercial values, environmental considerations, community needs - to produce sound and sustainable forest plans.

At present it appears difficult for Forest Department to maintain the cherished sustainability with their traditional one way management system. Nirshorgo Support Project (NSP), the five-year management plan, was prepared for three protected areas (Lawachara National Park, Rema-Kalenga Wildlife Sanctuary and proposed Satchuri National Park) under the USAID supported NSP (2003/04 - 2007/08) (NSP, 2006a and 2006b). Nirshorgo support project in the Lawachara National Park has some specific objectives: develop a functional model for formalized co-management ; create alternative income generation opportunities for key local stakeholders; develop policies conducive to improve protected area management and build constituencies; strengthen the institutional systems and capacity of the FD and key stakeholders; build or reinforce the infrastructure to enable better management and provision of visitor services at co-managed sites; and design and implement a program of habitat management and restoration for pilot protected areas.

The attempt to manage forests in a sustainable way usually faces many hurdles. Efforts to overcome these hurdles at the policy, legal and project level have met with mixed success. The persistent stresses on Lawachara's forests are pressure from timber concessions, from overcapacity in forestry related industries and from illegal logging. Inadequate

<sup>2</sup> In Lawachara National Park, the Co-management committee consists of 15 members elected by the Conservation Council following a structured guideline. The members are - Range Officer (convener), three representatives from forest villages, two from NGO organized federations/groups, two from local government, two from NGOs, three from local elite, one from resource owning groups, one from law enforcing authorities and two from Forest Department. The Co-management committee has a Chairperson, Vice-chairperson and a Secretary. Half of the committee retires voluntarily every year and new members will be elected against the posts (a member can be elected two consecutive terms).

implementation and monitoring systems and a capacity building deficiency are the chief deficiencies for achieving sustainable forest management. Although co-management is important in forest conservation as it has been adopted in this project. There are circumstances in which it is absolutely necessary, for example high population pressures and resource use conflicts, communal ownership and in smaller and more vulnerable protected areas (Roche & Dourojeanni 1984). In such cases, conservation without co-management is doomed to failure. Nevertheless, co-management in itself provides no guarantee of success. The outcome of co-management processes often depends on additional factors such as institutional or legal frameworks, and the education or interests of local people and other stakeholders.

In addition, majority of local people are poor and unemployed. Resource extraction from the forest serves as the primary sources of income and perhaps, the only livelihood option for them. The NSP engaged those people in the forest management program by including them in the co-management committee. But they are not well-benefited from the program and even their survival is very much difficult. On the other hand the cases against them, which were filed in the previous records, are not still withdrawn. Moreover, some corrupted staffs of the Forest Department are involved in the illegal logging of forest. Thus, the actors of the forest management approach are not transparent and accountable and consequently the sustainability of forest management practice in the Lawachara National Park cannot be attainable.

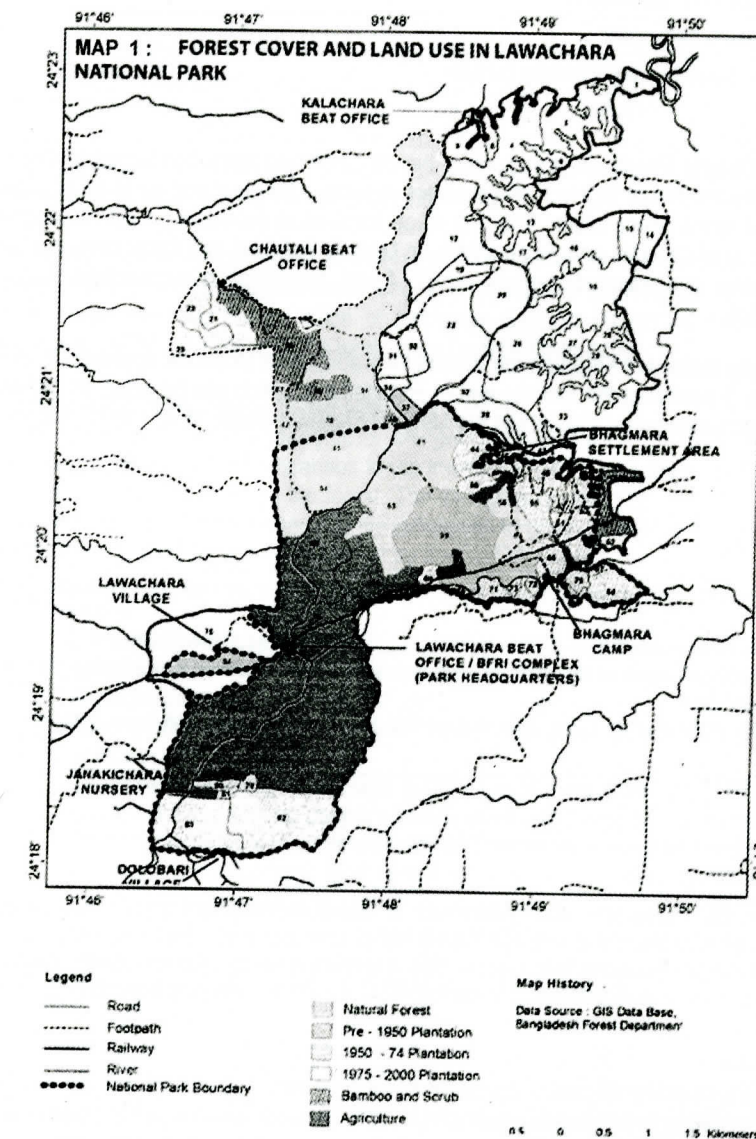


Figure 01: Map of Lawachara National Park



**1.3. Research Methodology**

The paper is based on data which are collected both from available primary and secondary sources. A structured questionnaire survey was undertaken on the Local people, beneficiaries from the project, employees of the NSP, co-management committee, patrolling group members and staffs of the Kamalgonj Upazila Parishad. The interview was conducted during February 2007 to identify the present status of Lawachara National Park and problems and prospects of Nirshorgo Support Project.

At the First stage, the stakeholders were asked about the functioning of the Nirshorgo Support Project and its drawbacks and benefits. Later on, the stakeholders' perspectives on Kamalgonj Upazila Parishad as a participant in the co-management committee in forest conservation practice were assessed and categorized following the factors given below in Table 2:

**Table 2:** Factor array of Kamalgonj Upazila Parishad's participation

Factor A	unwilling participant
Factor B	inconsequential participant
Factor C	problematic participant
Factor D	potential participant
Factor E	most positively participatory partner

Source: Pini et al., 2007

After the assessment of Kamalgonj Upazila Parishad's participation the research had been conducted in three key stages which encompassed to examine the extent to which stakeholders supports Upazila Parishad to be engaged in this new role (i.e. co-management) of forest conservation. The first stage involved in generating a set of statements drawn from a communication concourse of attitudes and perspectives on Upazila Parishad and forest conservation by reviewing theoretical, policy documents and research reports on the forest conservation approaches those are internationally exercised and succeeded.

To manage the decision process during statement selection the researchers adopted a structural approach to identify domain themes of engagement. Table 3 describes the four themes of engagement, which can be acted as facilitators or barriers to the take-up of forest conservation by the concerned Upazila Parishad (Keen et al., 1994; Adams and Hine, 1999; and Wild River, 2003).

**Table 3:** Statement set structure

Major theme	Levels
A. Engagement factors	(a) Community: Community refers to the population of people living in the study area and their involvement in forest conservation. (b) Capacity: Capacity refers to both human and financial resources of the Kamalgonj Upazila Parishad. (c) Connection: Connection focuses on the extent to which Upazila Parishad is involved in inter-agency networking in relation to forest conservation. (d) Commitment: Commitment refers to the level of ownership the Upazila Parishad may have in terms of forest conservation.
B. Dimensions	(a) Facilitators (b) Barriers

Source: Pini et al., 2007

Later on, the P-set (Participant-set, i.e. those who are questioned in the questionnaire survey) was structured considering different stakeholders of Upazila Parishad (UP) and forest conservation (Table 4). A total of 30 stakeholders, who were selected randomly, were included in this interview season. Among them, number of participants who had expressed the perspective illustrated by Factor A, B, C, D and E were respectively 6, 2, 5, 8 and 9.

<sup>3</sup> Total number of households in villages surrounding the park is approximately 4000. Of them, 136 are tribal (Khasia and Tripura) and among this households 64 are represented by forest villagers (Field Survey, 2007). Stakeholders were staff of Upazila Parishad; land encroachers; sawmill, brick field and furniture owners; volunteers; and staff of the project. About 10 percent of the households and 30 percent of the co-management committee were surveyed. However, the Samples from the other stakeholders were determined randomly.

**Table 4:** P-set structure

Stakeholders	No.
1. Staff of Kamalgonj Upazila Parishad	2
2. Fuel wood, bamboo, honey, fodder, bark, and sun grass collectors	2
3. Land encroachers	2
4. Sawmill, brickfield and furniture shop owners	5
5. Local and Indigenous (Khasia and Tipra) people	5
6. Volunteers	4
7. Staff of Nirshorgo Support Project	5
8. Members of co-management committee	5

The final stage involves interpretation of the factors identified by valuing them within the range from 'most likely (+5)' to 'most unlikely (-5)' with respect to the selected statements (Table 5).

**Table 5:** Value distribution

Most unlike					Most like						
-5	-4	-3	-2	-1	0	+1	+2	+3	+4	+5	

To facilitate data collection, statements were written in small cards and sorted into piles in a quasi-normal distribution. In this study the instruction was: 'What is your perception about the existing forest conservation system?' 'Will the involvement of Kamalgonj Upazila Parishad ensure the sustainable management of forest conservation?' Table 5 presents the complete factor array, including item scores (value of perspective x frequency of opinion of the participants) and a list of statements and enables us to examine the five ideal factor arrays for each of the statements characterized by each factor as a facilitator and barrier.

Furthermore, relevant information and related data (on forest conservation projects; functions, organogram and responsibilities of co-management committee; and the role of Forest Department) and the maps of the study area were also collected from the branch office of Nirshorgo Support Project at Srimongol, Nirshorgo Head Office, Forest Department, USAID and other NGOs working on forest conservation.

**2.1. Analysis of the Existing Co-Management System**

The research starts with the analysis of the present practice of Co-management system under the umbrella of Nirshorgo Support Project in comparison to the traditional role of the Forest Department at local level who acted only as a custodian of the resources of the forest. The strengths (positive approaches), opportunities (success), weaknesses (barrier to fulfill the objectives) and threats (obstacles to attain long-term success) of the Nirshorgo Support Project in Lawachara National Park can be evaluated by the SWOT analysis.

**2.1.1. Strengths**

- o **Co-management approach:** The co-management approach is used in the NSP to make an equitable share of benefits and costs of forest protection and management among the stakeholders and Forest Department, as legal custodian of protected area. This approach makes an effective linking of participatory benefit sharing agreements to conservation by the local stakeholders and brings out the loggers from illegal cutting of timber.
- o **Landscape Development Fund (LDF):** The sharing of benefit from the harvests of plantations is a main mechanism for eliciting people's participation and forming Tree Farming Fund (10% of total proceeds). In addition, an initial amount of USD 300000 earmarks is used as seed money (Field survey, 2007) It appears that the flow of benefits to local people is much less in co-management of protected areas.
- o **Habitat management program:** The outcomes of this program include preparation of updated forest cover and land use map, delineation of park boundaries, conflict resolution between Forest Department and co-management committee, and provision of incentives for good protection efforts and disincentives for poor effort by Forest Department and NSP (Field survey, 2007).
- o **Management zoning:** The management of core zoning is the long-term protection and rehabilitation of forest cover, restoration and manipulation of habitat of selected wild life species and plantation. A study on assessment of Forest Department's institutional organization and capacity to manage the core zone (protected area) was completed under Nirshorgo Support Project (NSP). The main objectives were to identify the key elements of a sustainable protected area system, assessment of current status of protected area management element and preparation of recommendations along with delivery mechanisms. The management support system of institutional organization will include organizational management,



information management technology, spatial data management, financial organizational system, institutional orientation to co-management, legal support, law enforcement, wildlife insurance, education and communication, research, monitoring and evaluation, inter-sectoral conservation plan, public-private partnership and sustainable financing.

#### 2.1.1.2. Opportunities

- o **Reduction of illegal logging** up to 90 percent: From the field survey, it is revealed that the previous percentage of logging has been reduced to a large extent as no new cases have been filed in the local police station during the last three years (Field survey, 2007). Nevertheless, the allegation was raised against some staffs of the Forest Department who are involved in illegal forest logging.
- o **Building self-sufficiency and eradication of rural poverty:** Through the self-employment training program for the local people on different sectors of small enterprises, NSP is participating in rural development efforts. Initially NSP collects TK 10 per week from 15 women in a group after completion of three days training. Three members out of fifteen are given grant of TK 2000 for their self-employment e.g. livestock rearing, small cottage industries and vegetation etc. one percent share of the total earned profit from activities performed by the grant is supposed to be restored in the fund. From this fund (excluding TK 1100 as safety margin or reserved fund) money is given to the other members as loan (Field survey, 2007).
- o **Eco-tourism:** NSP has taken various programs to develop the system of eco-tourism such as identification of tourist spots; provision of guesthouses; availability of information materials like fixed signs, brochures; and development of trail network for visitor's movement.
- o **Increased bio-diversity:** The major occupations of the local people (Khasia, Tipra and Bangalee) are agriculture (betel vine, pineapple and lemon cultivation) (65-70 percent) followed by day labor (10-15 percent), fuel wood collection (5-10 percent) and small business (3-5 percent) (Field survey, 2007). Due to the conversion of forest into agricultural land, many species e.g. Hoolock gibbon and capped langur were endangered. For this, NSP has taken model development concepts and procedures for two selected species Hoolock gibbon and capped langur. Habitat Suitability Index (HIS) models have been developed for each species, which increased their number (NSP, 2006a and 2006b).

#### 2.1.1.3. Weaknesses

- o **Lack of future direction:** The time duration of NSP is up to 2009 and after the completion of NSP the flow of money supplied as grants and remunerations will be stopped. After the termination of the project, the future of the forest conservation program and training and activities of co-management committee will be uncertain.
- o **Lack of initiative:** Little amount of remuneration (TK 2250) is given to the co-management committee members and the secretary. Before their engagement in the co-management committee, they earned more than TK 5000 monthly by illegal logging of forest (Field survey, 2007).
- o **Inadequate training and insufficient funding:** NSP provides training on various sectors like poultry, nursery, and fishery etc. Nevertheless, the training period is only 3 days and the training is given at Srimongol town which is far away (more than 30 km) from the Lawachara National Park. The participants are given material grants (ducks, chicken, goat etc.) which are worth of TK 2000 instead of cash after the completion of the training program. Consequently local people feel no interest in this training program (Field survey, 2007).
- o **Accountability and transparency:** Even though the survey found that no case was filed against the local people during the last couple of years, illegal logging is still going on by the corrupted staffs and guards of the Forest Department. Thus, lack of honest and responsible officers and guards, there is no chance of accountability and transparency in the administrative system.

#### 2.1.1.4. Threats

- o **Conflict between interest groups:** Conflicts are rising between the Forest Department and co-management committees and there is also lack of trust between them. The members of the co-management committee

<sup>4</sup> According to the Worldwide Fund for Natural India (WZF), eco-tourism is an alternative tourism and it respects social and cultural traditions. It is decentralized in nature and seeks to integrate rural development. Eco-tourism would ideally generate revenue for conservation of natural and cultural wealth and afford cultural exchange among the people. But its most avowed objective would be to attain a balance between nature and human beings and ensure the co-existence of both (Ghosh, 2000 p. 179).

were assured about the withdrawal of the cases against them but still now there is no initiative by the Forest Department and the law enforcing agencies.

#### 2.2. Assessment of Kamalgonj Upazila Parishad's involvement in the co-management system

Clearly, the alarming rate at which forests are being reduced and degraded is unlikely to be arrested -- much less slow down -- if current management practices continue to persist. A change in the management system is required. Furthermore, different questions were explored regarding the existing management system such as: What will happen to those people who became jobless due to NSP? What will happen if the members of the co-management councils fail to prove their transparency, accountability after the departure of NSP? Is there any possibility to take the responsibility of co-management approach by the local rural government?

The participation of Kamalgonj Upazila Parishad in the forest conservation approach along with local people and Forest Department was taken under consideration for attaining sustainable management of the forest conservation. The perspective of the stakeholders regarding the effectiveness of the participation of the Upazila Parishad in the current conservation practice was analyzed.

The well-built perspective of those respondents (20%) who loaded on Factor A (inconsequent participant) which identified that UP will be unwilling participant because it has lack of skill on defining, monitoring, planning and managing forest conservation; lack of knowledge on cost of environmental loss, ecosystem degradation and species decline; non existence of property right of indigenous people and poorly coordinated policies and service delivery. This group of stakeholders strongly disagreed about the statements like 'UP has moved from a siege mentality to a proactive agenda in relation to forest conservation' and 'UP has strong record on consultation in relation to forest conservation' (See: Table 5 and 6).

The stakeholders (6%) loading on Factor B (indicating UP as inconsequent participant) articulated a point of view that gives credence to the views 'Public distrust of local government intention of community involvement and 'Inexperienced elected members and staff in community engagement'. While this group of stakeholders has a very strong negative reaction to the statement, 'There are some dynamic and passionate individual staff and councilors who are committed to forest conservation' and 'Upazila Parishad has moved from a siege mentality to a proactive agenda in relation to forest conservation' (See: Table 6 and 7).

Those respondents (16%) loading on Factor C (indication UP as problematic participant) gave a high level of emphasis to 'Parishad is overloaded with inappropriate program objectives and performance indicators and onerous upwards accountability burdens', 'Policies and service delivery are poorly coordinated and inefficiently delivered' and 'Council is more familiar with engineering works' (See: Table 6 and 7).

Some respondents (26%) loading in Factor D (indicating UP as potential participant) have had a much more positive experience of UP's engagement in forest conservation. They assigned high negative value to 'Non-existence of statutory property rights for the indigenous people'. On the other hand, they strongly believe that UP should be responsible for conflict resolution between FD and Co-management committee. This is not to suggest that these stakeholders are entirely positive about UP's commitment to forest conservation (See: Table 6 and 7).

A significant number of respondents (32%) loading on the Factor E (indicating UP as positively participatory partner) can be differentiated from the other participants in that they agreed strongly that councils must address forest conservation through engagement with the community and other stakeholders. They articulated such a stance by assigning a highly positive value to statements 'Even if the local people isn't using the term forest conservation they are still likely to be interested and committed to the issues' and 'Upazila Parishad has a strong record on community consultation in relation to forest conservation' and 'Upazila Parishad needs to focus on educating and empowering the community about forest conservation' (See: Table 6 and 7).

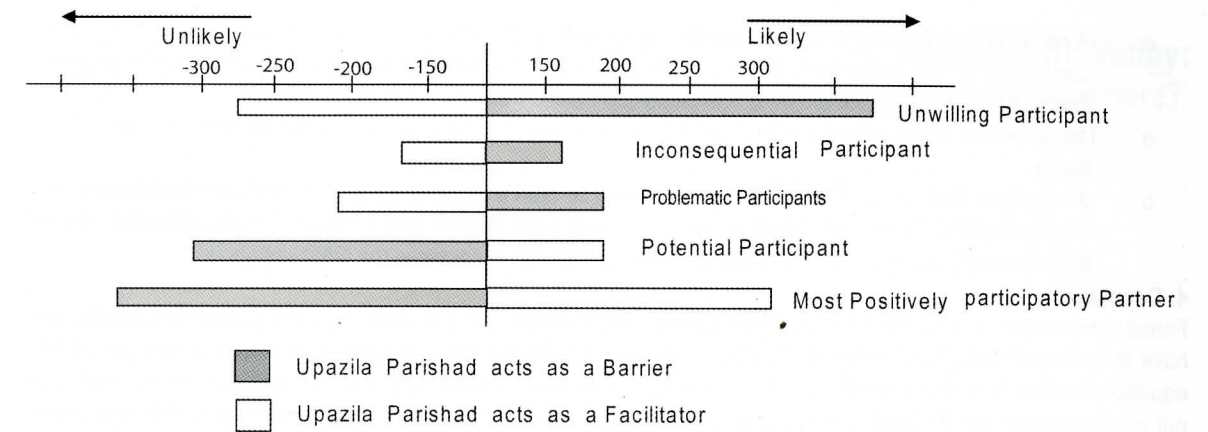


**Table 6:** List of statements and factor array (Upazila Parishad as a facilitator)

Statements	Factor (Avg. value of perspective x no. of participants)				
	A	B	C	D	E
<b>Act as a facilitator</b>					
1. Responsible for multilateral benefit sharing agreements/co-management agreement	-24	-2	-15	32	27
2. Sustainable utilization of Landscape Development Fund (LDF) by Upazila Parishad to set up micro-enterprises, offering self-employment opportunities	-18	2	-15	16	27
3. Responsible for conflict resolution between Forest Department and Co-management committee.	-18	2	-15	40	27
4. Upazila Parishad is employing environmental specialist staff who help them understand their responsibilities and train up other staff and community members	-6	-2	-10	-8	-18
5. There are some dynamic and passionate individual staff and councilors who are committed to forest conservation and they are making a difference	6	-10	-10	8	36
6. Upazila Parishad needs to pay its environmental officer from recurrent funds so as to safeguard the job	0	0	-10	24	18
7. One of council's role is to go out to people and articulate forest conservation goals in a language they understand	-12	-8	5	8	36
8. Even if the local people isn't using the term forest conservation they are still likely to be interested and committed to the issues	18	-6	25	-8	-9
9. Certain individuals and groups have greater political power and their voices are heard most strongly	0	6	-5	32	45
10. Co-management committee is becoming more used to working co-operatively on projects and for planning	-30	-6	10	8	27
11. Upazila Parishad has moved from a siege mentality to a proactive agenda in case of forest conservation	-30	-4	-10	-24	-27
12. Upazila Parishad has a strong record on community consultation in relation to forest conservation	-30	-2	-10	-40	-36
13. Parishad should provide in-kind and direct financial assistance to community based groups	-30	-2	10	24	45
14. Successful management of forest conservation depends on Upazila Parishad taking a lead role	0	-8	-15	-24	-9
15. Upazila Parishad needs to focus on educating and empowering the community about forest conservation	0	-4	0	24	0
16. People don't get involved with forest conservation because they think they have to be experts or have scientific knowledge	0	-6	-20	-16	45
17. Parishad could raise funds through environmental levies or provide financial incentives	0	-8	-20	-16	-36
18. Indigenous cultural and 'adventure' tourism are potential niche markets for economic development	0	0	-5	16	9
<b>Total</b>	<b>-174</b>	<b>-58</b>	<b>-110</b>	<b>96</b>	<b>207</b>

**Table 7:** List of statements and factor array (Upazila Parishad as a barrier)

Statements	Factor (Avg. value of perspective x no. of participants)				
	A	B	C	D	E
<b>Act as a facilitator</b>					
1. Knowledge about forest conservation is lacking amongst council staff and elected members	24	2	0	16	9
2. Involving the community is very time consuming	0	4	10	0	-27
3. The range of skills required for defining, monitoring, planning for and managing forest conservation is not currently readily available within the Upazila Parishad	30	0	-20	-32	-9
4. The ministry and higher authorities recognize Upazila Parishad as key stakeholders but rarely involve them in leadership roles.	24	-4	-5	-16	18
5. Council is more familiar with engineering works, with the more traditional sets of tangible costs and benefits and has little consent about the cost of environmental loss, ecosystem degradation and species decline	30	2	25	32	9
6. There is lack of appropriate data on forest conservation at the Upazila level	-6	8	-20	-8	0
7. Upazila Parishad does not have the resources to take an active role in forest conservation practice	-6	2	0	-16	0
8. There is a lot of public distrust of government seeking community involvement	6	10	-10	-16	-18
9. The dilemma for Upazila Parishad is that they may need people's participation but they fear it more	0	2	0	-32	-36
10. Elected members and staff are not experienced in community engagement	6	10	0	0	-27
11. Upazila Parishad sees forest conservation as a Forest Department function	6	0	-15	0	0
12. Non-existence of statutory property rights for the indigenous people	30	2	15	-40	-36
13. Policies and service delivery are poorly coordinated and inefficiently delivered	30	6	25	-24	-36
14. Parishad is overloaded with inappropriate program objectives and performance indicators and onerous 'upwards accountability' burdens	24	2	25	-24	-18
15. Parishad has substantial infrastructure gaps and high rates of capital deterioration	24	2	15	-8	-18
16. Parishad has too much planning and not enough action and leaders are overloaded with meetings	24	2	15	-8	-18
17. Factionalism within the Upazila Parishad destroys the stability of the governing body	24	6	15	-16	-18
18. Upazila Parishad uses the indigenous people as testing grounds for economic and political experiments	-6	-2	10	-24	-36
<b>Total</b>	<b>264</b>	<b>54</b>	<b>85</b>	<b>-216</b>	<b>-261</b>



**Figure 02:** Factor scores in case of UP's involvement as facilitator or barrier

Hence, the perspective of the stakeholders regarding the UP's participation in forest conservation at different scales can better be evaluated by interpreting Figure 1. In case of unwilling participation (Factor A), the role of UP is much more impeding (factor score 264 as a barrier and -174 as a facilitator) in case of forest conservation. For Factor B (Inconsequential participation), the UP is comparatively less impeding than Factor A (factor score 54 as a barrier and -58 as a facilitator). The role of UP in Factor C is almost similar to that in Factor A bearing in mind their factor scores (factor score 85 as a barrier and -110 as a facilitator). Nevertheless, the perception of stakeholders in respect of UP's involvement as a potential participant (Factor D) and partner (Factor E) is completely reversible comparing to the rest ones. The stakeholders are highly optimistic about the participation of UP in forest conservation in any form of potential participant or partner. However, council's participation in forest conservation is much more prioritize in the form of partner (factor score -261 as a barrier and 207 as a facilitator) rather than as a potential participant (factor score -216 as a barrier and 96 as a facilitator) in accordance with the perception of the stakeholders.

Therefore, the drawbacks of existing Nirshorgo Support Project (NSP) in Lawachara National Park can better be convincible by involving the Kamalgonj Upazila Parishad as an active partner and this argument is structured by assessing the perception of stakeholders of Lawachara National Park in the present research.

### 3. Recommendations

Sustainable forest management does not only imply sustained yield forestry and sustaining a wider array of forest functions, but furthermore a high degree of economic feasibility and social acceptance. The participation of Kamalgonj Upazila Parishad can play an important role in attaining sustainable forest conservation. Partnership among local communities and Upazila Parishad is an essential prerequisite therefore of conservation concessions. Transparent and credible administrative procedures that enable co-decision-making with local communities have to be introduced. Some additional measures need to be taken such as

- o The creation of a Sustainable Forest Management Committee (SFMC) that will operate as an environmental share-issuing committee. The committee will be headed by the Chairman of Kamalgonj Upazila Parishad. The range officer and beat officer of Forest Department, representative from Khasia and Tipra communities, representatives from co-management communities and representative from resource owning groups will be included as members. Within its area of influence, the SFMC will be responsible for the conservation of natural forests and for the sustainable management of degraded forests and forest plantations, for improving the living conditions of the population as well as for regular evaluation and monitoring of the activities of the different departments and committees of the forest management system. In order to address this goal the SFMC will implement an integrated financing method combining three financing sources: private investment in environmental shares; income derived from sustainable management of forest goods (timber and nontimber forest products); and payments for forest services (biodiversity conservation).



- o A rehabilitation scheme should separately be considered for the non-human primates, the most important component of the Lawachara National Park ecosystem, by reestablishing the habitat continuity between fragmented habitats of the primates and plantation of food trees.
- o The collection of fuel-wood, bamboo and other major building materials should be stopped on a short-term basis.
- o A long-term biodiversity monitoring scheme should be planned with provision for database development, not only for tracking the success of the project but also for track the changes in the biodiversity within the park so that necessary actions could be designed and implemented to conserve the biodiversity.

#### 4. Conclusion

Forest conservation and sustainable forest management has to make tangible sense to all the groups, whose activities have the potential impact on forests. Being able to demonstrate the full range of ecosystem values in one part of this equation, another is to find ways of equitably capturing these values and benefits over the long term so that they can put in place incentives for local communities, private sector actors and governments to promote sustainable forest management. Nirshorgo Support Project has taken a stand in the forest conservation but the sustainability of forest management is currently subjected to some threats, which need to be resolved by positive participation of Kamalgonj Upazila Parishad. Upazila Parishad can be acted as the conflict negotiator among the Forest Department and local people and as a statutory platform for the SFMC. There may be a need, therefore, for Upazila Parishad to look to the more innovative and sustainable approaches like capacity building training, rehabilitation scheme, initiation of alternative income generation program and long-term bio-diversity monitoring scheme.

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## Implementing the Proposed Outer Ring Road in the Kathmandu Valley: Creation of new sets of urban problems or opportunity for the planned development?

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#### Abstract

The proposed Outer Ring Road [ORR] project has a vision of developing the Kathmandu Valley as National Capital Region. This project proposed 72 km long outer ring road including the construction of 50 m wide connecting roads and about 250 m stretch of land development on either side. All these were conceived to be implemented through land pooling technique. Beside the transport development, it also aims in managing the population growth in the next 15-20 years through planned urban development. This ambitious project covers about forty Village Development Committees, three Municipalities and one Metropolitan City. It is a complex program of three interrelated components: (i) construction of highways divided in four lanes, (ii) land pooling schemes, (iii) coordinated infrastructure provision and (iv) building construction. The government of Nepal is for the first time implementing such a mega project. However, the Kathmandu Valley has not yet completed any Master Plan for Planning Standards and Urban Design Guidelines. It clearly demonstrates inadequate legislations which fail to regulate the haphazard urban growth and land pooling projects as well as the building construction. Only the intervention of existing Master Plan is limited to the formation of regular plots with vehicular access devoid of integrating with mixed land uses. Its function is only to regulate the building constructions including implementation of some isolated small scaled infrastructure projects. All these indicate not only poor technical and managerial capabilities of the concerned public agencies but also exhibit their lack of coordination and cooperation. So, while implementing the ORR project under such circumstances it may repeat the present form of haphazard growth in the surrounding areas directing to an uncontrolled development in the land pooled areas. As a result, population migration in the Valley will further increase and most of them may be working in the existing urban centres. Such tremendous population exodus, thereby, may create new sets of urban problems like environmental degradation and ecological imbalance, inadequate water supply and electricity and reduction of agricultural land and open spaces and other socio-emergency amenities. Such a failure to regulate the influence of new development will destroy the rural character of traditional settlements such as Bungamati, Khokana, Changunarayan and so on. It shows that numerous stated objectives of the proposed ORR project, such as decentralisation of business activities to the peripheral new areas through development of new 'business centres' with mixed land use and coordinated infrastructure development at different nodal points, can not be fulfilled unless the existing land pooling technique is replaced by urban design approach with participation of the concerned public agencies besides the local land owners. Therefore, the Urban Design guidelines for preparation of a comprehensive Master Plan as well as rules for building construction are needs to be recommended. While incentives in different forms such as tax cut, floor area bonus and so on can be used to achieve the desirable built form during implementation.

**Key Words:** Outer Ring Road of Kathmandu Valley, Land Pooling, Legislation and Institutional Arrangement, Urban Design & Planning Guidelines, Incentives.

#### 1.0 Outer Ring Road Project of Kathmandu Valley - An Overview and Study Objectives

The combination of 'pull factor' in the urban areas like expansion of industry and business including flow of information particularly after 1991<sup>1</sup> the 'push factor' in the rural areas like the low socio-economic development, natural disaster causing loss of lives and properties marked differences in development of Kathmandu. Moreover, the recent past political disturbances including adaptation of centralised policy by the past successive governments are responsible for

<sup>1</sup> In the year 1991 multiparty system was restored in Nepal which has achieved remarkable changes in development strategies.

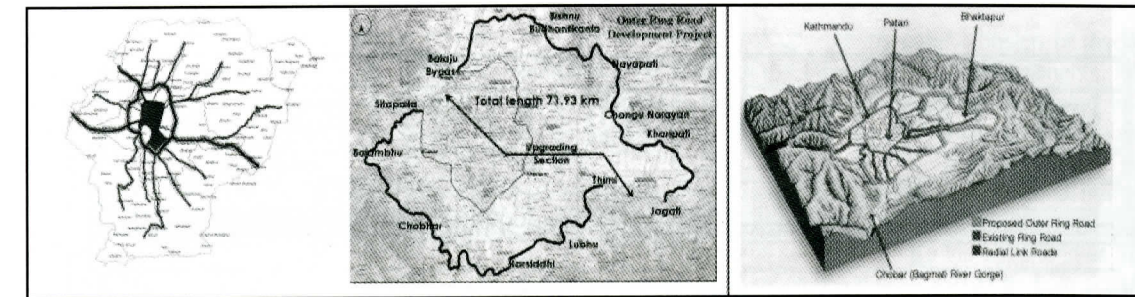


huge population migration into the Kathmandu Valley for better income opportunity, education, health, safety and other services. The annual urban growth in the capital city of Kathmandu is 6% against the national average of 2.1% and it accommodates about 30.9% of the total urban population of Nepal [Shrestha, 2007]. In response to the high demands of land, housing and other services the government of Nepal has not only formulated different legislations<sup>2</sup> for development control but it also established new ministries such as Ministry of Housing and Physical Planning in 1988, Ministry of Population and Environment in 1995. Moreover, it has been implementing different types of projects since 1970s, such as site and services [e.g., Kuleswore housing project], guided land development, land pooling projects and other infrastructure improvement projects for the planned development of the Kathmandu Valley with varying degree of success. In continuation to this effort, the government of Nepal in the fiscal year 2004-05 had decided to launch the Outer Ring Road [ORR] project. It is an enormous and complex project comprising of arterial road construction, land pooling schemes including development of new business centres as a major program with redevelopment of numerous road junctions and modification of road segments as complementary schemes. Different study carried out in the past such as NEPECON [Nepal Engineering Consultancy Services Centre Limited] in 2000, JICA [Japan International Cooperation Agency] in 1993 which had focused on the transportation aspect rather analysing from the urban development perspective. In fact, the Environmental Impact Assessment and the Social Impact Assessment reports of ORR project are still under preparation. So, people are divided regarding the prospects and problems of this ambitious project. Some have strongly advocated the immediate implementation of this project whereas others are concerned about the negative impacts of it. Land brokers see this scheme as an opportunity for their investments; villagers residing in different locations hope to get benefits from the construction of the road; again others are lobbying to bring the road alignment near to their settlements. Against such background, this paper aims to assess the negative consequences as well as the benefits of implementing the project in the Kathmandu Valley with fourfold objective. First, it elaborates the contextual study of the proposed project and then establishes a study methodology based on the nature of the program. Second, it analyses the existing legal and institutional framework of urban development based on the past implemented projects as well as present situation of the Kathmandu Valley. Third, it identifies numerous negative consequences of implementing the program under the existing situation. It also recognises many benefits of this project if the project is executed after fulfilling some of the pre-requisite conditions. Finally, it draws a conclusion and proposes some strategic recommendations for the successful implementation of the project in future.

**2.0 Contextual Study and Its Methodological Account**

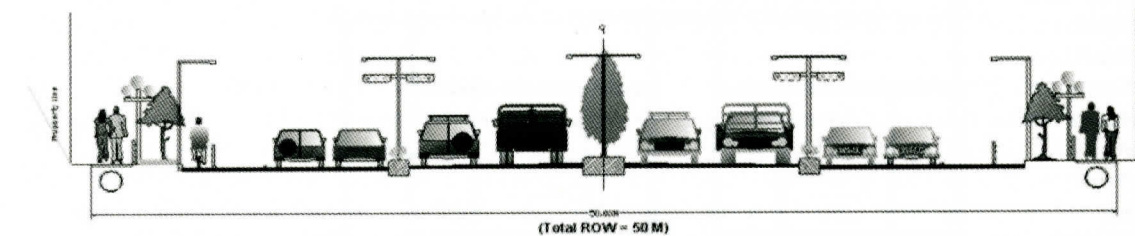
The proposed Outer Ring Road [ORR] project comprises of two broad components: Construction of the main road having 50m of Right of Way and development of 250 m of land on either side of the road through land pooling mechanism. Altogether it comprises of 550 m belt of land development for the ORR project [DUDBC, 2008]. According to the government of Nepal, this ambitious project is necessary not only to contain the population growth through planned development in the next 15-20 years but also to create a new bypass road for Kathmandu Metropolitan area. Moreover, it aims to delineate rural urban boundary and to create integrated infrastructure development corridor - water, electricity, telephone, sewerage and so on. The proposed alignment of the road is based on the 'Rural Urban boundary' of Kathmandu Valley Plan 2020 [KVTDC, 2000] and recommendations suggested by JICA [JICA, 1993] and NEPECON in their feasibility study of ORR in 2000. Moreover, considerations of geology, topography and drainage patterns of the land are taken into account avoiding the fertile agriculture land, environmentally sensitive areas such as dense forest and protected areas as well as the location of security zones. The ORR will connect numerous isolated nodal points of the three principal cities of the Kathmandu Valley [Figure 1] by merging the existing Ring Road, which was constructed 30 years ago from 'Sitapaila to Balaju Bypass', and the existing portion of 'Araniko' Highway from 'Jagati to Thimi.' The ORR has also proposed to join 'Banepa - Bardibas' Highway and Kathmandu - Hetauda Expressway [Araniko Highway] and 'Tribhuvan' Highway.

<sup>2</sup> Legislations like the Town Development Act 1998, Municipality Act 1992, Joint Apartment Act 1997, Local Self Governance Act 1999 and so on.



[a] Existing road patterns [b] Alignment of proposed ORR [c] ORR connecting all radial roads  
**Fig. 01.** Proposed Outer Ring Road linking different nodal points of the Kathmandu Valley [Source: DUDBC, 2008]

This Outer Ring Road will have separate lanes for vehicles, such as two lanes for high speed with desirable speed of 60-80 kmph and another two lanes for service with desirable speed of 30-50 kmph in both directions. It will also include lanes for low speed bicycle in the same road section. Moreover, it will include the off street parking. Such road with provisions of highway, service road, bicycle lanes, parking space including greenery belt and pedestrian path will be first of this type in Nepal [Table 1 & Figure 2].



**Fig. 02.** Typical road section with detailing of the proposed Outer Ring Road project [ORR] [Source: DUDBC, 2008]

**Table 1.** Technical detailing and typical cross section of the Proposed Outer Ring Road project [ORR]

Technical detailing		Typical cross section of the Proposed project ORR	
Design speed [highway]	60 - 80 kmph	Right-of-Way (ROW)	50 m
Design speed [service road]	30 - 50 kmph	Highway width	8.5 m x 2 [2 lanes]
Maximum gradient	8%	Service Road width	6.0 m x 2 [2 lanes]
Average gradient	4 - 5%	Shoulder/Parking Lane	2.5 m x 2
Minimum gradient	0.5%	Cycle Lane	1.5 m x 2
Desirable horizontal radius	185 m - 230 m	Median Expressway	2.0 m
Minimum vertical curve	40 m - 50 m	Divider	1m x 2
Camber slope	2.5 - 3%	Green Belt	2.5 m x 2
Shoulder slope	3%	Footpath / Utilities	2.0 m x 2
Minimum super elevation	2.5% - 3%		

For the planning purpose, the lands on the both side of the Outer Ring Road is conceptually categorised into three different Sectors at district level: Kathmandu, Lalitpur and Bhaktapur. [Welink, 2005]. They are further scaled down into Sub-Sectors with many neighbourhoods. Each neighbourhood measuring 1.6 km long and 543 m wide is composed of six Blocks of different size. Three blocks on either side of the road and each block comprises of more than 15 clusters, [Figure 3]. The Central Block, which is separated by 8 m wide road, comprise of an area of 335 Ropani. It will have bigger space compared to the Side Blocks of 210 Ropani land.



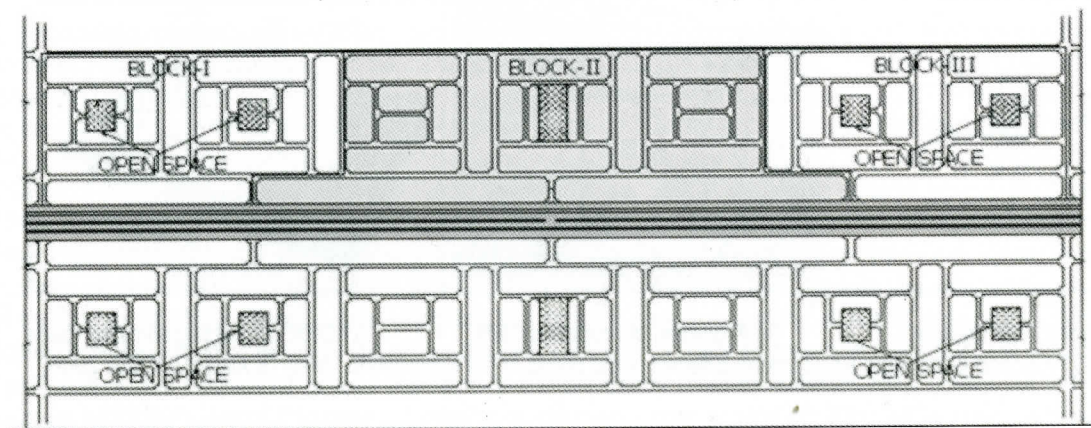


Fig. 03. Conceptual layout of neighbourhood and block in the proposed Outer Ring Road project [Source: Welink, 2005]

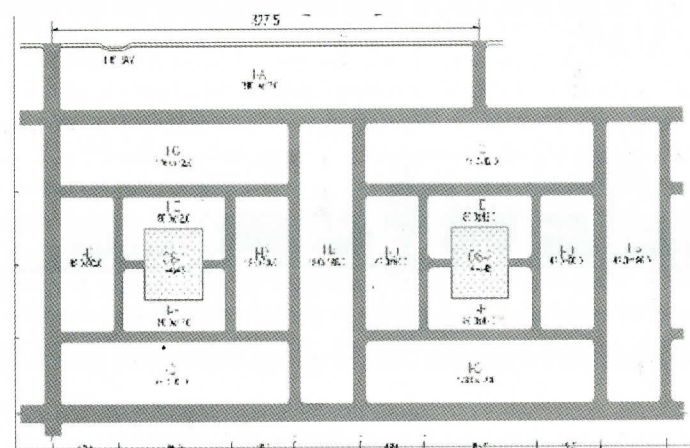


Fig. 04. Layout detail of Block II with cluster, open space and internal streets [Source: Welink, 2005]

According to the government, integration of rural settlements to urban centres and linkages between the southern and eastern parts of the Valley will be better through Outer Ring Road. Land needed for numerous public utilities and services such as administrative sub centre, commercial sub centres, and inter-city bus terminus and so on in the capital metropolitan city will also be easily available through extension of the present settlements towards the Outer Ring Road through planned development. Thus, this road is expected to become backbone of the urban growth in future. Though financial assistance from the government of China is expected for the construction of major highway, Department of Urban Development and Building Construction [DUDBC] under the Ministry of Physical Planning and Works is conducting initial phase of study. So far, study of fixation of alignment, road intersection improvement, impact of ORR on traditional settlement including detail planning reports from Harisiddhi to Lubhu segment including model land readjust plan and the proposed conceptual townscape has been carried out by various qualified private consulting firms under the supervision of the department. (Fig: 5) The land required for the proposed road having Right of Way 50 m is about 350 ha., which is 7,000 Ropanis approximately, and costing about NRs 5 billions. As the government of Nepal simply can not afford this amount for the land acquisition and the past experience clarifies the complications, controversies and time consumption in the implementation of such a mega project. Therefore, it has been decided to acquire the land through land pooling techniques on 250 m each side of the highway.

Some practical issues like the complex nature of the project, government's inexperience in implementing such program in the past including the absence of detail feasibility study from multi-disciplinary approach, especially from urban development perspective - all these complicate the implementation phase. The analysis of the consequences of the project implementation under the two scenario - one based on the existing legal and institutional framework and

another assuming the improvement in different legal and institutional set up - needs careful design of theoretical framework and study methodology. The study methodology is based on the three interrelated components. First, it carefully studies the contextual background of the project and its various components especially related to road construction and urban development aspect. Second, it examines different legislations and public agencies related to road and urban development to review their effectiveness in the projects that were implemented before. Third, it identifies the major activities in project implementation and relates them to the existing legal and institutional framework to find out the various negative consequences. Moreover, it also acknowledges the usefulness of this project and proposes the major modification needed in the legal part and organisational set up to realise the opportunities offered by the project. Finally, it draws a conclusion and suggests some strategic recommendations based on both scenarios. The whole study focuses on the process. Sample survey and detail site analysis of the road alignment and land pooling area is beyond the scope of this paper, as the government is still working towards it on incremental basis through different private consulting firms.

### 3.0 Existing Legal and Institutional Framework

The inadequacy and ineffectiveness of the existing legal and institutional framework for urban development in the Kathmandu Valley has already been confirmed by the failure to regulate rapid urbanisation and haphazard growth of settlement and building transformation in the historic core and peripheral areas. It also have proved their weaker control on different kinds of projects ranging from housing construction, land pooling and other infrastructure projects under public private partnership in the past. First, five tiers of government organisations namely Ministry of Physical Planning and Works [MPPW] at central level, Department of Urban Development and Building Construction [DUDBC] and Kathmandu Valley Town Development Committees [KVTDC] at valley level, Local Municipalities at city context and local Ward Office and Village Development Committee [VDC] at local scale are yet to prepare the Detailed Master Plan for the Kathmandu Valley. The earlier five master plans proposed in 1963, 1969, 1976, 1984 and 1991 were never implemented. There is neither an urbanisation policy at national level nor any clear guideline of land development and infrastructure provision in the urban areas. Though the Town Development Act 1988 empowers the KVTDC to prepare planning standards and design guidelines, it has failed to fulfil its duty even after twenty years. Due to absence of such regulations, almost all the planned settlements both in the housing and land pooling projects implemented by public agency in the past had become case specific and were the product of trade off between the local land owners and the project staffs [Shrestha, 2006a]. The resultant built environment is sterile and mono-functional with many individual good buildings but without fitting them into the surrounding landscape. The gross density in these planned areas is also too low [e.g. 159 person per hectare at 'Kuleswore housing project' and 143 person per hectare at 'Gongabu land pooling project'] compared to the recommended minimum gross density of 300 person per hectare in the proposed Development Plan 2020 of the Kathmandu Valley. Despite having comparable project area in 'Liwali' and 'Sinamangal' residential developments, open space allocation varies, like 2.8% in 'Liwali' and 5.3% in 'Sinamangal.' Haphazard division of lands with unscientific street layout and without provision of open spaces and social amenities in the areas developed by private sectors and individual land brokers has continuously unabated. The local real estate companies neither register their company with the government nor do they get approval of their land development schemes from the Town Development Agency. Thus, the private sectors have taken profit from land development creating problem to the government for the provision of infrastructures and other amenities. In terms of building component, any semi-skill person whose who are not architect or building engineer and who has obtained only diploma on building construction [or in architecture] is qualified for design and supervision of building construction, which are less than three storeys and of 1000 sq. ft ground coverage. Once the building permit is received from the metropolitan office, the owner himself with the help of local masons erects the building on the site. Construction detailing and other changes are carried out based on masons past experience and owner's requirement. It is believed that as high as 90% of private construction in Kathmandu and Lalitpur are not supervised by engineers. They remained unmonitored and those illegal home constructions are as high as 27% [CBS 1997].

Second, the existing building bylaws based on the land use of map of 1976 is the only legal tool to regulate urban growth. As it is applicable for only new construction, it can not address the activities like vertical division and haphazard renovation of traditional building stocks in the historic core areas (Fig: 7), occupancy [building use] change in the buildings [conversion of residential houses for school, nursing home, etc.] and so on. Moreover, permissions from the education authority and health authority are enough to run the private schools or nursing homes irrespective of the seismic specification of the buildings and other safety measures. [Fig: 6] Similarly, the recently enacted 'Joint Apartment Ownership Act - 1997' focuses on permission to construct housing, its sale, ownership transfer, etc. rather than on income mix, social and emergency amenities including construction and safety requirements. In many cases, the bylaws are conflicting with the existing other legislations such as 'Ancient Monument Protection Act 1976, and



recently enacted 'Local Self-Governance Act 1999' particularly in punishing defaulters. For instance, the Ancient Monument Preservation Act 1956 empowers the Chief District Officer after getting request from Department of Archaeology, to give order for the destruction of the houses or part of it that are constructed against the prevailing law whereas the newly enacted 'Local Self-Governance Act-1999' gives power to the Mayor to punish defaulter either by imposing fine [upto NRs. 100,000] or by demolishing the building or part of it. Also, the city can not take any action unless it is informed by the affected party. Similarly, the Traffic Transport Management Act 1992 empowers Department of Transport Management to manage transport and traffic including controls of vehicular emission and condition and road accident [MOLJ 1992] whereas the Local Self Governance Act 1999 strengthens local government's role in planning and development works with little power on urban road sector [MOLJ 1999].

Third, both the local government and KVTDC are ineffective in even enforcing simple clauses of the byelaws such as building height restriction, floor projection, ground coverage or set back requirement through building permit system and monitoring the construction sites. Lack of three different agencies namely local government [issuing building permit], KVTDC [monitoring the construction site] and Chief District Office [punishing defaulters] is clearly visible. Fourth, even in some of the local government participated projects such as redevelopment of 'Dharahara - Sundhara Public Plaza,' [Shrestha and Shrestha, 2006] 'Construction of Overhead Pedestrian Bridges,' [Shrestha, 2006b] and so on, the private sectors were successful to commodity the community spaces in different ways whereas the public sector was even failure to retain the earlier free access to those places let alone forget the protection of intangible aspects of cultural values and people's sentimental attachment with those places. Other local government involved projects include the conversion of different types of cultural spaces of Kathmandu - 'Te-Bahal' [one of the biggest Buddhist Monasteries of Kathmandu], 'Bhugol Park' [Earthquake Memorial Park] and 'Tundikhel' [the biggest open space of Kathmandu] - into the parking lot for short-term economic benefit. All these public sectors activities - planning task, regulating urban growth and private sector initiated development including the government involved numerous projects - clearly demonstrate the limitations of legislation and capabilities in implementing complex project like Outer Ring Road.

**4. Implementation of the ORR Project - Creation of New Sets of Urban Problems**

It can be easily presumed that while implementing the proposed ORR project under the existing legal and institutional framework it will create a new set of urban problems. The reasons are numerous. First, the construction wide arterial road together with land development on each side will convert about 3961 ha. of agricultural land into the built spaces in the Kathmandu Valley. Moreover, the trickle down effect of such development will go beyond the planned areas thereby causing further reduction in farmlands, forests, wetlands and open spaces. Land fragmentation and its conversion into built form will not only deteriorate natural environment, affecting the habitat of many species but also reduce the agricultural product. Continuing this trend, even without ORR project, will convert all agricultural land of the Valley except in the hill [15%] into haphazard growth area by 2020 [Table 2]. Open space and recreation areas are gradually decreasing in Kathmandu and Lalitpur: from 255 hac. [4.1%] in 1971 to 245 hac. [3.9%] in 1981 and further to 143 hac. [2.2%] in 1991 [Halcrow Fox Associates et. al, 1991]. The per capita total open space in Kathmandu is about 4.6 sq. m. and the per capita organised open space is much lower at 0.97 sq. m. [Maneesh, 2003] whereas the total garden parks cover an area of 3.06 sq. km. only.

**Table 2.** Reduction of agricultural land but intensification of haphazard urban growth in the Kathmandu Valley

Year	1984	1991**	1994	2000*	2010*	2020*
Urban Area (% of total Valley area)	4.8	11.0	13.1	18.0	26.0	34.3
Agricultural Area (% of total Valley area)	64.0	56.0	49.6	42.2	28.3	14.5

Source: [MOPE, 1999] Note: \*\* Projected by Halcrow Fox, \* projected by linear regression analysis

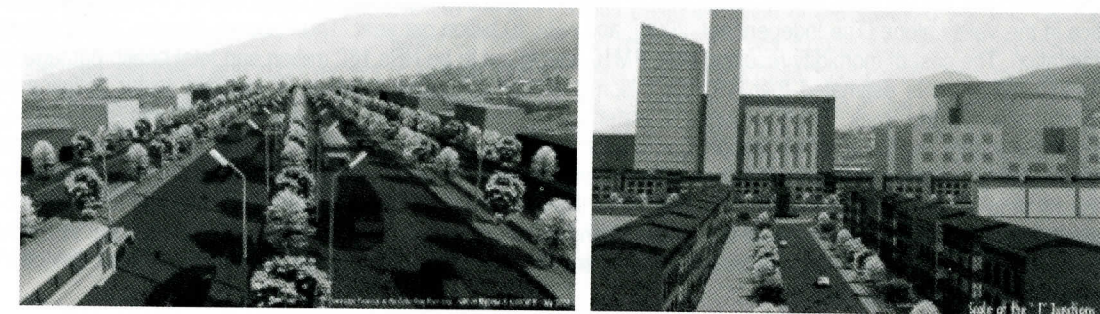
Second, this proposed new development, both the planned in the prescribed area and the unplanned in the surrounding areas, will attract more people from the surrounding districts in the Kathmandu Valley for better employment opportunity, education, health services and other facilities. One of the reasons of rapid urbanisation of the Valley is due to concentration of non-farm employment opportunities in the urban centre with negligence of farm-oriented economy in the rural areas. Construction of huge departmental store, commercial complexes and housing estate along with rapid increase in slums and squatter settlements demonstrates the big gap between rich and poor. The further influx of population due to the construction of ORR can not be easily accommodated in the land pooled area which is the private property. The present form of unsustainable development will further increase. Again, those influx populations will also share the existing capacity of water supply and electricity thereby aggravating the present

state of crisis. The limited natural resources and carrying capacity of the Valley can not simply afford the present trend of urban growth, which does not allow the integration of economic development and environmental sustainability.

Third, the ribbon type development of 250 m land on either sides of the 8 lanes arterial road is proposed to be implemented based on the existing land pooling practice. As the development cost has to be cash out from the local land owners only by selling extra plots rather than from the central and local government's financial support, the land pooling mechanism in the ORR will also face similar problems of little contribution for open space, road network and other socio-cultural and emergency amenities by landowners. The government can neither impose the land use regulation in the land pooled areas nor can control the conversion of residential houses into schools, health centre or other public oriented uses under the existing legal framework. Allocation of land and housing units for urban poor is also difficult. As a result, these new development will be converted into dormitory section of the Kathmandu Valley with little social benefit for the public at large. The only beneficiaries are the local landowners, whose land values increase by many folds.

In such case, the objectives of ORR to plan as new business centre with commercial and other social and recreational facilities in the land pooled area can not be achieved. Despite close proximity of road junction between the radiating roads from the centre to the existing Ring Road, they could not develop as a new business centre to decentralise the socio-economic activities of the existing urban core areas. Same fate will be there in the new road junction, which is far away from the urban centres, if the proposed ORR is implemented in the existing form. As the land contribution from the private land owners will be consumed in the arterial road construction, the government does not have any legal tool and mechanism at present to develop commercial and other activities in the private lands.

Fourth, residential neighbourhood adjacent to such arterial road is not suitable due to many reasons. Proposed conceptual layout of the neighbourhood community on the limited width of land in the same fashion - one open space at the centre, straight roads dividing the urban fabrics in opposite orientation and high rise structure along the arterial road - will form monotonous urban environment [Fig: 5]. Moreover, the transverse vehicular as well as pedestrian network among different blocks of the same neighbourhood is weak due to arterial road in between. As a result, community living on both sides will feel physically, visually and psychologically separated from the same community. As in the past cases, the issues of spatial location and linkages to the surrounding areas, energy conservation, children's safety and peaceful environment, socialization opportunity and sense of community formation, all required for a good residential quarter are hardly acknowledged in the conceptual layout plan.



[a] ORR separating the same neighbourhoods

[b] Residential neighbourhood and high rise construction [T junction]

**Fig.05.** Formation of similar type of residential neighbourhood due to constrains of arterial road and land width.

The proposed land use for a typical neighbourhood area clearly indicates the continuation of the past trend, developing only residential plots [Table 3]. Moreover, by proposing vehicular roads on both sides of the river [for instance at 'Chovar - Satungal' area] [Manandhar, 2008], it has lost the opportunities provided by water by creating open spaces and public amenities along the riverfront. Allocation of singular land use of housing without socio-religious functions combined with construction of individual buildings without coordination with the surrounding structures will definitely reduce the opportunity for interaction and socialisation among the residents in these planned areas too thereby not only minimising the mutual assistance but also deteriorating the sense of place and community [Shrestha, 2007]. Lack of urban design approach and involvement of architects or planners instead of urban designers have significantly limited the integration of two dimensional layouts into three dimensional built form. As the individual building



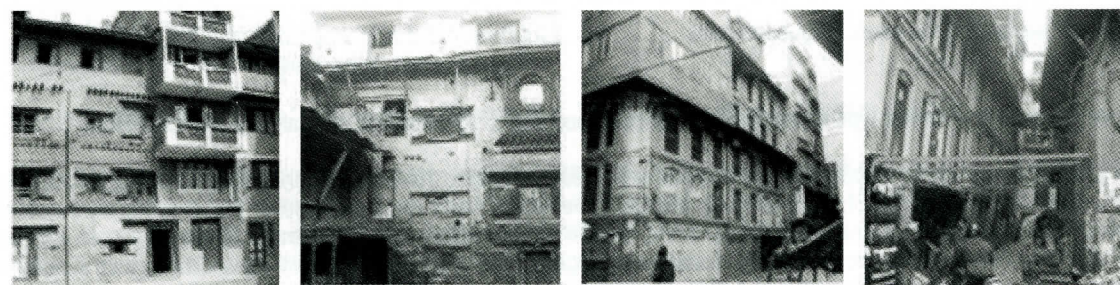
construction on the private land is regulated by the existing building bylaws, the quality of 'public realm' can not be achieved at all.

**Table 3.** Proposed land use allocation for a typical neighbourhood area in the land pooled area

Proposed land use of a typical neighbourhood area				Contribution ratio			
S. No.	Proposed land use	%	Ropani	Plots located along	General plot [%]	Corner plot [%]	Open space [%]
1	Outer Ring Road	11.0	188	Outer Ring Road	41.0	46.0	
2	Internal roads	15.6	265	11m wide road	36.0	41.0	
3	Open space	2.9	49	8m wide road	31.0	36.0	
4	Residential area	70.5	1,196	6m wide road	26.0	31.0	
4.1	Plots to be returned	63.9	1,084	Open space			32.0
4.2	Plots to be sold	6.6	112	<b>Note: 1 Ropani = 508 sq. m.</b>			
<b>Total</b>		<b>100</b>	<b>1,697</b>				

Source: Welink, 2005

Since the newly developed sites through land pooling system will not be self-sufficient in terms of mixed land use and infrastructure provisions such as water supply, electricity, and telephone line and so on, the extra population living in these areas will have to commute to the existing urban centres for work and have to rely on the existing facilities and amenities. Population growth along with increase in socio-economic activities will definitely create extra demand for urban services and infrastructure facilities and failure to supply in the same proportionate will make them costly, insufficient and unreliable and highly vulnerable. The extra trip generated by people living in the new development will create more traffic congestion particularly in the existing city centres and historical core areas thereby increasing air and noise pollution as well as community time with negative consequences on health, psychology, socialisation and economy. Environmental pollution has not only caused diseases such as dysentery and typhoid, high infant mortality, up to 101 per 1000 live births and various acute respiratory infectious diseases but also results in huge losses of NRs.680 million per annum [US\$1=NRs.70.00] due to pollution, NRs.80 million due to contaminated diseases such as Jaundice in the Valley alone [The Independent, 2000], and NRs.10 billion per year [The People's Review, 2000] due to poor sanitation. The cost of morbidity resulting from PM10 was found to be NRs.180 million and total health damage to be NRs.210 million. It is estimated that NRs.0.5 billion per year in tourism revenue is lost due to air pollution in Kathmandu valley [World Bank, 1997]. In terms of water supply, though the daily demand is of 170 mld [million litres per day] in the Valley, the Nepal Water Supply Corporation is able to supply only 120 mld during the rainy season and just 80 mld during dry season. Intensive use of ground water for water supply has caused the dropped of groundwater level from 9 m to as low as 68 m over the last few years thereby drying off the traditional dug wells and stone spouts [Dhungedhara]. Addition of population in the already congested urban centres and the historical core will not only expose significant percentage of population under the seismic risk but also make rescue and relief operation difficult in case of a big earthquake. [Fig: 6]



[a] Vertical division of old house [b] Haphazard creation of openings - windows/doors [c] RCC addition on the existing old house [d] Pedestrian path as a 'depth' trap

**Fig 06:** Intensification of earthquake vulnerability due to haphazard transformation of buildings in the core areas

Fifth, numerous radial roads [2-4 lanes] merging into the proposed ORR [8 lanes in total] will form 'bottle neck' at the road junctions and the smooth vehicular movement will be difficult unless the junctions are redesigned. Significant amount of extra budget will be required to improve those junctions which can be neither fulfilled from the land pooling mechanism nor from the internal source of the government. Sixth, numerous historical towns like Changunarayan, which is a World Heritage Site and Bungamati, and Khokana, which are potential to be included in the World Heritage Site, have preserved their cultural and religious significance up to now due to little influence from the haphazard urban growth. However, linking these traditional settlements with the Outer Ring Road and rapid urban development along both sides of the road will certainly pressurise these towns for modernisation and construction of modern Reinforced Cement Concrete [RCC] structures like other parts of the Valley. The scope of losing their cultural identity is very high.



[a] High rise-high density urban structure in the core [b] Haphazard urban growth and construction of buildings [c] Urban sprawl in the city peripheral areas

**Fig:07.** Transformation of medieval cities of the Valley into high rise-high density and urban sprawl

**5. Implementing the Proposed Outer Ring Road - Opportunity for the Planned Development**

Planned development enhances economic development, allows optimum use of resources, and reduces disaster vulnerability. This ambitious ORR project acting as a planning tool can not only guide the future development of the Valley but also solve some of the existing urban problems, if it is designed and implemented under the new legal and institutional framework and some of the pre-requisite conditions are fulfilled. First, this project will regulate the vehicles coming to the Valley from outside providing alternative ways. Vehicles using 'Bardibas - Sindhuli' highway can easily flow north-south of the Valley through this ORR. Also, the present chaotic situation at 'Kalanki Chowk' can be solved. At present, compared to the increase in vehicular population from 54,776 to 2,49,282 between 1991 to 2003-'04, extension of road network from 713 km to 11,319 km in the same period [Niraula, 2004] has proved to be inadequate thereby creating traffic at various locations. However, construction of 72 km road network along with improvement of many road junctions will definitely improve the present chaotic traffic condition of the Valley. It will also facilitate the scope of public transportation linking different commercial and residential areas. Equally important is the restructuring of the road alignment and improvement at various road junctions meeting the radial road coming from the city centre to ORR for smooth transition of vehicles into different directions. Second, no family living in the project site needs to be displaced into other area due to land pooling system. Moreover, implementation of this project will create new employment opportunities in planning, design and construction as well as in housing, commercial and service sectors. Not only local people but also the professional working in different sectors will benefit from this project in terms of economy as well as work experience. The present state of haphazard and in most cases illegal settlement along the ring road can also be solved through planned development of housing and other land use activities.

Third, this ambitious project has a lot of potential not only to fulfil the housing deficit, shortage of qualitative infrastructure and other public amenities required for the metropolitan citizens but also to address the issues of urban poor, slums and squatter settlements. In fact, the vision of the Kathmandu Valley to develop as a National Capital can be realised through effective implementation of this project. Compared to the land development and housing projects implemented by both public and private sectors in the past, this proposed project is the biggest development so far the public agency has ever handled in terms of scale, size [3961 ha. of land development] and complexity due to the combination of arterial road with urban development. In the past, the government was able to develop just about 41.25 ha. of land from site and services and 240 ha. of land with 7184 number of housing and other plots benefiting 5980 landowners from land pooling techniques in the last two and half decades [1977 - 2003] whereas the local real estate companies and individual land brokers opened up more than 1,270 ha. of land for residential purpose in Kathmandu and Lalitpur municipalities between 1971 and 1981 [Shrestha, 2006a]. Similarly, the private sector brought out about 965 housing units on the 12.71 ha. of land in the last three years. There is a wide gap between the demand and supply of land and housing lots in the Kathmandu Valley. If the present trend is continued, then there will be only 127.76 ha. of



land and 3,832 units of housing available by 2011, which is far below the demand [Table 4]. Also, about 3.3% of the total population of the Valley [assume as 16, 45,091 at present] live below the absolute governmental poverty line of NRs. 11,056.80 per person per year [NPC, 2005]. However, single project of ORR, if planned properly, can fulfil the demand of housing units and land required by 2011.

**Table 4.** Demand and supply of housing land and lots by 2011 in the Kathmandu Valley

Particulars	Demand [annually]	Supply [annually]	Needed by 2011	Continuing existing trend by 2011
Land	409.12 ha.	15.97 ha.	3,273 ha.	127.76 ha.
Housing lots	24,547 units	479 units	1,96,376 units	3,832 units
Outer ring road [land pooling]		3,961 ha. [total]		

Fourth, development of satellite towns at different nodal points as 'self sufficient' sub-centres with balance of living and working facilities will not only help to absorb some of the economic activities of the existing urban centres but will also create lively environment in the newly planned areas. Haphazard transformation of building structures in the city centres can be significantly reduced thereby mitigating the excessive pressure on the old infrastructures. The proposed satellite towns should be 'high rise-high density' at the nodal points with planning of 'low rise-high density' mixed housing and other community activities at the peripheral areas. Moreover, this project can be an opportunity to develop some of the public facility required for metropolitan city such as central bus terminals, administrative centre, sport complex and entertainment zone, etc. To realise such opportunities, some changes in the existing legal and institutional arrangement is essential. First, the present technique of land pooling needs to be modified in many ways especially in terms of master layout plan, land use distribution and in financing the projects. The project area should be designated as 'comprehensive development zone' and urban designers should be involved in preparing master layout plan and formulation of planning standards and urban design guidelines. New mandatory clauses and other suggestive flexible design guidelines should be developed with consensus among the involved parties before the execution of the project. Second, for comprehensive development, not only the concerned line agencies such as Department of Road and Traffic Management, Department of Water Supply, Electricity at the 'horizontal axis' but also the public agencies at central, valley and local levels in the 'vertical axis' needs cooperation and coordination from development of concept to completion of various parts of this project. Moreover, they need to share the development cost too. Then only, local communities will come to forefront in contributing larger percentage of lands for other amenities. In this way, the issues of housing provision for urban poor, higher density through mixed housing types including apartment and other social and emergency amenities can be incorporated in the residential neighbourhoods and commercial centres. Second, a central level coordinating mechanism should be developed to organize among many municipalities, Village Development Committees and city level line agencies. The present proposed mechanism of formulating 'Land Management Sub-Committees' in each three districts under the existing Town Development Act 1988 is inadequate. Finally, urban design techniques of incentives in different forms such as tax cut, floor area bonus and other similar provisions should be used in implementing the projects. Fifth, conservation oriented development plan and program for traditional settlements like Changunarayan, Bungamati and Khokana are essential so that the benefits of road construction could be realised in economic development and at the same time ensuring their traditional characters. Promotion of building materials, traditional arts and crafts are recommended. Maximum exploitation of cultural heritage will not only benefit the locals but also the conservation of the town.

## 6. Conclusions and Recommendations

Though this ambitious project poses both challenges as well as opportunities for the systematic growth of the Kathmandu Valley, serious discussion at national level and more critical analysis on local issues in implementing this scheme is required. The present haphazard urban growth of the Valley as well as lack of regulation on the private sector land and housing development and the numerous land developments, housing and infrastructure improvements by the public agencies have demonstrated that the existing legislation and institutional capabilities are inadequate and ineffective to implement such a complex project. As a result, implementation of this project will attract more population from the surrounding districts and promote 'low rise low density' individual houses with many vacant but developed plots in the land pooled areas but urban sprawl will continue in further extended areas like the dormitory pockets. Most of the people living in these areas will be not only working in the existing urban centres of the Kathmandu Valley but they will also share the existing infrastructure and social and emergency amenities. The situation will be worse than it is. To overturn this trend, changes in the present practice of land pooling and improvement in the existing legal and

institutional framework is essential. Then only, development of nodal points as a 'self sufficient' business centres supported by residential neighbourhoods is possible to achieve the balance growth of the Valley, and to reduce development pressure on the historical core areas and to promote new business centre equipped with high tech infrastructure as required for the 21st century. Nonetheless, after reviewing the public sector's performance in urban development and infrastructure projects in the past decades, present political situation in the country, people's expectation on result oriented development, such complex and national level project needs more public discussion and critical analysis on different aspects of urban development and public life. In fact, this project was justified based on engineering aspects focusing on the arterial road construction with little study on the socio-economic aspect. Hence, some strategic recommendations are suggested to address the existing urban problems and to enhance the capacity building of public sectors, which will help in successful implementation of ORR project in future.

[a] Develop planning standards and urban design guidelines to regulate the ongoing land development and large scale urban projects such as housing and apartment construction, commercial complexes and departmental stores, etc. as well as the haphazard transformation of buildings in the historical core including the urban sprawl in the city peripheral areas;

[b] Regulate the present chaotic condition of traffic situation in the Kathmandu Valley through multiple measures: regulating land use and transportation network, encouraging use of public vehicles but discouraging private one especially two wheelers, improving street network and road junctions, defining continuous pedestrian movement network, improving traffic management system, and so on;

[c] Use different urban design techniques such as tax incentives, flexible design guidelines, introduction of design review system and consensus building to promote desirable development [land use and building form] in new and redevelopment works.

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## Workshop on Fire Safety in Buildings - Role of Architects

Department of Architecture,  
Bangladesh University of Engineering & Technology  
November 8-9, 2007

A two day long workshop on **Fire Safety in Buildings - Role of Architects** was organized by the Department of Architecture, Bangladesh University of Engineering and Technology (BUET), Dhaka. The workshop was held in the Directorate of Continuing Education (DCE), BUET on 8-9 November, 2007. Professor Dr. A.M.M. Safiullah, the Vice Chancellor of BUET, inaugurated the Workshop and Dr. Nizamuddin Ahmed, the Head of the Department of Architecture, delivered his welcome note in this ceremony. Prof Shamim Z Basunia of Civil Engineering Department, Mubasshar Hussain, President of the Institute of Architects Bangladesh, ASM Ismail, Chief Architect of Public Works a Department, and Brig General Rafiqur Rahman, Director General of Fire Brigade and Civil Defence, also delivered speech on this occasion.

Fire safety is a component of Building Safety. It concerns safety measures to prevent the effects of fires. Fire safety is the result of proper use of measures. Architectes play an improtant role to prevent the fire hazard in buildigns by following proper codes and applying fire resistant materials.

The objective of this workshop was to develop a general awareness regarding Fire safety in Buildings and to train-up the Architects regarding the codes and techniques for fire safety in different building types. To address the current lack of awareness among the designers and building users, this workshop aimed to instill in the participants an understanding of the importance of proper fire safety in buildings.

Thirty one participants had attended the Workshop. Among them professional Architects (Candidate Members and Members of IAB) were the majority. Besides, Civil Engineers, postgraduate students of BUET and Journalists had attended the Workshop.



Figure 01: Inaugural Programme and Participants in the Workshop

### Programme:

The whole workshop was composed of three Modules.

- Module A -- Lecture series
- Module B -- Field Visit and Fire Drill
- Module C -- Interactive Session

Module A followed the inaugural session with the major lecture series to create background knowledge for the participants. Professor Dr. Nizamuddin Ahmed delivered a number of lectures on Fire Problems of Dhaka City, focusing on the problem of Fire Prevention in cities; the Rules and Regulations for Buildings. Dr. Nizamuddin Ahmed spoke on fire and High-rise Buildings, an essential topic of this workshop. Major S. Md. Shahjalal M Abdus Salam, Fire Service & Civil Defense, delivered his speech on Available Fire Fighting facilities in Bangladesh.



Dr. M. Shamim Z. Bosunia, Prof. Dept of Civil, BUET, delivered his lecture on Fire Resistance of Structural Elements. Design Considerations in Buildings, was an important issue of this workshop. Ar. Mubasshar Hussain, President IAB, shared his ideas on Insurance Coverage for Fire Damage. Selection of material, design of fire escape, position of lift core, mechanical support systems and equipment (ventilation, heating, and cooling), Building Codes in different Building types were discussed in this session. Lecturers presented facts on Density of built up areas, Horizontal and Vertical development, Accessibility of Fire fighting equipments, Heavy traffic, Number of Fire Fighting instruments in relation to city population; Citizen awareness of fire hazards

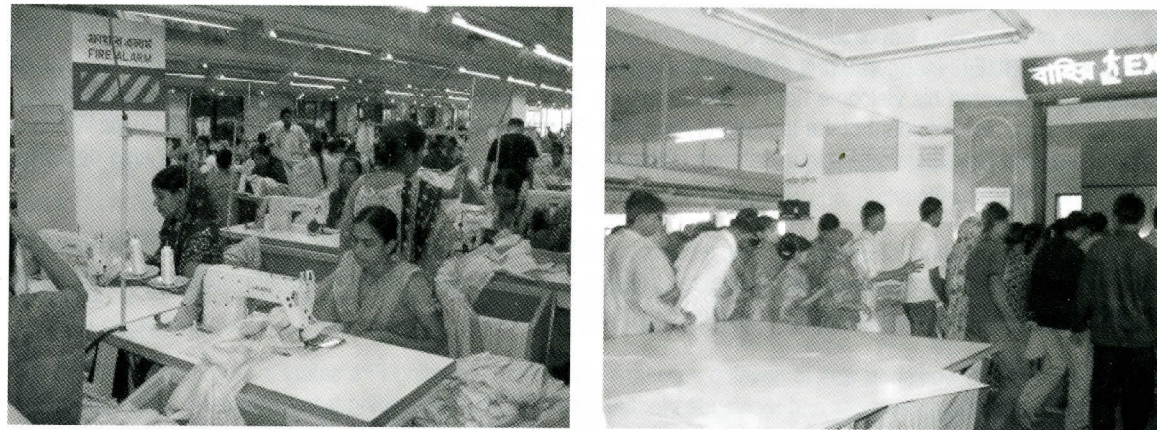


Figure 02: Working Environment in Factory and Fire Drill

In **Module B** Field Visit and Observations were arranged for the whole group on the second day of the Workshop. The participants visited a Garments Factory at Mirpur, Dhaka with the objective to have an understanding of a fire safety issues and to assess the fire safety measures used in specific industry buildings. Participants were divided into 4 (four) groups and they concentrated on the following aspects.

- Group 1: LAYOUT DESIGN - covering the planning and layout details, location and related aspects
- Group 2: FIRE FIGHTING EQUIPMENT- considering the facilities regarded fire fighting system
- Group 3: BUILDING AND FINISH MATERIAL- studying the materials used for safety measures and fire resistance
- Group 4: MEANS OF ESCAPE--the situation of means of escape in case of fire.

A **Fire Drill** was undertaken on the same day by the workers of the industry. The objective was to assess the Fire Drill undertaken in the Industry in the light of the Fire Safety requirements and to assess the performance of the Design of the particular building, use of Fire extinguishers and related design issues by the participants.

In **Module C** an Interactive Session was held among the participants for sharing of ideas and experiences acquired. They discussed among themselves in groups and prepared a presentation on their experience of the Visit and the Fire Drill. In the Plenary Session the participant groups presented their ideas, which were later evaluated by the Experts.

In this occasion Fire Brigade arranged an Exhibition of Fire Extinguishing equipments and related aspects. They also demonstrated the equipments for the observers and the participants, who made a first hand experience of using the fire extinguishers.



Figure 03: Fire Drill

Moreover, a volume of handbook was distributed among the participants which covered wide range of issues like Fire in Residential Building: A Cause for Concern in Bangladesh; Disaster in Bangladesh, Fire in tall buildings, 'Safety Signs and Symbols: Their Impact and Influence on Accident Prevention in Industrial Environment of Bangladesh, Fire Prevention and Control in Industries, Fire: Warning of Impending Disaster.

It also included Objectives, Planning and Activities of Fire Service and Civil Defense, Permanent Fire Fighting System and Reasons of Fire in Tall Buildings, RULES AND LEGISLATIONS (Bangladesh National Building Code, Fire Prevention and Control Rules, Bangladesh Gazette: Addition, August 9, 2007, Bangladesh Gazette: Addition, March 6, 2003), Rescue and Evacuation Procedure; and other Selected reading material from 'Designing for Fire Safety'.

An evaluation of the Workshop was prepared from the feedback of the participants. The participants in their feedback expressed the workshop was rich in content and presentation only lacking in adequate time and duration, particularly for lectures and discussion. The field trip and fire drill was very relevant and organised and helpful for practicing architects. Fire fighting equipment demonstration was very enjoyable and exciting. The plenary session was also interesting and interactive to the participants with their multimedia presentation.

In a concluding session the workshop participants were awarded certificates. The workshop was concluded with thanks and comments from the Convenor Dr. Farida Nilufar. The Workshop was successful with the help of the Working Committee formed by Prof. Dr. Farida Nilufar, composed of Assistant Prof. Catherine D. Gomes, Assistant Prof. Tarek Haider, Lecturer Mr. Ashiqueer Rahman and Mr. Muntazar Monsur of the Department of Architecture, BUET. Through this event in BUET, it was aspired that the Department had been successful in generating a consciousness and sense of responsibility among the participants who will in turn dissipate the knowledge to the community.

Compiled by:  
Catherine D. Gomes,  
Member of the Workshop Committee  
And Assistant Professor,  
Department of Architecture, BUET



## Workshop on Project Management for Architects

Department of Architecture,  
Bangladesh University of Engineering & Technology  
December 10, 2007

A one daylong Workshop on Project Management for Architects was organized by the Department of Architecture, Bangladesh University of Engineering and Technology, Dhaka, on 10 DECEMBER 2007. The workshop was held in the Department of Architecture, BUET organized by a committee formed by Mahmudul Anwar Riyaad as co-ordinator while Muntazar Monsoor and Tanzia Sharmin as members. The Head of the Department Professor Dr. Nizamuddin Ahmed delivered his welcome note while the President of IAB Architect Mubashsher Hussain officially inaugurated the event.

Construction Project Management provides the necessary processes, techniques and tools for accomplishing successful project outcomes. Construction Projects, particularly those of a complex nature, have benefited from the concepts of project management through improved costs and time performance. Architects being a key player of the construction industry require a better understanding of project management concept for efficient project delivery.

The Objective of the Workshop was to give an introductory knowledge of General principles of Management as well as Construction Project Management concepts that might help architects in decision-making process. The topics discussed were as follows:

1. General Principles of Management
2. Construction Project Management
3. Construction Project Management in Bangladesh
4. Construction Management Sharing Experiences



Figure 01: Inaugural Programme and Participants in the Workshop

The whole workshop was composed of three Modules.

- Module A -- Lecture Series
- Module B -- Interactive Session
- Module C -- Certificate Awarding Ceremony

There were 20 registered participants, who were mainly Architects and Civil Engineers. The programme started with the Inaugural session at 12:30 pm. Module A followed the inaugural session from 2:00pm after the lunch break with the major lecture series to create background knowledge for the participants. General Principles of Management and Construction Project Management was discussed from 2:00pm to 3:30 pm. Lectures on Construction Project



Management in Bangladesh was from 4:15pm to 4:45pm with a break for tea and prayer. Experiences from Construction management were shared with the participants from 4:45pm to 5:15 pm.

In Module B an Interactive Session among the participants was held from 5:45pm to 6:45 pm for presentation of ideas and experiences.

Module C was a concluding session where the workshop participants were awarded certificates. The workshop was concluded with thanks and comments from the convenor. Through this event in BUET, it was aspired that the Department had been successful in generating project management concept for efficient project delivery among the participants.

Compiled by:  
Mahmudul Anwar Riyaad  
Co-ordinator, Workshop Committee  
And Assistant Professor,  
Department of Architecture, BUET

## General Instruction for paper submission

Generally papers should not exceed 3000 words including references, however primary research papers may contain a maximum of 5000 words. Short contributions of 1500 words may also be sent.

All contributions should indicate 4/5 keywords and have an Abstract of less than 200 words.

Manuscripts should be submitted on one side of A4 size paper

Heading 14 Arial narrow bold

Sub Heading 11 Arial narrow bold

Body text 10 Arial narrow

End note 9 Arial narrow

Double-spaced and leaving 1.2 inch margin space on all sides of the paper.

Referencing should preferably follow the Harvard system (Author's surname, followed by publication year in the main text; Bibliography in alphabetic order compiled at the end of the paper). Endnotes can be given if desired by putting reference number in the text in 9 point (Arial Narrow) superscript.

For illustration use number consecutively: Fig.1, Fig.2 etc. In bold (9points). Compose the page with illustrations as that of the main text, keeping similar margins. Width of the illustrations should not exceed 6 inches (width of column). Preferred width will be either 3 or 6 inches. Original illustrations must be provided separately in soft copy (300 dpi and jpeg format).

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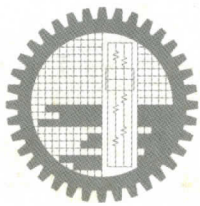
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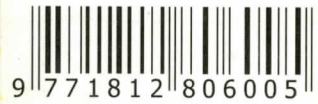


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