

Aesthetics and Building Appearance on Urban Commercial Street- A Case of NGO Road in Narayangarh

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Abstract

The urban environment is changing as the development of urbanization takes place and the common parameters of urban environment are also being transformed. Today's urban environment incorporates a number of components that influence the quality of life, have an emotional affect on citizens as well as the architecture of buildings and constructions. Narayangarh is an emerging city and NGO Road is one of the most used streets in Narayangarh and the urbanization has also impacted in the buildings of this commercial street. This research is an attempt of in-depth study of the aesthetics and building appearance of NGO road in Narayangarh. The focus of the research lies in studying the building facades elements and its appearance from the direct observations, questionnaire survey and interviews. The methodology applied for the study is case-study methodology and the method applied is mixed i.e. qualitative and quantitative. The study is limited to observation of building frontage while the other three sides and interior space of buildings are not considered. Study concludes that there is the diversity in building facade elements as well building type, material, construction, height, color, etc. The use of modern building materials reflects the modern aesthetics, while the rectangular forms, horizontal and vertical lines, shading devices in facade indicate the adaptation of site-specific design. In the case of people's perception, the result shows majorities of respondents are not satisfied with the existing condition of the building fronts and its appearance thus, prefers an active, satisfied and pleasing environment.

Keywords

Aesthetics, Buildings, Building Frontage, Facade Elements, Urban Commercial Street

1. Introduction

A city is composed of numerous tangible and intangible elements. Elements such as natural setting, land-use, circulation system, built form and people's behavioral pattern are more articulated which contributes towards urban aesthetics [1]. The urban environment is changing as the development of urbanization takes place and the common parameters of the urban environment are also being transformed. Today's urban environment incorporates a number of components that influence the quality of life, have an emotional affect on citizens as well as the architecture of buildings and constructions, landscape, panorama of city, culture, environment, and much more [2]. Narayangarh, Bharatpur's largest business area, is a major transportation and commercial hub in Nepal and human movement has played a significant role [3]. With the change in way of life, standard of living,

socio-economic conditions, and even the people's perception, the urban structure could not remain the same and thus transformed gradually [4]. Streets or city spaces that are perceived as insignificant and do not reflect the social or environmental dimensions sought after by city dwellers are considered poor aesthetically [5]. In the case of Narayangarh, most urban road lacks good street frontage which adversely affects the behavior of users & aesthetic aspects of urban environment. Most of the buildings and infrastructures are unplanned and have resulted in substandard and irregular housing patterns.

The main objective of this article is to explore the aesthetics and building appearance in urban commercial street of Narayangarh i.e. NGO Road, defining major elements of the building that are used as the street frontages. The specific objective is to identify existing problems in building facades of urban commercial street due to urbanization and its

impact on aesthetic quality of street.

2. Literature Review

2.1 Aesthetics and Architecture

Aesthetic as practiced in architecture is a reference to a particular design aspect or style that adds appeal and pleasure to any type of architectural construction. Moreover, aesthetics are based on taste and the evaluation of human sensory perceptions. Aesthetic judgment tremendously affects how we judge beauty. In other words, the associations that specific design features, qualities, and spatial layouts elicit within us can be a wonderful source of aesthetic pleasure. While making an aesthetic judgment, form, color, materials, shape, lighting, and spatial organization all have important significance. [6].

2.2 Buildings and Building Aesthetics

The most prominent aspects of urban architecture are buildings since they create the city's street boundaries and shape and articulate space. Well designed buildings should have high quality of architectural concept, design, materials, and construction as well as scale, size and proportion of building [7].

Aesthetics of a building is one of the main considerations in architecture. It should also be designed to meet standards for safety, serviceability, durability, and aesthetics as well as to ensure proper structural performance over the course of its service life. While designing buildings, a very important aspect that should not be ignored is the awareness of the current trends or patterns to use particular types of materials. Considering knowledge and best practices offered by architects, designers, investors, and builders should serve as the foundation for confidence on their suitable selection, usage, and maintenance [8].

2.3 Facades and Frontage Zone

Street life is significantly enhanced by the utilization of the walkway and building facades. Thus, building frontages are a crucial part in the effective street. The aesthetic quality of the urban street, especially the quality of building facade, which should follow aesthetic uniformity with consideration of design unity, is balanced by a number of public realms (public facilities), shape and type of building, building frontage, building height, etc. [9]. The development

should be balanced with the quality of road space as a link between pre-existing buildings and an aesthetic supporter of urban space [10].

2.3.1 Building Facade Components

Facade is a visual expression or depiction of a variety of emerging features. Building facades in urban architecture are not only two-dimensional but also three-dimensional so that they can depict each building in the general public (city) or vice-versa. For this reason, the building facade component observed comprises [11]:

1. Gate and Entrance
2. Ground Floor Zone
3. Windows and Entrances to Buildings
4. Guardrails (railing)
5. Roof and Building Endings
6. Signs and Ornaments on Facade

2.3.2 Facade Configuration Elements

The facade configuration elements that can form the appearance of a building are [11]:

1. Elements of space openings
2. Field of building facade
3. Application of dominant facade material
4. Types and methods in finishing facade
5. Color processing techniques

2.4 Previous studies on aesthetics, building appearance and its findings

2.4.1 Case of Al-Khan Street, Tanta City, Egypt

Al-Khan Street is situated within the historical and commercial district in Tanta city. The length of Al-Khan Street is around 210 m [12]. Firstly, urban structure and visual composition was studied. Then problems in street was identified and the renewal of street was proposed.

Urban Structure: A study of the street's land use reveals that ground level is full commercial. The majority of the buildings that overlook the street are in poor condition, which demonstrates a lack of maintenance.

Visual Composition: The area is linear and is shaped by the buildings. Street is as well characterized by its human scale. The proportion of the street sector

fluctuates according to the different building heights along the path.

Problems in Al-Khan Street: Composition represented in the diffusing of activities with the absence of laws, street's appearance endures from unclear details of the elements, lack of general taste and consistency in the colors, etc.

Street renewal: For the street renewal, two steps were followed. First step includes the preservation and conservation of historical buildings, keep present economic activities, provide green areas, etc. Second step includes creating a secure environment, emphasize pedestrian path, activate the distinctive architectural character of area, etc. Then the street was proposed.

2.4.2 Case of West Kalimantan, Indonesia

Study was performed at commercial area on Jalan Diponegoro, Jalan Agus Salim, and Jalan Gajahmada at Administrative Village of Benua Melayu Darat, West Pontianak sub-district, Pontianak, West Kalimantan. Firstly physical identification analysis of facade corridor space was done based on facade elements. Then visual quality analysis of corridor was done that includes [13]:

- Storefront Elements includes the same Awnings with the same dominant height but there are differences in width, material diversity, and color.
- The entrance of the building is perpendicular to the road without borders
- It does not have a guardrail
- Landscape and planting elements are found on the 2nd-floor balconies
- Some buildings are modern style buildings with the dominance of glass, concrete, ceramics and aluminum as building materials.
- Some lighting are from exterior displays or building signage, but some lighting are applied in the entire building along with exterior displays and signage

2.5 National Case

2.5.1 Case of Bandipur

The main objective of BECTP was: "to develop Bandipur as sustainable eco-cultural tourism centre with a network of similar hill towns to revitalize, protect and promote their cultural and natural

resources with programs that have replication values" [14].

Project Activities: Two traditional houses were restored and adapted for tourist accommodation. Similarly, one house in middle was restored into a visitor's center. In total 11 house owners had applied for restoration, when the project called for it. It is rather a different approach of restoration, unlike initial phases of BDP. The house owners were involved in restoration along with the project team [15]

Road as a way to Modernity: Road is the main reason for the rebirth of the place and modernization.

Implementation: The project was implemented by the respective local committee under the supervision of the project team. Numerous meetings with the local committees were held to implement the project activities effectively. In some cases, designs were prepared during the meetings with the local implementation committee.

Conclusion: Projects highlight the importance of public participation in urban renewal process, so that the project is successfully completed and is sustainable. Bandipur project is implemented systematically through exchange of ideas among the project partners and involvement of local community.

3. Methodology

The aesthetics and building appearance of the NGO Road is explored through the case study methodology which involves the direct observation, questionnaire survey and key informant survey that focused on building facade elements. The method used is mixed i.e. qualitative and quantitative research method. For the observation, 30 houses were chosen randomly in a systematic method with interval of every fourth house in both rows. From observation, it extracts non-numeric data so research falls on qualitative descriptive research method that seeks to describe the existing conditions. Also, quantitative analysis is done using questionnaire survey with 138 respondents in which numbers and statistics are extracted. Hence, research falls on pragmatic paradigm. The database are collected from the primary and secondary sources. Primary source includes field visit, observations, photographs, interviews and questionnaire survey while, secondary source includes literature reviews from published articles, research paper, journals, and websites.

Based on the gathered information from field survey, the existing conditions of building elements and rising problems are highlighted analytically. Then the database are analyzed and then discussed involving the concept of aesthetics and building appearances including facade elements and people’s perception towards existing condition that affect the urban street eventually. The analysis is carried out on three steps that includes overall visual quality analysis, major problem identification and triangular analysis.

4. Limitation

The interior of buildings are not taken into considerations. The observation limits to the building fronts and other three sides are not included. The sample size for questionnaire limits within the street users and surrounding residents.

5. Study Area



Figure 1: Study Area: NGO Road, Narayangarh

NGO Road is the street connected to the National Highway i.e. East-West Highway with distance of 1.10km. There is Narayani River to the left of street and the main market area to the right side. The street is divided into different parts; Bhagwati Marg, Harihar Marg and Narayani Path. The reason to choose this area is strongly defined by its cultural and economical values. Since it directly connects to the Mahendra Highway, and the corridor reside along the Narayani River, people often like to visit the place and use the route for various purpose. This street is one of the most used and busiest Road of Narayangarh but lacks the aesthetic value which has many scopes and opportunities in the future.

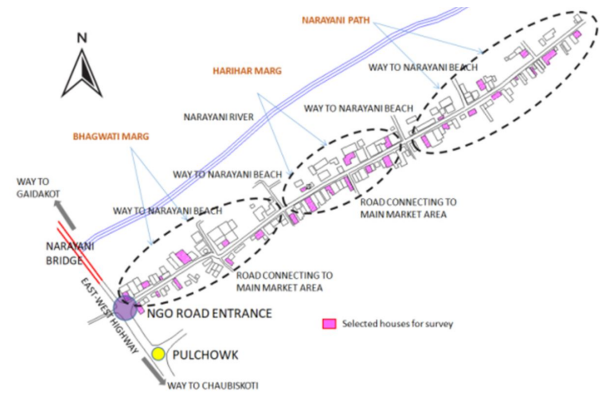


Figure 2: Raster Layout map of NGO Road with buildings footprint

5.1 Land Use



Figure 3: Land-Use map of NGO Road

The land use of street is mix-use which consists of various types of buildings and uses. The lands are mainly used for residential, commercial, office and educational. Some buildings are old and some are newly constructed. Streets are mostly used for commercial like stores or fast-food restaurants. Also, some residential buildings are newly constructed with modern design and modern materials.

5.2 Bye-Laws of Narayangarh

Table 1: Bye-laws for street with residential or mix-use buildings

Type	Min. Width	
Right of Way (ROW)	2.43m	
Setback	Building Ht. 10m	1.5m
	10m >= 17m	3m
	>17m	5m
Open Space	1.5m	
Turning radius	3.5m	

Table 2: Building Bye-Laws

Building Type	G.C.R	F.A.R	Building Height	Floor Height	Plinth	Open Space	Plot Size
Residence	Area: 80m ²	90%	GCR 70%= 12m max.	2.75m	60cm	1.5m	102 Sq.m (6 Dhur)
	250m ²	70%					
	>250m ²	60%					
Mixed	Area: 80m ²	90%	GCR 70%= 15m max.	2.75m	60cm	1.5m	102 Sq.m (6 Dhur)
	250m ²	70%					
	>250m ²	60%					

If building height is more than 15m:

- It should have lift
- It should have fire hydrant and emergency exit
- Structural design is necessary

6. Data Collection

6.1 Observation of Whole Street

6.1.1 Urban Structure

According to the street observation, ground floor is exclusively used for business purposes. In Bhagwati Marg, buildings are typically three or four stories tall, whereas in Harihar Marg and Narayani Path, most buildings are one or two stories tall. Regarding the street’s business aspects, the study’s commercial activities occur in fabric and garment stores, hotel and lodges, retail shops, cafes, and so on.

6.1.2 Skyline



Figure 4: Building skyline towards west of street



Figure 5: Building skyline towards east of street

Buildings area found one to five storey which are human scaled. There are no taller buildings that creates unpleasant visual image of the street. But the planning of urban skyline is underdeveloped. The overall structure of the area does not create visible pleasantness.

6.2 Observation of Buildings

For the observation, 30 houses were taken out of which 10 were from the Bhagwati Marg, 10 from Harihar Marg and 10 from Narayani Path. Different elements of buildings were observed such as façade elements, building signage, roof, materials, structure, color etc.



Figure 6: Few Buildings from Bhagwati Marg

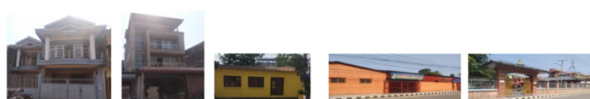


Figure 7: Few Buildings from Harihar Marg



Figure 8: Few Buildings from Narayani Path

Building includes various types such as commercial, residential, mixed, religious, temples, etc. The heights of buildings were from one storey to maximum five storey. One storey buildings are generally residential or storage and more than one storey buildings are mix use or hotel. Similarly, minimum width of building was found to be 4.7 m while, the maximum width was 19 meters. Colors of buildings were variations. Primary, secondary and tertiary colors were found in the building exterior. Almost all buildings were modern type except temples were traditional style with brick facade and tiered roofs. Buildings in the site were found to have different structures; R.C.C, Steel and some were temporary structures too.

6.2.1 Facade Elements

Main Gate: Most of the buildings are directly connected to the road. Very few buildings have entrance gate and they were mostly residential or mixed (residential+ retail) buildings.

Doors: The maximum commercial buildings have rolling shutter and some have channel gate in ground floor. In upper floors, the doors were found wooden/net.

Windows: Windows were simple square shape with wooden material, aluminum and glass. Aluminum is mostly used in commercial buildings.

Awnings: There were no awnings in doors and windows. Balcony provides shade for the openings.

Balcony: Every multiple storey buildings have balcony with generally 1 meters width

Guard Rail: Guard rails were found in upper floors and in roof. The heights of railings were generally 1m. Materials were mostly steel. Some have concrete post also called as “Damaru”.

Exterior Display: In some commercial building the exterior façade displays ACP. Almost every commercial building has advertising board in front. In temples, there were inscriptions in wall.

Planters: Only very few hotel buildings have planters.

Shading: Very few hotel buildings have horizontal and vertical shades. Other type of buildings does not have.

Lighting: There are exterior lighting in the ground floor and in the balconies of upper floors. There were no such displaying lights in the building.

Sign and Signage: There is no signage in buildings. Temples were identified by “Trishul”. Some buildings have sign on window display, but none of the buildings have mural signage.

Roof: Most of the building have flat R.C.C roof, while some have C.G.I truss roof above it. Very few buildings have plants or garden in roof.

Cornice: Only the temples and religious buildings have cornices in the building.

Materials: Materials used in buildings includes concrete, brick, steel, aluminum, CGI, concrete block, etc.

6.3 People’s Perception

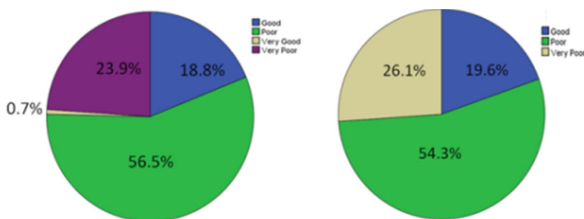


Figure 9: Building condition (left) and Overall transparency (right)

The pie chart above shows that maximum i.e. 56.5 percentage and 54.3 percentage people responded respectively that the building condition and its transparency as poor and for overall transparency.

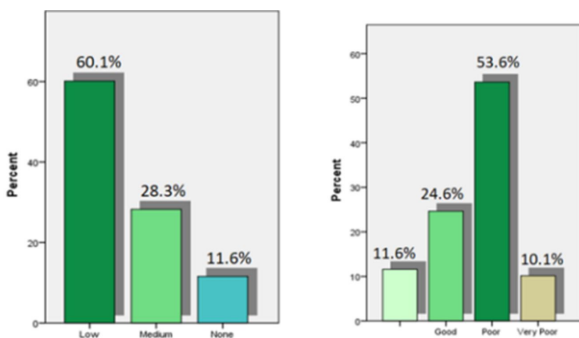


Figure 10: Greenery presence (left) and quality of greenery (right)

The graph above shows that maximum i.e. 60.1 percentage people responded low presence of greenery in building and 53.6 percentage thinks it has poor quality.

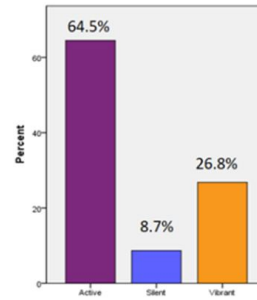


Figure 11: Preference for building frontage

Graph above shows that maximum i.e. 64.5 percentage people prefers active building frontage.

6.4 Expert’s Views

Interview was taken to understand expert’s sight towards urban trend and built form. Key informant includes Mayor, Architect/Urban Planner, Ward Head, Head of Traffic Management and Head of Road Division. According to experts, in urban setting, greenery plays important role. So many trees and plants should be planted. There are many problems regarding aesthetic trend and building design. For this, guidelines can help in solving the problems. It is very necessary and important to develop design guidelines which will help this city to make “One city one identity”. Design guidelines exist but difficulties lies in implementation. So literacy and public awareness is important to maintain the applied design in the urban structure, form and composition. Additionally, public participation helps most to represent the identity of city. So involvement of the public is important.

7. Data Discussion and Analysis

Buildings and its appearance plays an important role in expressing street quality and the visual image of place. Result indicates that the area is a progressive area and occupies urban functions which have many scopes and opportunities. Since, an appropriate architectural design of the buildings and its components can significantly improve quality of the street. Eventually, the building height, building elements and facade materials are the factors that directly affect the urban commercial street. Yes, it is important to design the environment to satisfy requirements regarding safety, durability, but also, aesthetics.

7.1 Overall Visual Quality

Visual quality is a very important component of human existence, as it helps shape our perceptions, attitudes, and general views of life. This concept demonstrates the varying degrees of people's ideas and aesthetic admiration of various things, such as views, objects, landscape, etc.

From the data collection, it has been found that majority of buildings are of modern style, with glass, concrete, aluminum being the most common building material. This indicates the diversity of building materials and also in color, height, openings, entrances, etc. Lighting are mostly simple design in the entrances and in the balcony. As a commercial area, lighting has an important role instead, lighting elements are less. In case of landscape and planting, small movable planters are found in ground floor in some hotel buildings only. It indicates that there is lack of greenery in the building as well as shop fronts. Greenery which is the important feature in creating attractive scene is missing so it lacks beauty in the street and needs to be added. Similarly, majority of buildings are R.C.C structure with C.G.I truss roof above R.C.C roof. The truss roof is constructed above R.C.C roof to control direct heat radiation but this has dominated the original shape of building in the whole area. In terms of proportion, there are a few structures where the relationship between many facade components has solidified into a single visual relationship.

7.2 Major Problem Identification

Aesthetics and Architecture: The architecture has no particular style and follows the contemporary trend with lack of principles and sense of place. This indicates the low aesthetic expression of the place. There is not any special facade characteristic thus signifies no any identical street.

Facades and Frontage Zone: There are informal shops with no rules and regulations for facade design and displays. Large and colorful commercial advertisements on facade block the original shape of buildings resulting in the dazzling street landscape. Moreover, there is the lack of consistency in color of buildings.

Building Facade Components: Building components such as entrances, doors and windows are not uniformed. The advertisement boards are hanged on the guardrails causing the visual pollution and

dominate the building looks. Also, lack of greenery and lighting elements in building indicates the poor aesthetics.

Facade Configuration Elements: Some buildings have blank walls, this creates the closed impression and there is the lack of consistency in color techniques.

Urban Structure: Construction of building lacks principles and the use of buildings is haphazard. Old buildings need maintenance & some commercial buildings are highly deteriorated. Building skyline does not create visible pleasantness.

People's Perception: Majority of respondents are not satisfied with the existing conditions of the building frontage and they don't see much aesthetic quality such as greenery in buildings and transparency of buildings.

7.3 Triangular Analysis (Theories, Experts & Empirical Facts)

Empirical facts are one of the strong evidence of what actually the truth is. It helps to identify the real problem, analyze the problems and solve the problems. On the subject of architecture, buildings are the principle aspects in architecture. It should create a sense of place. But in case of NGO Road, buildings only stand as a built form. Similarly, frontage zone is one of the important factors that balance the aesthetic quality because it shapes the street. Conversely, the frontage zone of study area looks unhealthy and creates the dazzling street landscape. Theories and experts say that building facade is the expression of many aspects and should encourage various activities. In fact the result of study area indicates the discouragement and irritation due to unmanaged and haphazard building looks.

8. Conclusion

Study of aesthetic and the building appearance of a place determine the quality of urban environment. In a city, the character of an urban area can be inferred from an observer's first impression of the place. From the observation of NGO Road in Narayangarh, there is the diversity of building facade elements. The use of modern building materials such as brick, stone, aluminum, etc. reflects the modern aesthetics, while the rectangular forms, horizontal and vertical lines, shading devices in facade indicate the adaptation of site-specific design. This also highlights the aesthetic aspect of the region with contemporary development.

In the case of people's perception, the result shows majorities of respondents are not satisfied with the existing condition of the building fronts and its appearance thus, prefers an active, satisfied & pleasing environment. Their experience broadly explains the need of balance in aesthetic quality.

Conclusively, beauty lies in the eyes of viewer and if they feels pleasing, comfortable, safe, attractive, enjoyable and eye-relaxing view then it represents aesthetically pleasing environment. Therefore, study concludes that the issues of building design should be considered a main concern in urban design, so as to improve building aesthetic. Additionally, personal motivation also serves as a catalyst to pursue particular styles for façade inspiration. The perception of quality and the associated consciousness of "beauty" have evolved over time and will do so in the future. Therefore, it is important to take into account both social and personal values when designing.

9. Recommendation

It is essential to have a good understanding of the basic elements needed to achieve good aesthetic in urban commercial street. There should be proper planning of the building and its elements in urban areas so that; it would have less impact and adds more value in the environment. Each element on building should indicate aesthetic as well as functional value. For building vegetation is one of the major elements to be successful urban street. Different colored flowers and green leaves made the street more aesthetically pleasing than plain stereotypical ones. So, more plants should be added to make it visibly pleasant as well as it can provide psychological relaxation, streets alleviation, supporting physical activity and stimulating social unity. Similarly, buildings with more details and textures in the facades are interesting to view and a material such as metal, glass, and laminates added interest in facades. Addition of interesting façade treatment can enhance the beauty of street. Integrate art and architecture that focus on the identity of place and nation. Similarly, minimize the size of advertising board that dominates the entire building façade and add the lighting elements to create impressive and vibrant day and night view. Also, enhance ground floor and entrance with indoor-outdoor interaction. Besides, more research is needed in this field and buildings designed with guidelines should be emphasized more.

10. Further Study

Further research may specify whether similar results apply to urban commercial streets in other regions and cities. The findings of this study can be used to inform the preparation and design of guidelines for urban commercial streets, resulting in more attractive and economically successful streets that serve as attractive green spaces.

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