

# FACTORS THAT TRANSFORM THE BUILDING FACADES AND IMPACT ON THE PLACE-IDENTITY IN COMMERCIAL STREETS: CASE STUDY OF HOSPITAL ROAD IN JAFFNA

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## Abstract

*Built fabric is a critical component of a city, contributing to the process of defining its cultural program, spatial volumes and visual dimension. City identity and character – in terms of sense of cultural belonging and place-identity, could not be generated through two-dimensional thinking and planning alone; expression, articulation and resolution of built form is indeed significant to define a much-needed image and place-identity for a city. Invariably, the built form demonstrates the cultural, religious and technical identity, possibility – and even inadequacy – of any given region.*

*What built fabric express to the public, produces a perception of place-identity, purpose of this study is to mainly be focused on the root-cause which influences the visual image of the built fabric thereby the place identity. The process of analysis is based on a theoretical framework developed through a literature survey, and public feedback gathered through cognitive mapping. Though there are many studies based on the transformation of built fabric, there is a research gap on the aspects behind those transformations, which certainly needs to be explored further.*

*Relying on the Place-Identity Theory, the study shows the understanding of place-identity at present is predominantly shifted towards transformed city fabric, and survey shows that this has resulted in creating a dislike towards it. Results of the study can directly be fed back to the function of architectural design, in order to develop cities with better sense of urban experience and spread awareness to create a variety of expressive meanings to prevail the proliferation of identity-less cities through urban transformation.*

**Keywords:** Place-identity, built fabric, building facade, urban transformation..

## Introduction

Spaces and places have implications on who we are. At the same time people who occupy the space also shape it in the long run, and again that geographical setting that they have shaped in the first place also has implications. Thus, it is a cyclical phenomenon

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Throughout the history of mankind, people have been identified by the names of the places they come. This identification with their places has been a part of their self-identity e.g. Epiphanius of Salamis, Thales of Miletus, etc. Therefore, the important role that place plays in one's self-identity is evident. However, place is under continuous change in every aspect and so is its identity which changes accordingly. A wide range of factors can influence the identity of places (Abdel-Aziz, & Shuqair, (2014). Since these places shape the way people interact in the physical realm, the physical realm will also have a definite influence on their psychological realm as well.

Having said all that, the ground issue is that a visual inquiry, into the physical and social changes, is taking place in Sri Lankan commercial towns, where one can notice an emergence of modern building types that can be attributed to at least four key factors. These factors are listed below, based on their responses to specific technological, economic, cultural and programmatic concerns of building production,

- Imported materials & building systems usage- Technological
- Competitive morality of marketing & brands- Economical
- Imported design concepts & ideas- Cultural
- Introduction and expansion of new building programs- Programmatic

The identity of a place is altered due to many reasons. As a result of this alteration, the image of the urban fabric changes and the community has broad issues with these changes. In light of such issues, the research question can be broken down into specific parts:

- How the perception of the place has changed due to the changes in the urban fabric?
- What are the factors that influence the character of the facade design and on what scale?
- How those factors that influence the character of the facade design, change the place- identity indirectly?

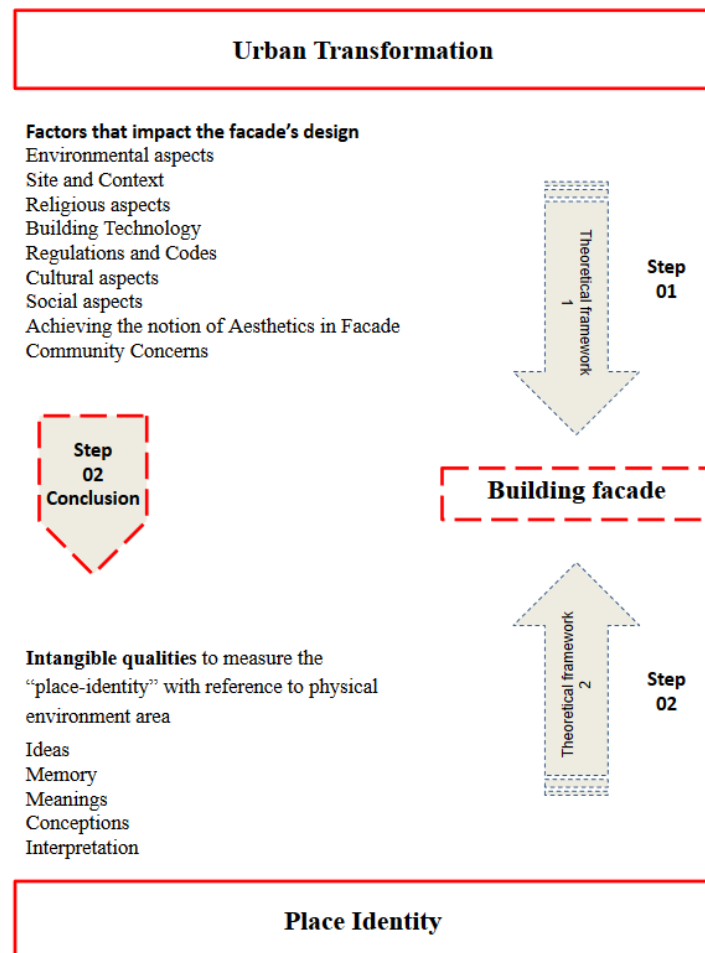


Figure 1: Research process; Source Author

The objective of this paper is to look upon the transformation process of place-identity in the commercial urban fabric, due to transformation in physical settings. It is also aimed to find out the factors behind this change in physical settings especially in the building facades for that matter, since it is one of the defining elements of identity on its own.

1. To observe how facades, transform into commercial representational needs.
2. To identify the implications on people's perception/ place identity due to these changes.
3. To understand the factors behind this change in facades and find out which are more dominant in our context and time.
4. To find out how the factors influencing place- identity

The commercial strip of Hospital road in Jaffna was taken as the study area by conducting a study on all the shops on the street.

### **Theoretical background**

The urban fabric consists of several extensive systems. Building facade is perhaps the most important entity in an urban fabric, which establishes a closely knit system. It is the object of a complex organization of structure and materiality; the form, volume, and frontage of building facades determine the physical mass of the urban morphology (Herzog, 2012). What we experience as the built fabric is a collective attachment of individual built objects (or front facades, to be specific), emphasized by physical building types and styles of architecture. Internal program and functional relationships, economic feasibility, socio-cultural aspects, environmental behaviour, etc. can also be disseminated through the built fabric into the experience of urbanity. Established imageries, appearances, perceptions particular to the city could also be generated through the individual and collective composition of the 'objects'

The facade, the first and most impactful linking between humans and built environment, the exterior, is not only a reflection of the architectural character of a region (Askari & Dola, 2009), but also an illustration of cultural, communal, geographical, political and financial situations . Building facade is a cohesive arrangement between the reasonableness of function and the surrealism of beauty, capturing commons mind and trigger emotional responses (Bechtel & Churchman, 2003).

Facades are designed to accommodate various physical and contextual expectations. On one hand, they exhibit cultural and technical skills in the region. On the other hand, they impart functional and economic possibilities to a given building program (Herzog, 2012). Thus, an urban building facade is a significant representation of a region, because it demonstrates regional limitations and possibilities in terms of cultural knowledge, physical use of materiality and contextual expectations. These expectations are based on:

- The inside program i.e. what is going on inside the building. Building programs with different programmatic objectives must communicate different meanings.
- Financial possibility of the brief: the economic capabilities of the project can be represented in the facade. For example, high-end building intervention, which uses skilled builders and a broader constructional budget, can reflect a different – if not better – technical standard than a building emanated through an informal production process.

- Personal tastes or perceptions of the owner: Different personal interests, cultural beliefs and socio-political worldviews of the clients or users of buildings can determine the visual composition of building facades.
- Cultural or social concepts of the region: the collective aspirations, knowledge base and physical requirements of a region can construct specific formal and informal policies in facade design.

### **The role of building facade as a building system and an urban object that connects with and reacts to the cityscape.**

The term building facade generally denotes the front external face of a building. It defines the appearance of a building, communicates with the streetscape and the public, and sets up the overall visual and semantic tone for the building. The external wall components are determined by the location and character of a construction (Herzog, 2004, p.09). The external wall -or envelop – consists of several building systems. Strong envelop provides proper protection, a barrier, and a resistance from the external environment and social threats.

Any building envelope has two fronts (or facades) – internal and external. Expression through external facade generally produces symbolical meanings and relationships over built fabric, while internal expressions deal with the building user, the building program and environmental responses, etc (Herzog, 2012). The outer facade expression needs to acknowledge the form and character of immediate contextual fabric, topography and social use, as it becomes a member among its built neighbors, it has to recognize, respond and contribute to the city image particular to the building's physical location..

Another critical aspect of facades is to serve as a means of visual impact to the users of urbanity (Rio, 2016).which is very central to the intellectual background of this study. Buildings are constructed for different requirements, and the idea of representation is born out as a byproduct of responding to different social, physical, economic, technical or environment needs.

Since ancient times, its role as visual communication medium has been a central function of building facades (e.g. cave paintings). According to Herzog (2004), the terms of communication of facade characteristics are formed by "*graphic features, textures, coloring, engraving and relief, combination of information conveyed by means of material, writing & pictures.*" The concept of communication through building facades has evolved over history and across the human civilization. With the advancement of human life, methods of representation too started to change and evolve. Later, this became more of strategic requirement in order to transcribe cultural and political life into permanent records. For instance, Sanchi art symbolizes the scenario of Lord Buddha's life.

Transformation of the means of facade representations from historical times to the present, delineates a strong change in material selection, architectural styles, and allure for signage and impetus for commercialism. Vibrant elaboration of facades through words, pictures, lighting etc. is becoming increasingly popular and often targets the night vision as much as the day-time usage (Manken, 2011). Their internal to external transformation is often highly contrasting, thus making facades to be more prominent than interior space. Obviously, a major effort is spent on articulating the external fabric, and such an attitude is subsequently shaping the way our cities are being built and used.



Figure 2: Urban transformation of facades in Jaffna. Source:Google

### **Factors that impact the facade's design**

Environmental, historical, cultural, social, technical, aesthetic, economic and political influences are the key factors behind any architectural thinking which are the real things behind the character formation of any urban fabric (Abdel-Aziz & Shuqair, 2014). Due to the vast influence of these factors, which affect the facade's form and characteristics, they need to be analysed thoroughly under extensive context of literature.

Vernacular knowledge of the place should be respected when designing the building since the facades, being the intermediate factor between the inside and the outside, play a huge role in controlling environmental conditions such as lighting, thermal conditions and in turn influence the energy efficiency of a building (Napier, 2015)

#### **1) Environmental aspects**

Openings are not merely for being visually appealing, but they also highlight the environmental considerations. And the way people use these openings is influenced by a range of intricate factors ranging from privacy, connectivity, functionality, visual continuity, bearing capacity of the walls, geographical concerns including weather, ventilation and humidity (Reda, 2013) (Wang & Hien, 2006).

For example, imperfectly designed facade openings could make the building too hot or too cold during the wrong times of the season/day, but if designed considering the environmental aspects, they can contribute positively to the indoor comfort throughout the year, which will make the building green and will contribute to the reduction of the operational cost.

#### **2) Site and context**

Building site size, configuration, topography, geotechnical characteristics, ecological features, accessibility to property, etc. are site forces which cannot be excluded from facade design. These forces play an important role in specifying locations of entrances, main facilities and the general layout of the building alongside facades (Abdel-Aziz & Shuqair, 2014).

#### **3) Religious aspects**

A very common aspect, which influences the facade designs, is the distinct elements of various religious ideas. Their influences on the general building's facade can be seen easily in the form of religious symbols and text, interpretation of "vastu" beliefs, height of the facades etc. For example, in the local context, it's common to have deities in the entrance facades.

#### **4) Building Technology**

Building technology in facade design is an important factor which influences the façade. Advancement in the design technicalities, construction techniques and use of new materials by designers and builders in terms of energy use and the aesthetics of buildings, evidently impact the façade design (Abdel-Aziz & Shuqair, 2014). For instance, in the local context, one chooses materials and technologies based on whichever is the best among the cheapest.

#### **5) Regulation and codes**

Regulations & codes are important aspects for an urban construction to create harmony between the inside and outside of a building. Regulation & codes usually includes light, ventilation requirements, zoning, facade regulations, use of materials, colours, heights, land use, sizes of architectural protrusions, size of advertisements on the façade and many others. As far as Sri Lanka is concerned, even though we have gazetted most of these considerations, they are not taken seriously other than in case of heritage sites. However, in the developed countries it is a serious policy level decision, which keeps the urban fabric elegant.

#### **6) Cultural aspects**

Cultural aspect is one of the strongest influences, which generates the architectural style of a particular region (Kenney, 1994) but this trend seems to have been weakened by globalization. Improvements in technologies, materials and global trends led to the fading of boundaries between regions driving people towards western solutions, due to which ultimately people lose their way of responding to their place specific needs in a particular style.

Furthermore, people also adopt the waves of changes in architectural trends into their culture during different periods. For an example, in the context of Jaffna in the 1930-50, natives who returned from Malaysia after their government service as lawyers, accountants, teachers, etc., brought back their fortunes and built big houses here adopting Malaysian timber craft on door patterns of the contemporary period, along with facade decorations.

#### **7) Social aspects**

Throughout time, new circumstances, needs and possibilities arise and call for further study and exploration, giving buildings new meanings and adding to their physical framework. Therefore, the social aspect of a city is also of the utmost importance (Abdel-Aziz & Shuqair, 2014). For example, privacy is a factor, which affects the size of the openings and materials.

If we look at the local context, having a veranda in the house to have chat with someone without inviting them inside the household, is an integral part of how we live. Same concept applies to "*Sangadapadal*" or decorated gates for entrance.

#### **8) Achieving the notion of Aesthetic in facade**

Achieving the notion of aesthetics in facade design is highly dependent on the understanding of aesthetics itself (Abdel-Aziz & Shuqair, 2014). Hence, the aesthetic sense is derived from nature, experience and exposure of the people of the place,

On the other hand, the interpretation of a modern architectural language in facades, the inspiration of traditional design elements and the nature of the environment, provide the definitions of harmony and beauty through a combination of two concepts viz. imitating

aesthetics in traditional architecture and the formal composition of an imported architecture evolved (Abdel-Aziz & Shuqair, 2014).

### **9) Community concerns**

This aspect is about how a facade should not contradict with the user group of that area. Clients and architects have to consider the cost factor when designing the facade, which needs to manifest the true value of the building proportionate to its cost taking into account, the user impact. Balconies and vertical gardens are examples of this factor.

## **Case study and analysis:**

### **Methodology**

The methodology to identify research questions, collect data and evaluate research findings followed a phase by phase approach.

**Phase 1:** Identification of research problem through background study and literature survey, to obtain an in-depth understanding of the factors which influence facades.

**Phase 2:** Establishment of theoretical frameworks to create link between the factors that influence facades and those that affect place-identity which are both directly related to building facades theoretically.

**Phase 3:** Collection of primary data on factors that influence facades through systematic and selective observation process along with detailed documentation and photographic study, in addition to semi-structured interview with the facade owners. Primary data on place-identity was collected through semi-structured interview and questionnaire survey of the locals.

**Phase 4:** Analysis of data to interpret the transformation of Place- identity by processing and categorizing survey answers, qualitatively through the framework developed via literature review.

Similarly case study area was segmented for the ease of analysis to infer the impact of various influencing factors on the facades. All the results have been comprehensively depicted through graphical representations. Both of these analyses were then correlated to establish a link between factors that affect Jaffna's commercial building facades and their implications on the place-identity for the local dwellers.

### **Selection of the street and determining the study area**

Since the study focuses on the transformation of building facades in commercial streets, Jaffna's commercial streets are the most suitable study areas as compared to any other place in Sri Lanka. This is because 30 years of civil war in the region froze all kinds of development in the region. Right after 2009, when the war ceased, the situation came back to neutral after a long time and a sudden wave of changes in the economic behaviour

of the residents, transformed the town quite rapidly. This is unique in a way that a town like Jaffna with great cultural significance and being the economical capital of a region faced such an unprecedented transformation. Thus, Jaffna town, under heavy transformation during 2009-2019, provides a suitable case study to observe the transformation of an area within a clear timeline.

Hospital Road was selected as the commercial street fabric to be analysed due to fact that it is the centre of the city nowadays, where all the new corporate buildings compete to have their facades.



Figure 6: Study area general map. Source: Google Earth

## Historical background

Historical background of this street is one of the lesser known things among many of its occupants. Although Hospital Street today is a vibrant street, this wasn't the case before the 1950s. Records shows that the street has been named after the eponymous Friend in Need Society Hospital, established by so-called king of Jaffna, Ackland Dyke and the Government Agent of Northern Province, with the assistance of Dr.Green in collaboration with the Friend-in-Need Society of Jaffna. The hospital was renamed the Jaffna Civil Hospital. At that point in time, the Jaffna hospital was just a small domestic hospital (Martyn, 2003).

At the same time, the old market of Jaffna, which has been burnt and rebuilt, was in the same place till the eighteen eighties. The demography of people who owned the businesses was spread throughout Jaffna, islands of Jaffna, *Valvettithurai* area, Tamil *Chettys* from Tamil Nadu who specialized in maritime trade and had businesses all over South Asia. It is to be noted that there were no shops or buildings until 1930 on the hospital road, other than the old market, the fish market where now the bus stand is a small hospital and a power station (Mayooranathan Ratnavelupillai, personal communication).

After independence, rapid expansion and development commenced in the 1950s in the Government sector of the Health Services of Jaffna due to which, Jaffna Civil Hospital became a General Hospital. In the 1960s, Jaffna General Hospital was a recognized centre for postgraduate training of doctors for the Final Examinations of the Royal Colleges of England. Consequently, after



the establishment of Jaffna Medical School, Jaffna Hospital elevated to the status of a Teaching Hospital. From 1960 onwards, shops started to evolve on the opposite side of the hospital, which were mainly pharmacies or tea shops and shops around the bus stand on the other side (Charles, 1980).

### Transformation of post-war urban fabric in Jaffna

Transformation of the urban fabric in terms of buildings in Jaffna is well observable due to the rapid growth in various sectors and an increase in inflow of money during 10 years of post-war period. We can see a trend among the financial institutions' building frontages, fighting to distract the public eye through vivid coloured "alcobond- cladding sheets" and big co-operates placing giant advertisement billboards at every noticeable location.

A visual comparison of the study area between 2002 and 2018 is given (Figure 7 and 8) which shows a clear transformation of the city form from small observable grid shops, greenery inside the town, empty land, trees in the middle of the streets into a dense commercial area with lesser greenery and empty lands.



Figure 7: Jaffna city map 2018. Source: Google Earth



Figure 8: Jaffna city map 2002. Source: Google Earth

Data was gathered from the case study by;

- I. Providing a questionnaire based discussion to the owners of the Businesses on the street
- II. Observation
- III. Photographic study

The questionnaire was primarily aimed on identifying the motivation behind the decision for the facades of their buildings. Their answers were categorized under the nine factors that influence building facades. To ensure ease and clarity of the study, the area was segmented into 9 segments as shown in Figure 9



Figure 9: Case study area segmented. Source: Google Earth

### Field study program

The study was initiated in March 2019 when the context was visited several times for preliminary observations and data gathering. After having done literature survey and other background studies, the selected street was documented periodically during April 2019 and discussions were conducted based on the questionnaires and literature survey.

### Analysis: Factors that influence the building façade

All the participants were shop owners or current occupants of the building. Analysis was carried out under the theoretical framework (Figure 1).

Overall analysis of the survey results shows that the notion of aesthetics was the most influential factor for facade design over any other factor (Figure 10). Achieving the notion of aesthetics was the most influential aspect. This could be attributed to the fact that a sudden wave of post war economic boom in the region led to a lot of co-operates coming into play in this relatively small commercial area of the city. Suddenly, financial institution with good reputation at that time became an ambassador of aesthetically designed facades, which motivated local traders to use the same strategies so as to compete in the market by bringing more people inside their building. This gave way to budget friendly ways of enhancing the building's facade using Alco-bond, glass and aluminium.

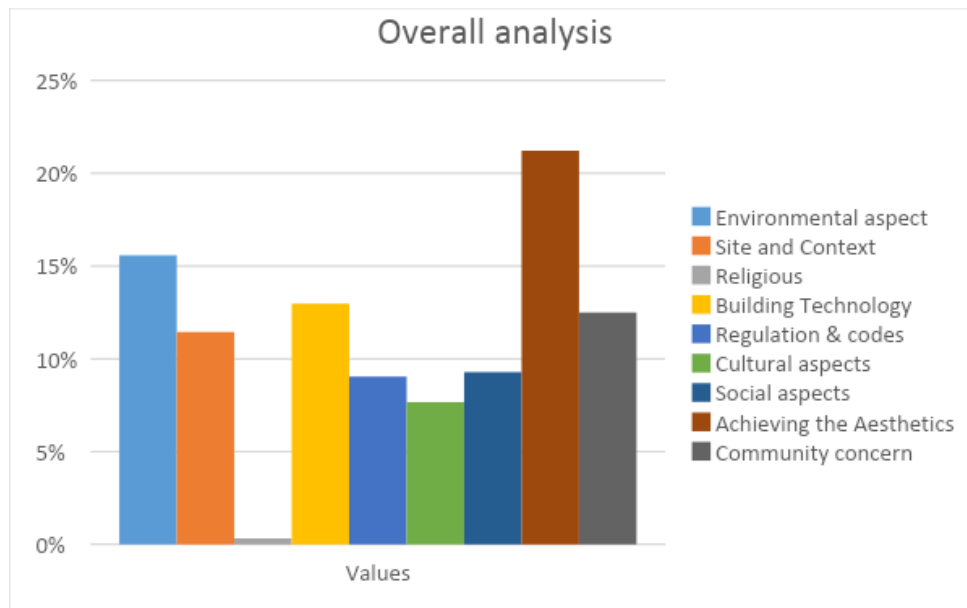


Figure 10: Overall analysis; Source: Author

Another significant observation was the diversity of the road on both sides. One can clearly notice mostly commercial buildings on one side and more service buildings on the other. Therefore, it became essential to compare them separately in order to gain results that are more substantial (Figure 11 a and b).

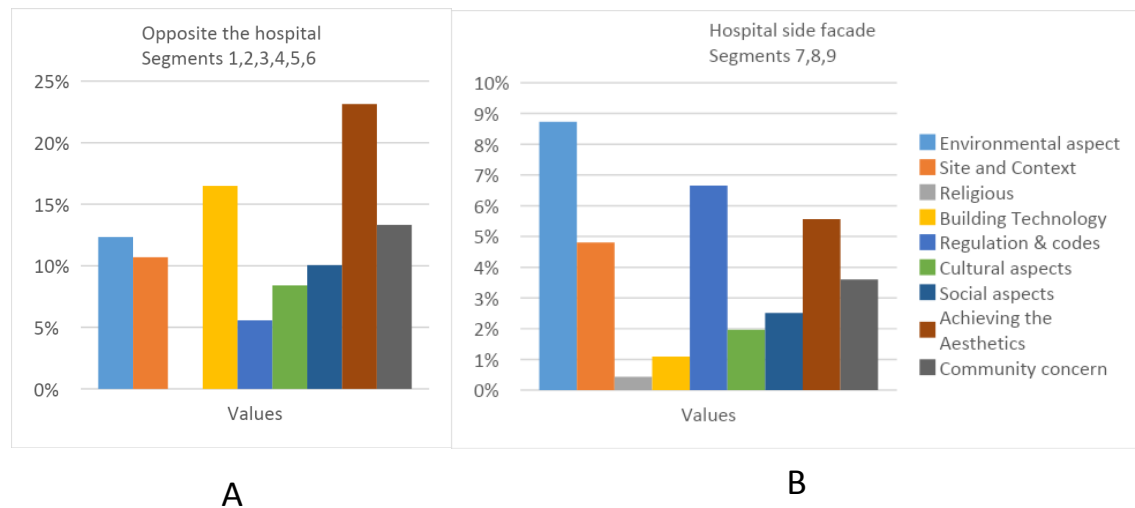


Figure 11: Facades in segments a) on the side opposite to the hospital b) on the hospital side; Source: Author

### Comparing the two roadside facades:

This comparison clearly shows the different factors, which dominate the facade styles on both sides. The buildings of segments 1, 2, 3, 4, 5, 6 falls into the category of commercial infrastructure, while those of 7, 8, 9, mostly belong to public service-based infrastructure. It can be clearly seen the segment 1, 2, 3, 4, 5 and 6 are mostly influenced by the factor of “achieving the notation of aesthetics” and by “Building technology” aspects, due to the commercial competitiveness of the street (Ex. Figure 12 and Figure 13) . On the other hand, “environmental aspects” govern segments

7, 8 and 9 (Ex. Figure 14 and Figure 15) since their infrastructure belongs to service-oriented buildings, which need to inevitably incorporate natural light and ventilation.



**Figure 12:** Urban fabric of Hospital road, Segment 2. Source: Author



**Figure 13:** Urban fabric of Hospital road, Segment 5. Source: Author



**Figure 14:** Urban fabric of Hospital road, Segment 7. Source: Author



**Figure 15:** Urban fabric of Hospital road, Segment 9. Source: Author

It is of utmost significance to note that a chaotic situation like this is inevitable when the local business owners make an attempt at all sorts of facades without any prior knowledge on the subject but only to compete in the market. Since they are not trained professionals, governing bodies should take initiatives through qualified professionals to organize and find the right kind of framework to construct facades. Moreover, permissions and violations should be legislated properly.

The fact that cultural aspects and social aspects hold hardly any importance is quite lamentable since cultural values have been considered as the highest values of the society, which carry the values from generation to the other. Therefore, these values need to be updated from time to time to match the contemporary expectations and needs of the people. Religious aspects were the least significant which is understandable given the highly commercial nature of the area. Even though it was highly common in the house facades of old days to use the statues of deities and other religious symbols, it is not common in the urbanized commercial practice of today.

### **Analysis: Place identity and the transformation of Building facades**

Based on the facts and findings of the case studies, transformation of place – identity in people's perception was evaluated through the elements that are indicators of the place-identity in the human perception. In the second part of the study, factors that affect the transformation were evaluated through a survey of the local dwellers.

These results have not been discussed in detail in this paper. Nonetheless, it can be concluded that the factors set by theoretical framework two (Figure 1) to measure the place-identity were evaluated to show that

- Place-Identity has been transformed by building facades.
- People’s memory is inclined to the old urban fabric, which shows their positive affiliation with the old city fabric.
- Their feelings, ideas and interpretations changed which in turn changed the place-identity.

**Conclusion:**

The formulated research problem set out to understand how the perception of the place has changed due to the changes in the urban fabric and what factors influence the character of the facade design and to what scale, within a selected vicinity. The objectives of this research were to identify how facades were transformed into commercial representational needs and its implications on people’s place-identity. It was also attempted to find out the dominant factor related to facade design in today’s context, and to understand how those factors influence place-identity.

Several theories on human cognition and place identity have been discussed in detail and a theoretical framework was constructed by defining elements, which construct the place-identity to help to evaluate the changes in the place-identity due to the transformation of building fabric with the help of a case study. As transformation of built fabric influences the people’s cognition of place-identity, when place-identity is transformed negatively, this can be addressed by identifying the factors which cause this transformation.

The first research axis helped to establish the notion of aesthetics as the dominant element that affects the facade designs and additionally a separate analysis on both sides of the road revealed stark differences on the dominant factors based on the differences in their functionality. The second research axis helped to find out the implications of the transformed city fabric on place-identity, which might be deemed as negative changes.

From the research, correlations between the factors that influence the facades and the elements of place-identity of the people can be understood as below,

Environmental aspects	People' cognition of interpretation and memory revealed that it has been influenced by environmental aspects of the buildings having open verandas, series of windows and door openings
Site and context	People' memory of hospital building’s facades partly influenced by site and context show a considerable association.
Religious aspects	Being a commercial strip, not much was found to be influenced by religious aspects but when people remember the old Jaffna fabric, their interpretation seems to be influenced by religious symbols in case of house facades.
Building technology	Use of modern materials and techniques affected people’s conception of the transformed city fabric.

Cultural aspects	Building facades provide cultural hints in their designs. In peoples' memories, the old facades are imprinted due to the way they reflected cultural significance through multiple elements.
Social aspects	Again not in the context of the selected study area, but in an extended discussion on other places, people remembered the idea of how "Thinnai" plinth had been the identity of facades at one point in time. Thus, it can be said that social aspects influenced the place-identity of that time.
Achieving the notation of aesthetics	25% of the people's discussions represent the influence of the notion of aesthetics in their ideas.

This study has successfully established the link between place-identity to the factors that influence the transformation of facades. Thus, it is justified to say that a proper understanding and organization of these factors in the construction of building facades would positively enhance the place-identity in case of people's perception.

Based on the limited time and available resources, the research was carried out within a limited framework. Following the tragic Easter attacks in the country, security restrictions made the fieldwork harder. Nevertheless, future studies can be carried out in different areas with diverse cultural backgrounds, such as more cultural and religious areas to see the impact of various factors on place- identity through time. Additionally a detailed study on the individual facades might also be interesting.

#### Limitations of the study:

The scope of this study is highly dependent on the local response which was at times challenging to acquire due to various reasons such as reluctance of the owner to participate, change of ownership and a general lack of awareness about the history and cultural context of the area. Moreover, accessing the study area at the given time became difficult due to the situation in the country following the Easter attacks.

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