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Impact of Built Environment Aesthetics on the Image of Kandy Historic City, Sri Lanka

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Abstract

Kandy city in Sri Lanka is a world-renowned tourist hotspot among locals and foreigners. At present, modernization and commercialization of the built environment have become a major threat to city image which destructs its historical value. This paper attempts to discuss the impact of built environment aesthetics on historic city image in Kandy. An online questionnaire survey was conducted to collect primary data using a purposive sample of fifty including some residents and tourists who frequently visited Kandy city along with the site observations. Descriptive analysis, content analysis, and photographic analysis were used as the methods of data analysis. The Findings of the study proves that regardless of all the heritage conservation measures taken, the city image has been distorted and there would be a possibility of losing the historical value of

the city with the rapid economic and population pressure. Lack of awareness among vendors for protection of historic city image, lack of coordination and regulations, outdated legal provisions and lack of transparency of compensating to the shop owners for their losses are identified as major issues of the built environment features of the city. Lack of management guidance has been identified which should be considered by relevant public authorities, real estate professionals, and regulators in the policy formulation process of future urban development.

Keywords: Built Environment Aesthetics, City Image, Modernization and Commercialization

Introduction

A built environment comprises homes, buildings, streets, open spaces, infrastructure, and all other man-made objects where we live, eat, work, travel, and play, etc., Cultural built environment is one of the most important assets in some cities which represents the historical layers of its built environment in places made of brick, plaster, wood, metal, and stone. The historic built environment includes cathedrals and cemeteries, factories and fences, museums and markets, etc. (Cultural Heritage, 2017) Thousands of heritage sites around the world obtained heritage designation by the United Nations Educational, Scientific & Cultural Organization (UNESCO) considering its values of archaeological, cultural and architectural, etc. Obtaining heritage designation is an extra-legal restraint for a city. This legal designation adds extra value to the city image. Every city element has its role in city image and Lynch, (1960) introduced the concept of *imageability* that defined as “the ability of a city to evoke a mental representation of it in the minds of those who experience a place”. This mental representation is called the *image of the city*. The historical significance of a city, place, or building evokes cultural memories and mental representation under several set values such as historic value, relationship with the people - visual qualities, aesthetic appearance, social value, scientific value, rarity, and other types of mental representation (Feilden, 1994).

Currently, the heritage-built environment of many cities is being affected due to the rapid conversion for economic growth and advancement of science and technology in the 21st-century world (Sodangi, Khamidi, & Idrus, 2013). Consequently, the demand for prominent lands has been increased in core areas of cities. This is a significant threat to the urban built heritage. On the other hand, the abandoned heritage building or the site in the middle of the city is a disadvantage for the city's image and its future development. Accordingly, the conservation of the historic urban environment is becoming one of the most universally urgent and challenging issues. Thus, the conservation and maintenance of cultural heritage building/site involve a heavy cost because there are a lot of old elements that require to be kept as it is. "How to conserve" is another issue that is associated with the conservation of cultural built heritage. Reusing an abandoned heritage building means dealing with partially conflicting goals of maximizing land value, minimizing remediation costs, preserving the building's characteristics for historical and aesthetic reasons, and fostering urban regeneration. Accordingly, conservation and preservation of the historic built environment is a challenging task.

In Sri Lanka, there are many cultural heritage buildings/sites located in highly urbanized areas, especially in Colombo, Kandy, and Galle. Presently, Kandy is considered as the second major city of Sri Lanka and evokes a very strong historic city image due to its inherent values of historic, relationship with the people - visual qualities, aesthetic appearance, social value, scientific value, and rarity, etc. However, rapid expansion and urban growth have made a huge pressure on the historic backdrop and peaceful environment of the city. The high demand for commercial and residential land uses has immensely increased land prices in the downtown area. Conversely, high traffic congestion and pollution due to the overcrowding of people have become major threats to the historic city image. Considering this background, this study attempts to discuss the impact of built environment aesthetics on the historic city image of Kandy.

Literature Review

Built Environment Aesthetics

The built environment comprises homes, buildings, streets, open spaces, infrastructure, and all other manmade objects where we live, eat, work, travel, and play, etc. (Sallis & Glanz, 2006). The aesthetics refer to the awareness of beauty in the arts and may imply extreme and intense feelings such as inspiration (Nasar, 1994; Rezafar & Turk, 2018). The term built environment aesthetic refers to how the built environment is known through the senses while it matters on the evaluations of those who regularly experience it. Although, it is subjective consideration and various approaches have been designed to evaluate the aesthetics of the built environment (Gjerde, 2011). Sadeghi et al., (2014) introduced two main elements for evaluating the built environment aesthetic namely visual-form and cognitive-semantic. Visual-form of elements comprehended the quality of the landscape and its factors and quality of urban buildings and their elements. Cognitive-conceptual elements comprised cognitive qualities of the social and behavioral environment viz., identity, perceptibility, coherent mental image, customizability, social and cultural environment, etc. Nasar, (1994) identified two types of aesthetic values called formal and symbolic aesthetics in the built environment. The formal values exhibited from shape, proportion, rhythm, scale, complexity, color, illumination, shadowing, and hierarchy delineated the physical characteristics of buildings. Symbolic aesthetics is expressed through the dimensions of the human experience of building exteriors that cannot be decided solely by physical attributes (Nasar, 1994). Also, in some studies, the environment aesthetic approaches are categorized into two fields: architectural values and urban aesthetics (Rezafar & Turk, 2018; King, 1997). Architectural aesthetics is more related to the physical traits of buildings and space around them and urban aesthetics comprises a much wider range of values and conditions such as economics, traffic, and pollution, etc. while the role on aesthetic perceptions (King, 1997). Accordingly, the concept of built environment aesthetics is complex and multifaceted that can be mainly evaluated by both physical and perceptual values.

The built environment has been changing with chronological and contextual dimensions. For instance, in the modern world building shapes, patterns,

sizes are transforming to acquire a competitive advantage in a world marked by globalization. Therefore, the impacts of the built environment differ as per several contextual performances of economic, environmental, social, cultural, historic, and political aspects of cities. Conversely, the aesthetic meaning of the built environment again changes with these systems. However, the assessment of the impacts of built environments aesthetics is quite limited in the literature. The Pehlivanoğlu (2011) investigated the impacts on built environment aesthetic on urban public spaces. Crippen (2016) and Madanipour (1996) investigated the impact of building aesthetics from the perspective of political aspects of urban design. Danaci (2014) evaluated the impacts of environment aesthetics on cultural landscape and Gjerde (2018) assessed the built environment aesthetic on urban streetscapes. Indeed, studies on assessment of impacts of built environment aesthetic on city image, especially, in historic city image are very rare in urban design research agenda.

Image of City

Every city element has its preface in the city image. City image is a sensual and spiritual remain of city life over people. In 1960, Kevin Lynch published his first book on *the image of the city* and introduced the concept of *imageability* that defined as the ability of a city to evoke a mental representation of it in the minds of those who experience a place. This mental representation is called the *image of the city* while describing the nature of the environmental image. Lynch, (1960) analyzed them under three major components such as identity, structure, and meaning. The concept of “identity” is defined as the identification of an object as per the noticeable characteristic of the entity. “Structure” means the spatial or pattern relation of object to the observer and to other objects that combined with five imageable elements of paths, landmarks, nodes, edges, and districts. “Meaning” must have some meaning for the observer whether partial or emotional that has symbolic content and associational connotations of the environment. These elements help to make the city visible and provide a means to communicate with groups. The imageability is [It is] that quality in a physical object which gives it a high probability of evoking a strong image in any given observer. It is shape, color, or

arrangement which facilitates the making of vivid identification, powerfully structures, and highly useful mental images of the environment. Perhaps, cities have a certain image similar to other objects such as historical, cultural, sacrality, commercial, and other specific variations. Amongst this study focuses on the historic city image.

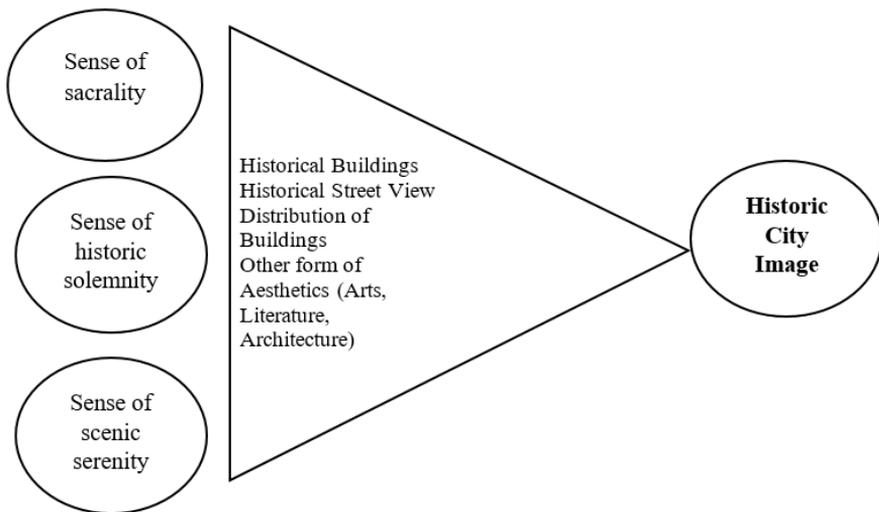
Historic City Image

The historic city is defined “as those active human settlements strongly conditioned by a physical structure originating in the past and recognizable as representing the evolution of its people” (Mutal, 2012). The historic cities not only exist the buildings, streets, squares, fountains, arches, sculptures of material and physical heritage. It comprises natural landscape and its residents, customs, jobs, economic and social relations, and their beliefs and urban rituals (Kherbouche & Djedid, 2018). However, the historic city image is more related to the social, cultural, and architectural expressions that are identified with the social and cultural life of a community. The historic cities are more inclined with the concepts of conservation, preservation, restoration, renovation, adaptive reuse, etc. due to the point on the protection of the historic value of the city image (Ettehad, Azeri, & Kari, 2014; Heim, 2020). Also, the newly built environment in historic cities has been changed across the adverse impacts of modernization and commercialization of cities. These actions effect on identity, structures, and meaning of the historic cities and consequentially on the city image.

In literature, assessment of the impacts of newly built environment aesthetic on historic city image is rare. In environmental cognition research, it has been frequently followed visual and spatial attributes of city image and ignoring the meaning or association attributes of the environment. In this manner, Rapoport, (1990) claimed that the meaning of city attributes is lack emphasized and the importance of exploring meanings embodied in mental representations of environments. The environmental meaning based on a nonverbal communication model which suggested three categories of environmental meanings, high-level meanings (sacred meanings, such as concepts of sacrality and cosmological systems), middle- level meanings (social meanings, such as power, wealth, status, group identity, and political

ideologies), and low-level meanings (instrumental meanings or basic factual understanding of the world) (Rapoport, 1990; Munasinghe , 2016). Later, Silva (2013) explored the relationship between environment meaning with the much-ignored meaning of sacred meaning and distinctive perceptual characteristics of the environment. His study more reflected the several sacred meanings that attributed to the historic city image and closeness to the different symbolic core dimensions, including the senses of sacrality, historicity, scenic serenity, and well-being. From the literature synthesis, it was identified the requirement of adequate knowledge and understanding about the factors that influence the built environment aesthetics on historic city image in which widely reviewing the problems of the buildings which tarnish the Kandy historic city image.

Figure 1. Conceptual Model.



Source: Author constructed, as per the studies done by Mapping the Image of City by Silva (2016) and Prilenska (2012)

Methodology

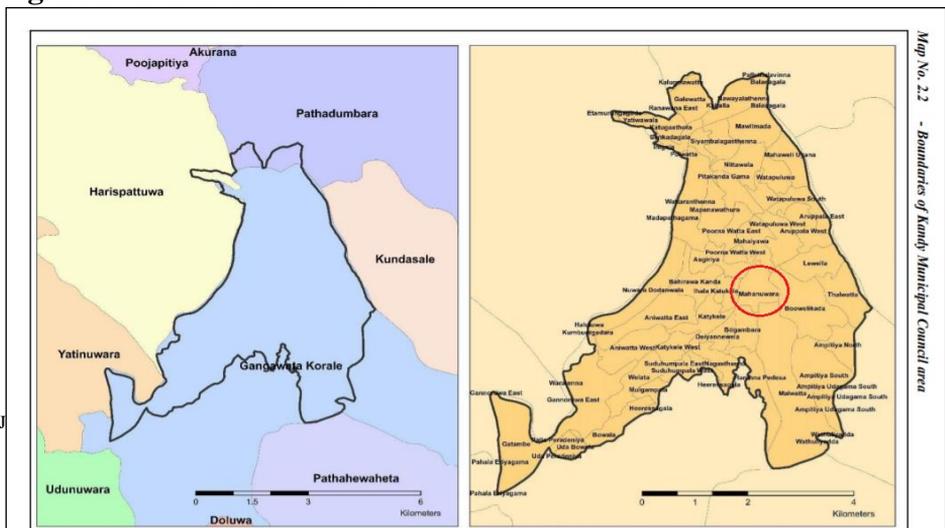
Study Area

Kandy gains its identity for heritage tourism within the world known as the “Sacred City of Kandy.” UNESCO has declared Kandy as a world Heritage

Site in 1988. As per the UNESCO definition cultural heritage is defined as monument, group of buildings or site of historical, aesthetic, archaeological, scientific, ethnological, or anthropological value and natural heritage, designating outstanding physical, biological, and geological features; habitats of threatened plants or animal species and areas of value on scientific or aesthetic grounds or from the point of view of conservation” (World Heritage Convention, 1972). The Kandy city center comprises several sacred, architectural, and attractive spots dated from the fifteenth century to the twentieth century. These attraction places include Mountains, Waterfalls, Forests, Botanical Gardens, Lakes and Ponds, Parks, Ambalam, Inscriptions, Towers, Museums, Tea Estates and Tea Factories, Industrial and Traditional Villages, Meditation Centers, Powerhouses, reservoirs, Educational and Agricultural Environment Parks.

Kandy is considered the second major city of Sri Lanka. Rapid city expansion and urban growth have caused pressures on the historic backdrop and the peaceful environment. The high demand for commercial and residential spaces has increased land prices immensely in the downtown area. Conversely, high traffic congestion and pollution due to overcrowding have become major threats to the historic city image. However, Kandy evokes a very strong image due to its core dimensions of the city viz., sacrality, historical solemnity, scenic serenity, and well-being. These inherent features are major reasons to select Kandy as the case study in this research.

Figure 2. Observation Area



Source: UDA Development Plan (2019-2030), UDA.

Data Collection and Analysis

The data was obtained from primary and secondary sources. An online questionnaire survey was designed to collect primary data from fifty who were mainly residents and tourists of both local and foreign. Field observation was conducted to identify the core dimensions of sacrality, historical solemnity, and scenic serenity in the city. The study more relied on secondary data collected through documentary reviews since it was the only possible option to identify background information, existing problems, and regulations of Kandy city. The gathered data were tabulated into excel format and descriptive and quantitative analysis were done using SPSS. Qualitative methods of content analysis and photographic analysis were also carried out.

Results and Discussion

City Image and Building Aesthetic

The study firstly identified the factors related to the build-environment aesthetics on Kandy's historic city image and subsequently ranked the factors as per the respondents' views as shown in table 01 below.

Table 1. Factors relating to build-environment aesthetics on Kandy's historic city image.

Facts	Factors affecting aesthetics characters of buildings	
	Level of agreement	Rank
Historical buildings in the city enhance the city image of the Kandy	98%	1

Historical street view reflects the city image of Kandy	94%	4
Distribution of buildings in the city improve the city image of the Kandy	90%	5
Other form of aesthetics (Arts, Literature, Architecture) contributes to the city image of the Kandy.	96%	2
Opens spaces; greenery influence the city image	95%	3
Built environment can influence the image/ identity of the city	98%	

Source: Compiled based on field survey 2021

As presented in table 01, it is obvious that respondents have validated the hypothesis across identified factors and their visual and cognitive qualities of the environment in Kandy city. According to the factor rankings historic buildings, other forms of aesthetics (Arts, Literature, and Architecture, etc.), and open space and greenery were reflected as the most significant factors. These factors are directly associated with the core dimensions of the city which assist to improve the city image. Therefore, it is broadly elaborated from three core dimensions of city image, viz., sense of sacrality, sense of historical solemnity, and sense of scenic serenity.

1. Sense of Sacrality

The Temple of the Tooth relic is the most memorable feature in the city, because of its high-level meaning according to Rapport, (1990) (derived from sacred functions and sacred ambiance), which is the most symbolic feature in the city. It is the most recognized place of worship as it resides the holiest left canine tooth relic of Lord Buddha. It has been declared as a World Heritage Site since 1988 by UNESCO.

The royal architect was able to reflect the sacred symbolism by enhancing the landscape within the palace and lake. It was the last capital of Sinhala reign who transformed the paddy field south of the palace into the present lake, in 1806. The area also contains four temples, Natha, Vishnu, Pattini, and Katharagama, devoted to gods and the two monasteries on behalf of the power of the Buddhist religion. The temple of Natha, right in front of the tooth relic temple, was built in the 14th century in the South Indian

Vijayanagar style of architecture and may be considered as the eldest living monument in the city.

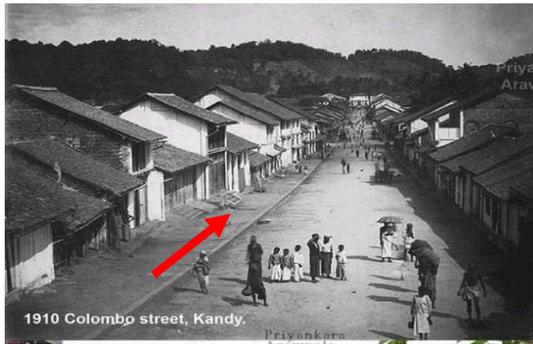
2. The Sense of Historic Solemnity

This represents the importance of history as the last capital of the Sinhalese monarchy. It is intimately related to the sense of **s**acrality. Most of the historical institutes, structures and traditions, and many memories still exist today. These historical elements can be divided into the elements in “pre-British” and “British” which reflect the historical significance.

- Pre-British Era: These are the main structures which present since the Sinhalese Kings reign era. It is mainly located close to the city center where the area around near the Temple of Tooth Relic.
- British Era: These are the structures which has adopted by the British in their reigning period. It consists of the historical street system, buildings in the commercial grid which consist of western roof styles, colors, and width of the buildings are somewhere features that reflect the historical significance of the city.

Figure 3. Elements of historic solemnity in Kandy City

Historical Street View



Colombo Street Captured from Priyankara Arawpola, Line is drawn by the Author (1910)



Kings street captured by Author (2020)

The grid street system is the most unique city planning aspect of Kandy city therefore boundaries and land plots are rectangular. Planning follows the principle of cross-placing which streets along the east-west and north-south axis. Streets were wide and straight and one should always go upwards to the royal palace. However, in present condition still follows the grid system and the royal quarter is still present with some obstruction by British interventions.

Buildings

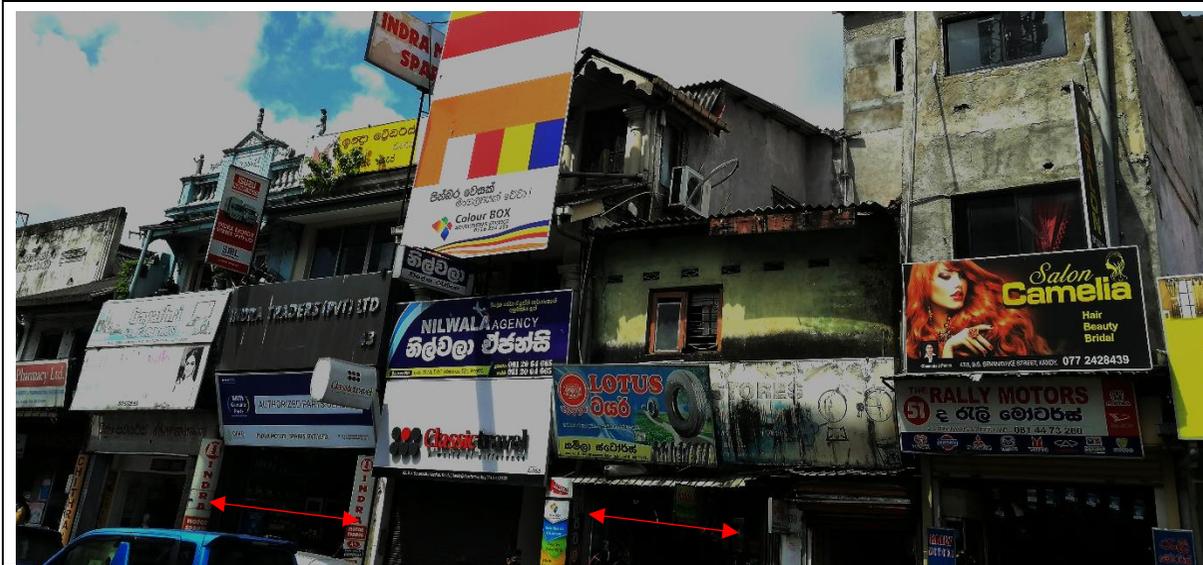


Giragama Walawwa captured by the Author
(2020)



Queens Hotel captured by the Author (2020)

Building Width



Building Frontage width (3m – 5m) has maintained at the same level to show the harmony of the streets. captured by the author (2020)

When considering the commercial grid of the city, use of buildings have been changed to commercial uses due to population pressure and increasing demand for economic activities. However, some historic features still can be seen in some streets. Eg: on Raja street, all the storefront are in the same width which varies from 3m-5m. Thus, some buildings are not compatible with the historic character of the city.

Building Roof Styles

One of the unique features of the buildings from other cities is the type of roof. Various building designs such as a dutch bungalow, bargeboards verandah type, gable roof type, classical style, and art deco type can be seen when walking along the streets.

		
<p style="text-align: center;">Western Classical Type</p>	<p style="text-align: center;">Gable Roof Type</p>	<p style="text-align: center;">Classical Style Façade Type</p>
<p>This style contains its unique feature in architectural aspects as collonade, balustrade, urban in its design. However, there are some irregularities in the proportion that can be seen.</p>	<p>Basic shophouses can be seen in this style, this has a roof from its top to end which directly frontage to the street. Covering materials are half-round clay tiles and small Calicut tiles.</p>	<p>This is similar to the gable style but the façade is designed in classical elements attached to the body which is separated from the main body. Motifs in the façade have many varieties.</p>
<p><i>Source: According to the study done by The JICA Team (2017) and Photos was Captured by the author (2020)</i></p>		

3. The sense of scenic serenity

This is derived mainly by the natural settings of the city surrounded by the natural landscape, hills, water streams, green covers, and a panoramic view of the city. The main connections of scenic serenity and built environment are; those buildings should be located in a way which does not depreciate or obstruct the scenic view of the city and enhance the scenic view of the city.

Table 2. Elements of scenic serenity in Kandy City

Elements of scenic serenity in Kandy City	Description
Top view from the City	The “Adam’s viewpoint” in the British era, can be accessed from the Raja Pihilla Mawatha. When seeing the city from the top can be observed the city buildings and grid street system which are unique to the city.
Bahirawa-Kanda Buddhist Statue	Bahirawa-Kanda Buddha statue is the latest landmark and vantage point of Kandy city. It can be seen from every corner of the city but to get a better view should reach into the statue and also it serves as a viewpoint to the city.
Green cover towards the lake around	The green cover of the lake round is the lungs of the city which keeps the city climate cool. Also due to its greenery, and eye-catching character tourist used to spend their evening on benches around the lake. However, more plants should grow to protect the green cover and provide more pleasantly environment to visitors in the city.
Landscaping	The Temple of Tooth relic and within the palace can be seen as a major place where visitors having a great interest in the landscaping. The picture was taken near the exit of the temple of the tooth relic which is the most popular place among youth to take photographs.

Reviewing the Problems Associated with Buildings

Table 3 presented the current problems related to the buildings which were identified from reviewing the literature and respondents’ perceptions regarding the prevailing condition of the city.

Table 3. Overall Perception of Problems Associated with the Buildings

No.	Problem	Perception regarding problems associated with the buildings
		(%) Agreed
1	Buildings block the view of other buildings	98%
2	Buildings are too big and too wide	62%
3	Buildings are too high	74%
4	The volumes of buildings are monotonously repetitive	88%
5	Buildings are disordered and irregular	84%
6	Buildings interfere with the natural environment	90%
7	The colors of buildings are too varied	82%
8	The materials of buildings lack variety	76%
9	Signboards on buildings are disordered	100%
10	Scattered buildings located close to pavements	50%
11	Lack of maintenance of buildings	90%

Source: Field Survey, 2021

The eleven problems are mainly reviewed and findings verified that most of the answers are similar between residents and visitors of the city. The problems of building block view, disordered and irregular, interfere with the natural environment, the color of buildings, materials, signboards, and maintenance are mainly identified problems related to the buildings in Kandy city. Amongst some of the main problems are descriptively discussed.

- Buildings block the view of the others

Many scattered buildings have an obstructed view from other buildings in Kandy City. For instance, when traveling along the D.S. Senanayake Street, some new constructions obstructed the view of the others. The maximum height is given by the UDA is 12m which is the height similar to the Temple of the Tooth Relic Kandy. It was one of the identified problems related to the buildings in Kandy Historic City.

- Buildings are disordered and irregular.

Due to high land values in the commercial grid zone, some listed conserved buildings, which are small in scale, have been completely demolished or altered to construct buildings with more height and large. However, it is reasonable to do such modification by owners. Therefore, regulations have been imposed to rehabilitate the front portion while conservation plans should be developed and approved by the authority. Usually, their frontage width is 3-5 m and these buildings are often part of large buildings, particularly additions to the back part shall consider as an entire building to maintain the integrity. However, during the inspection, it was identified that these conserved buildings are subdivided, and having several renovated units' where their integrity was lost. Therefore, the relevant authority should consider to maintain the integrity of the cityscape.

- Buildings interfere with the natural environment

This can be analyzed from the distant view of the city. The following photo ~~is~~ was taken in the 19th century which indicates the clear difference between the photos taken in 2020 (refer figure 4). In the old photo, it is observed some greenery near the temple of tooth relic and buildings were on small scale and lined up with streets. Less bulky buildings are also noticeable with pitched roofs covered with clay tiles.

Figure 4. Top view of the cityscape

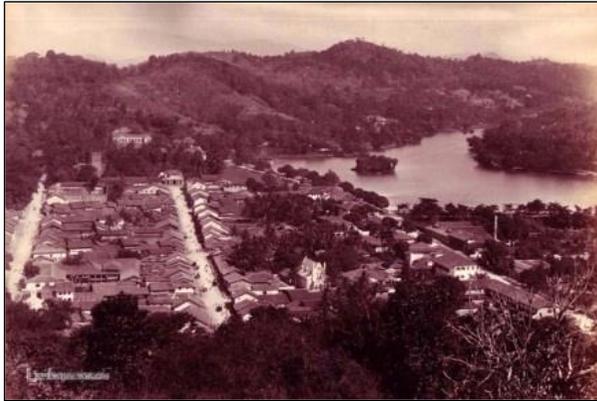


Photo taken in 1900s



Photo taken in 2020

Source: left side photo was taken from Lankapura, Historic Images of Sri Lanka <http://lankapura.com/>, and other photo was taken from No fixed address, <https://nofixedaddress.in/keeping-watch-over-the-people-of-kandy>.

Nevertheless, it is reasonable that the city has been grown in size due to population and economic pressure. City authority should consider the economic advancement of the city when formulating regulations while preserving the historical value of the city. For instance, city authorities can relax the regulations relating to modification and extension of the buildings, building height and provide a measures to protect the green cover by restricting developments in the particular zone.

- The colors of the buildings are too varied

During the observations, it has been notified that in several cases where the colors of the facades are quite vivid and do not match the ambiance of the historic neighborhood. Due to the ownership subdivision, one building could consist of several different colors which will lead to no harmony and inconsistency with a historical image. Therefore, some kind of coordination among tenants or owners is necessary to have unique façade colors in the future to safeguard the city image.

- Materials of building lack variety

Most of the buildings in Kandy city that have been constructed in colonial times are made of bricks. Thus, there are several buildings whose facades are covered by aluminum or other metal siding materials and the view of the façade is blocked.

- Signboards on buildings are disordered

Through the observations, it can be notified that there is an invasion of modern installed, large size signage which is visually unseen and the remains of older signs which seems to be more compatible with the old buildings which are still existed. Old signs are more harmonious with the building façade. Furthermore, excessive use of space by vehicles with high traffic congestion and lack of open spaces are identified as main problems from the respondents' views.

Conclusion

The prime aim of the study was to discuss the impact of built environment aesthetics on historic city image. Kandy was selected for the study by its variedness and historic value while comparing to other local cities. Initially, five key factors were identified that were related to building environment aesthetics in Kandy's historic city image. Afterward, it was broadly elaborated from three core dimensions of city image, viz., sense of sacrality, sense of historical solemnity, and sense of scenic serenity.

Rapid urbanization, population pressure, and competitive economic activities directly impacted on culture, society, cohesiveness, and spirit of the city. Therefore, this study has attempted to raise awareness of the Kandy city image and how the built environment could contribute to preserve the city image and protect the identity of the city. As the key findings, major problems of the built environment feature of the city have been addressed. Lack of awareness on the historical importance of the city among vendors, lack of coordination and regulation of public authorities, outdated rules, lack of transparency of compensating to the shop owners for their losses are the major causes for those problems, and finally, management guidance has been suggested which should be considered by relevant public authorities, real estate professionals and the public in the policy formulation process of future urban development.

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