

Transformation of Shop Houses in Suburban Towns in Sri Lanka: The Case of Hingula

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Abstract

Vernacular towns in Sri Lanka reveal the specific characters, functions, and activities as well as socio-cultural disposition of natives who are living there. From early human settlements to the contemporary ones, it represents their living organization. A cluster of functions and a cluster of human settlements create a town, a city or a mega city. An urban environment consists of many agglomerations of buildings, services, different kinds of people and activities and physical elements such as bridges, roadways etc. Core functions of a city are the production of commodities, selling goods, education and occupation. Those functions and physical appearance give a distinctive character to the urban environment. When socio-economic aspects change according to the peoples needs, they influence the urban environment.

This paper discusses the character of Sri Lankan suburban towns through a mapping of the transformation of shop houses at Hingula. The study establishes the key factors of specific characters of suburban townships and the main factors contributing to their transformations. The case of Hingula town which is a linear township located along Colombo Kandy main road is presented.

Persistent observations are used to identify the specific character of Hingula. Key character contributing aspects are studied by using survey maps, land use maps and photographic survey as the main data collection tools. Unstructured interviews are used to clarify socio-economic aspects and its relationship to the⁶⁷ built form. The study discusses five key contributing factors that generate built form transformations; spatial layout, form, function, technology and materials. It examines how these physical aspects conflict with the socio economic factors such as regional development, industrial development and urban migration. Finally, the significant impacts on the character of the fabric of the town are discussed comparing them with past and contemporary mappings.

Keywords: socio-economic transformation, shop houses, suburban towns, built form

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Introduction

As a developing country, the process of urbanization is an effective factor for the economic development of Sri Lanka. Urbanization causes the changes in traditional towns, altering their physical characteristics. People and their needs change according to the social and economic developments, while built form and its character changes according to the needs and requirements of the people.

An important fact in this regard is the suburban townships which are being less recognized in the current policy radars and there is a clear gap in knowledge about the aspects related to the characteristics of the traditional suburban townships. Therefore it is important to study how local people's design interventions and functional changes respond to their socio-economic requirements, and how architecture becomes meaningful to the people.

This study will primarily focus on how people's design interventions and functional changes shaped with their built form and how they have reorganized their built form patterns conforming to their contemporary needs and socio-economic circumstances. It will analyze how the character of the buildings in traditional townships is changed according to the socio-economic factors and how socio-economic aspects affect the mutation of urban built fabric. This will be discussed by studying and mapping of shop houses in a chosen township in Sri Lanka.

Suburban townships in Sri Lanka

'Gama' (or 'Village') which is the primary social unit in traditional Sri Lanka was expanded as towns which were called 'Nigama' and 'Pura'. Primarily the origin of towns began near the ports. One of the greatest examples for this is 'Mahathita' (Ellawala, 1962:106) while other towns came into being as religious polis.

The development of a road network system during the Colonial period contributed to the emergence of small townships in Sri Lanka. Colombo - Kandy road was developed as a commercial route, connecting Kandy, the main cultivation land, and Colombo, the export hub. This had been a key factor for people to locate their occupations and commercial activity centers along the roads. Some of the townships underwent rapid developments due to other supporting factors such as religious, cultural, or service significance and accessibility situations within the area.



Fig. 1: Mercantile activities in Ceylon
Source: www.Lankapura.lk



Fig. 2: Muslim traders in Ceylon
Source: www.Lankapura.lk

Concept of shop house

The urban development process shows that the natives have built their residences and trade centers conjointly. This resulted in a house with a shop. Shop house is one of the historic vernacular architectural building types. The shop house is the most important as an urban built form concept of living and together. Traditionally, the concept of shop houses has been introduced by the Chinese. Mostly the shop houses were formed as two storey row houses or single storey row houses. The Ground floor was used for commercial activities while the upper floor was used for living purposes (Anggraini, 2012, p.558).

The main purpose and conceptual idea of the shop houses is the unique functional aspect as well as the form of the building while materials and technology emphasizing its uniqueness (UDA, 2011). During the early periods, most of the towns of Sri Lanka developed with distinctive characters as a result of the existence of shop houses. They were well known in the towns.



Fig. 3: Denipitiya Town, Matara
Source: Author



Fig. 4: Old shop houses, Denipitiya Town
Source: Author

The most common characteristics of a shop house are the pitched roof laid with roofing tiles and covered with a timber fascia. Structurally, they have used bricks or rubble columns and beams, which are wrapped with the timber strips as walls. Partition walls were brick made. The main element was the upper floor made of a timber structural floor system. French door windows were also constructed in timber. The upper floor facade consists of full height door windows. Internal staircases were built with timber too.

In Sri Lanka, Shop houses can be predominantly seen in the districts such as 'Kandy', 'Matara' and 'Gampaha' which were important for the Colonial plantation industry. This suggests that the shop houses may reflect the socio-economic relationships of the people and the urban form of the town.

Socio- economic transformation and township character

Urbanization is a development of industrial, technological or economic and social development. Koperdekar (1986) and Jones (1966) claim that 'immigration' is one of the socio- economic developments which generates the urbanization. It is argued that rapid urbanization changes the city character. In fact, economic development creates the impact of the character of the cities (Sirisrisak, 2009, p.107). Traditional buildings receive new appearances and this changes the urban fabric. Many scholars have pointed out that the most reasonable factor that changes the traditional character of the cities is socio economic transformation.

Regional development is defined as a development of a particular area or a country. Regional development evolves the imbalance of spatial structure of the place (Uduporuwa, 1970) and towns and cities expand according to the contemporary needs of the people. According to Fyfe, (1988), the industrial process brings many changes to cities such as technological and material changes of the buildings while supporting to change and develop the infrastructure and large scale developments and urban growth (Jones, 1966).

Industrial revolution introduced many other values to socio- economic aspects. But, according to this socio-economic transformation, there had been a rapid change of the old traditional buildings and their forms, materials, construction methods and building technologies. For example, the monotonous residential areas of Chicago have been demolished for some factories and warehouses (Jones, 1966). For various purposes people move from country to country or from region to region. Migration can be taken as a socio-economic need and it affects the physical characteristics and structure of urban spaces (Dewi, 2012).

On the other hand, specific culture or tradition of a country could be influenced by immigration or migration. For instance, Chinese shop houses had been popular in Java, as a result of Chinese immigration to Java (Dewi, 2012) though people of Java didn't have a tradition of shop houses before Chinese immigration. Tradition is practiced by people and the buildings and their elements such as color, material, form, and technology reflects their own traditions (Ozo, 2009). When they move or migrate from place to place, they take their traditions and habits with them. In conclusion, it is argued that the key factors which contribute to the socio economic transformation of townships are regional development, industrial development and urban migration.

Built Form Transformation and township character

Built form is generated by the spatial layout, form, functions and technology. In early settlements, spatial layout reflected the tradition, lifestyle, and activities of people (Mumford, 1961). According to Jones (1966), the main reason for those expansions of the city is often the high population densities. When towns or cities develop, they develop as a regional development which is reflected by spatial layout of the city or town. Bentley (1999) points out that in living environments the most important aspect is the built form, as it is always connected with the human needs and aspirations. From structures to materials, built forms show the nature of the people and their activities. Furthermore, Bentley (1999:10) describes that, "form follows function – surely the best known slogan in modern culture, as the American architect Louis Sullivan put it many years ago, was not simply a matter of form experiencing function; the vital idea was that the function creates and organizes its form". The physical character of the built form reflects a specific character of the culture and historical value (Ozo, 2009). Also the town or city has been formed by its specific function. The centers of cities are already characterized by specialization of functions (Jones, 1966).

As seen above, many believe that the built form is generated by its specific function or the cluster of functions. When functions are changed, people change their built forms, according to the function. One of the great examples is the '*Tsumago*' post town. A town has been built for the purpose of "collection of inns, restaurants and shops to the Nakasendo's travelers" (Siegenthaler, 2003). According to those functions, they have created shop houses as their town fabric. Socio- economic developments change the characters of the urban fabric and some traditional small towns have been destroyed as a result of contemporary road developments (Sharifi and Murayama, 2013).

Technology is the main factor to generate the built form. Bentley (1999), points out that the "built form is determined by technology". Technology is the new technique of creating the built form. Furthermore he says that large scale industrial developments create new forms to the urban fabric.

A city or a town always shows specific character itself. It is not only the visual quality but also it enhances the historical and cultural value and the identity of the place (Ozo, 1999). Built environment is more specific depending on time or generation, because each period has its own socio-cultural organization. Bentley argues that the Built form is generated by the physical characteristics of building materials (Bentley, 1999) and urban fabric is dressed by spatial layout, form, function, technology, and material as well as socio- economic relationship of the relevant people. This reveals that the key factors which contribute to generate the transformation of built form are;

- 1) Spatial layout
- 2) Form
- 3) Function
- 4) Technology
- 5) Materials

Hingula Suburban Township

a) Historical development

Hingula is a traditional township located in Mawanella, along Kandy to Colombo highway in Sri Lanka. The importance of Hingula Town derives itself from the '*Aluthnuwara Dadimunda Dewalaya*' which is a famous temple in the region; the temple of goddess *Paththini*.

Historically, this '*Dewalaya*' has been visited frequently by people from all over the country. People have relaxed at this place where there is a stream named '*Ma-Oya*' (or '*Hingula oya*') which is running beside the town, before performing their religious activities at the temple. Hence, Hingula had been a preparing place for people coming to the temple as well as a resting place for other travelers. As a result, some shops sprang up to sell goods related to activities of '*Dewalaya*', such as flowers, fruits, other offerings, etc. and other necessities of the travelers. When the township further developed during the early periods, their key trade items were spices. This town has a significant population of a specific caste group of Muslims, called '*Hetti*' who were mainly salesmen. During the later periods, spice trading, selling clothes, and groceries took place and even more than hundred years ago, '*Hingula*' was one of the well-established towns with a number of shop houses. All the facilities were available in the town for people's needs and shop houses were the work place as well as the home for salesmen.

b) Study Methodology

Persistent Observation method was used to identify the specific character of Hingula sub-urban township as a historical town. Spatial layout, form, functions, materials and technology are mainly discussed as key factors which contribute to generate a built form identity. These aspects were studied by using survey maps, land use maps and photographic survey as the main data collection tools. Sections of building units were studied to identify the transformation of forms. 15 units out of 36 total old buildings were selected to identify the common character of the old forms. Few of new buildings were selected to identify the common character of the new forms. An elevation study is done to understand the material and technological changes, and two layers

of built fabric were identified by the elevation study. Unstructured interviews were used to clarify socio-economic transformations and their relationship to the built form transformation.

Study, Analysis and Results

Urban environments change according to regional developments. An urban growth can be seen when towns are developed with socio-economic transformation. That could be shown in a different way through the selected case study, for the reason that, urban migration, regional development and industrial development support urban growth.

Even though a considerable variation of the regional development of Hingula Suburban Township can be seen much development impacts of the town cannot be observed. When comparing the traditional and the contemporary built forms, considerable variations in space segregation could be identified. Traditional old type shop houses had been built with front verandahs for pedestrians next to the shop, whereas contemporary shops do not have such verandahs. The verandah spaces have been separated with a wall or have been used as private spaces.

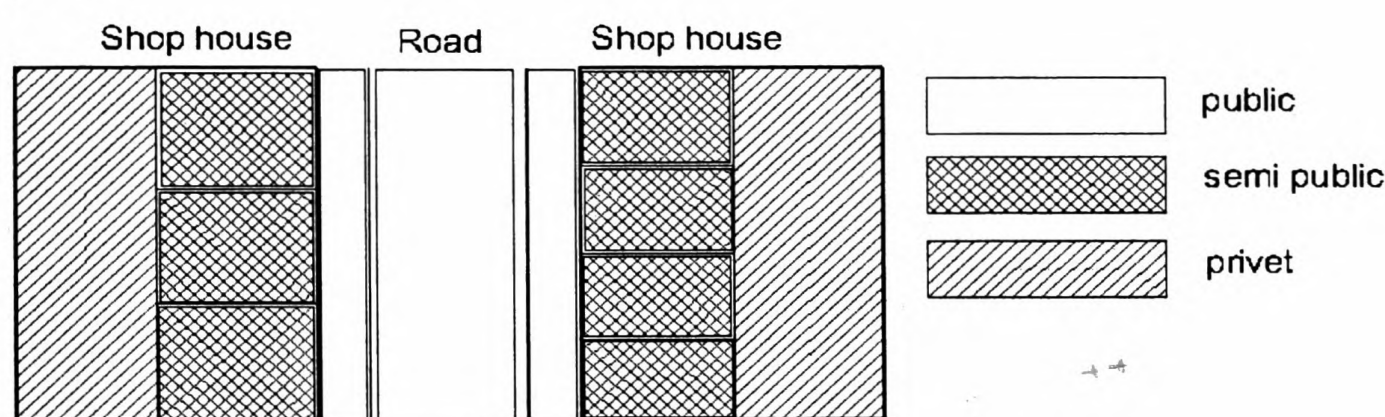


Fig. 5: Space segregation in the past, shop houses of Hingula
 Source: Author

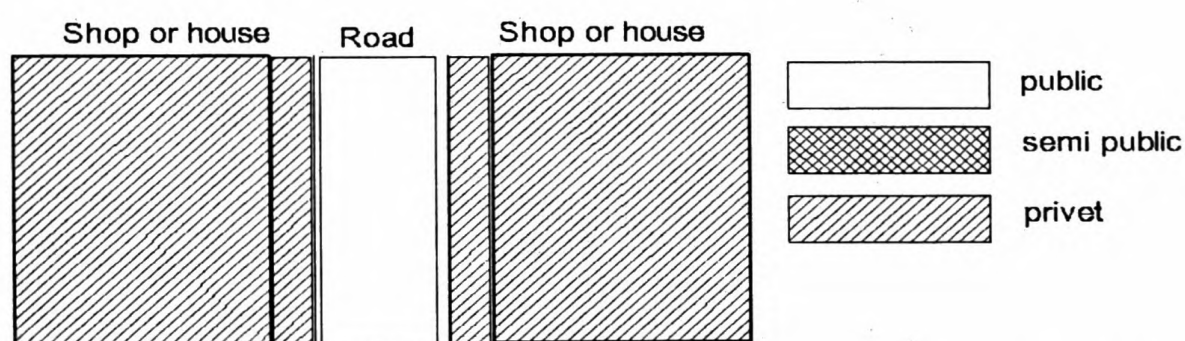


Fig. 6: Space segregation in the present, shop houses of Hingula
 Source: Author

In the past, the shop houses had greater area of public spaces more than private spaces. In the contemporary situation, private spaces are more than public spaces. When the land value is increased economically, people have separated their space arrangements according to present needs. Thus at the end, traditional town character of Hingula has been greatly destroyed due to such socio-economic requirements.

Hingula Town shows that, as a result of socio-economic factors people have shaped or re-built their built forms. When the socio-economic aspects are developed, most of the suburban townships decline and main towns emerge. Regional development is a good mechanism to develop the towns or cities. However in such a context, small historical towns are developed with the contemporary socio-economic factors creating a new character for the town.

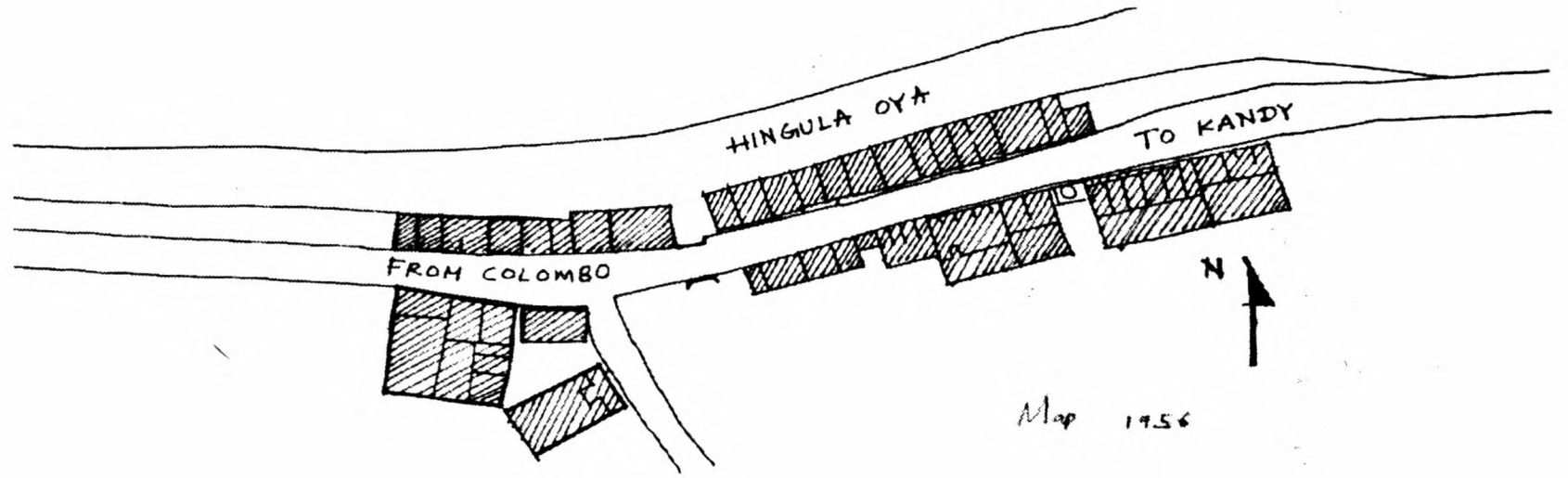


Fig. 7: Survey map, 1955
 Source: Survey Department of Sri Lanka

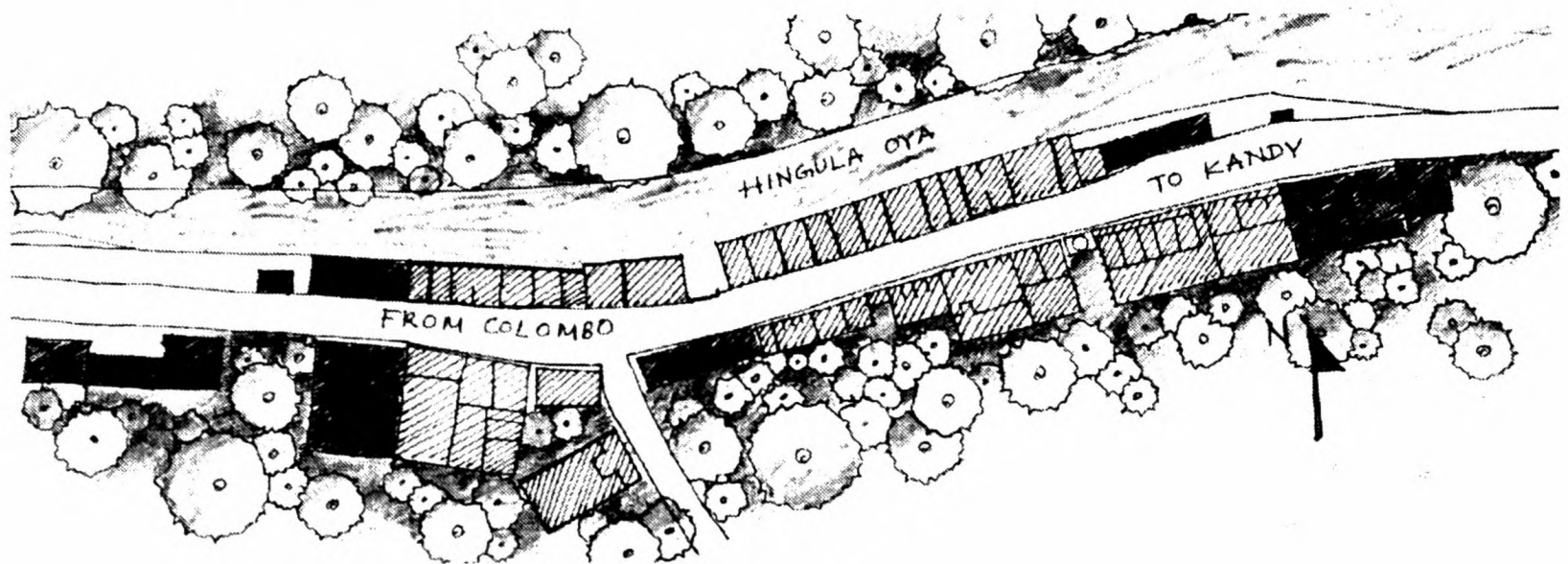


Fig. 8: Map of growth of the buildings, 2013
 Source: Author

Table 1: Building density of Hingula town

| | |
|--------|------------------------------|
| 1955 | 37 separate units |
| 2013 | 54 separate units |
| growth | 17 separate additional units |

Table 2: Growth of the buildings in the present situation

| | 1955 | 2013 |
|-------------|------|------|
| Commercial | 31 | 24 |
| Residential | 2 | 12 |
| Public | 0 | 2 |
| religious | 1 | 2 |
| No use | 0 | 13 |

Hingula town functioned well with trading activities in the past. It is not efficiently functioning as a town today. For example, most of the old buildings are neither used as a shop nor a residence. This is because most people go to the neighboring towns such as Kegalle, or Mawanella to fulfill their needs or for occupational reasons. The Table 2 shows 13 unused old buildings resulting from people migrating to Mawanella for their occupations. People migrate to Hingula only because it has a good climate and hence for residential purposes. Most recent residents from the countryside and have built new structures after demolishing shop houses.

Hingula also has natural geographical limits for built form developments. Current land use maps show that there are many unused shop houses at Hingula oya side. The 'oya' or the stream is becoming an obstacle to live during rainy periods due to floods, although this had been the same for the people in the past. The construction of rubble retaining walls along the stream was a response to such natural disasters by the early occupants.

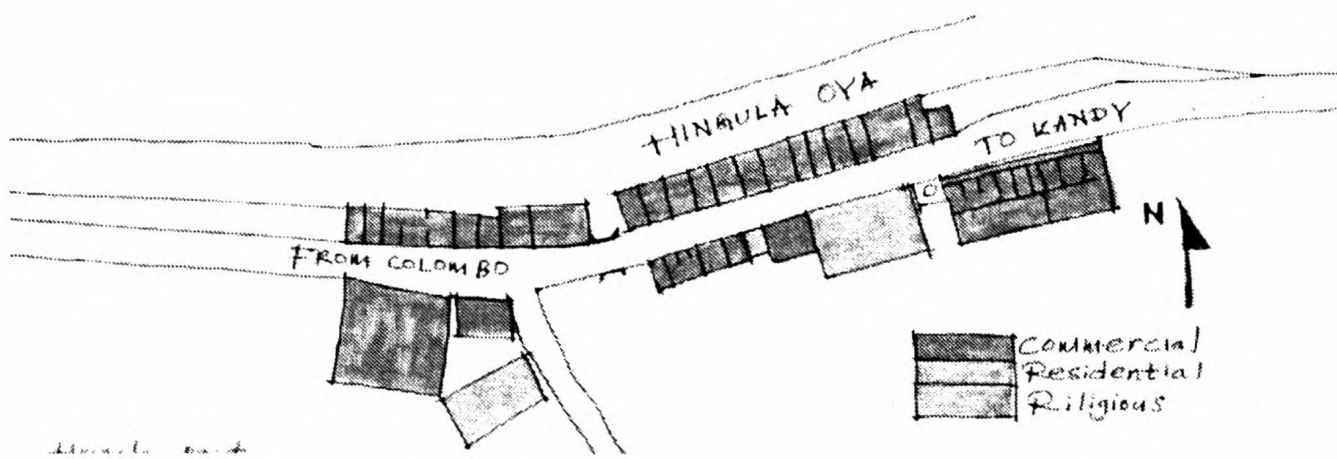


Fig. 9: Land use map, Hingula (Past)
Source: Survey Department of Sri Lanka

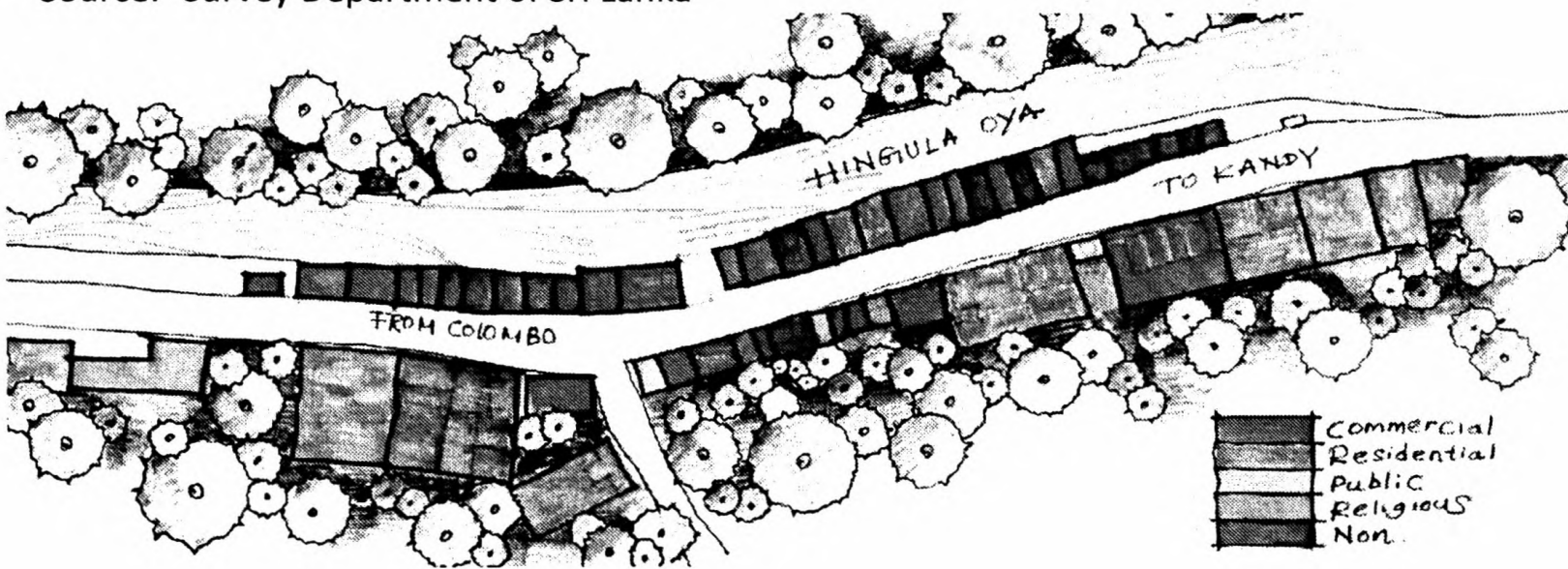


Fig. 10: Land use map of Hingula, (present)
Source: Author

Hingula is a clear example for the effect of urban migration on the character of a town. There, most of the traditional building facades have been demolished or modified by the owners who are new comers or migrants. They have already changed the buildings in terms of spatial and physical arrangements according to the contemporary needs. As known, industrial development is a contemporary socio- economic aspect. People tend to adopt new materials, technologies, economical methods, and invent their own variations. The interviews with the owners confirm that easy construction methods, more economical materials, and common and popular types were the reasons for the contemporary changes. Form can be modified according to the materials or technological variations. Interviews were helpful in identifying the ideas behind the changing of forms. Most responses referred to concrete, glass, roofing sheets which are mostly

available materials, common construction methods and those materials more economical than timber.

Table 3: Interview 1, common outcome

| Component | Reason | Frequency |
|---------------------|---------------------|--------------|
| Single pitched roof | 1.Easy construction | 9 out of 20 |
| | 2.More economical | 11 out of 20 |
| Additional fence | 1.For protection | 2 out of 05 |
| | 2.Get more volume | 3 out of 05 |
| Roof for residence | 1.Common type | 2out of 06 |
| | 2.More economical | 4 out of 06 |

Old characters of the built forms

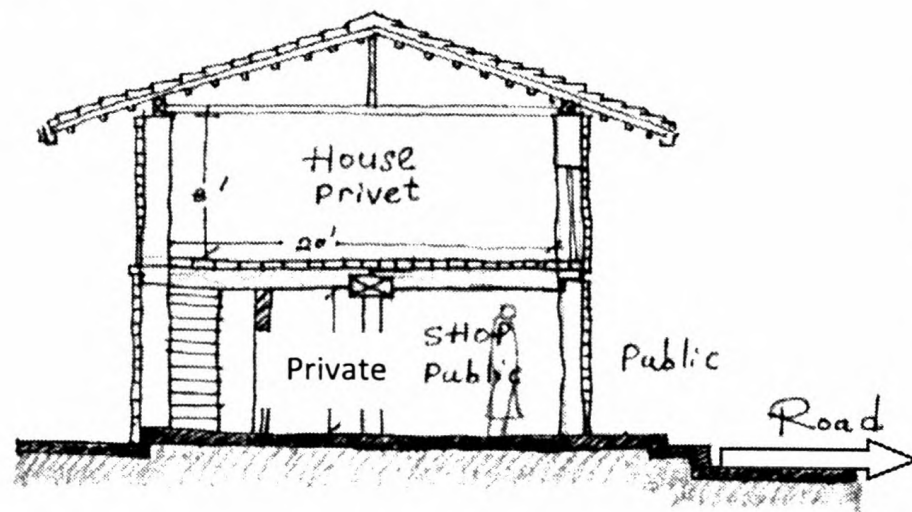


Fig. 11: Old character of form. Type 1
 Source: Author

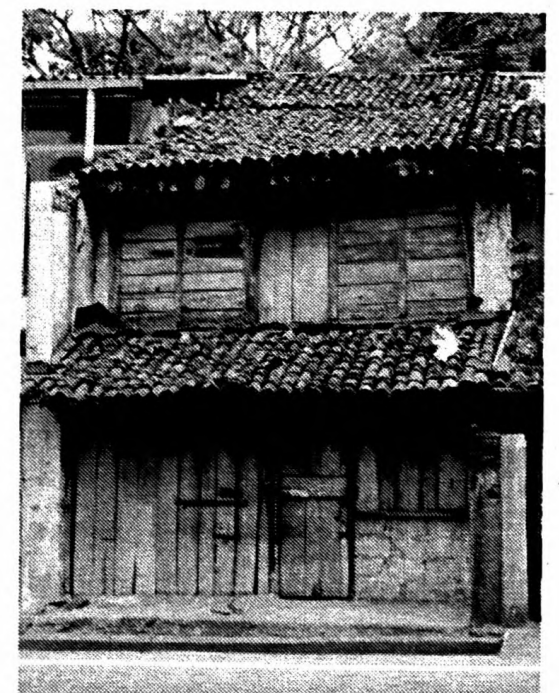
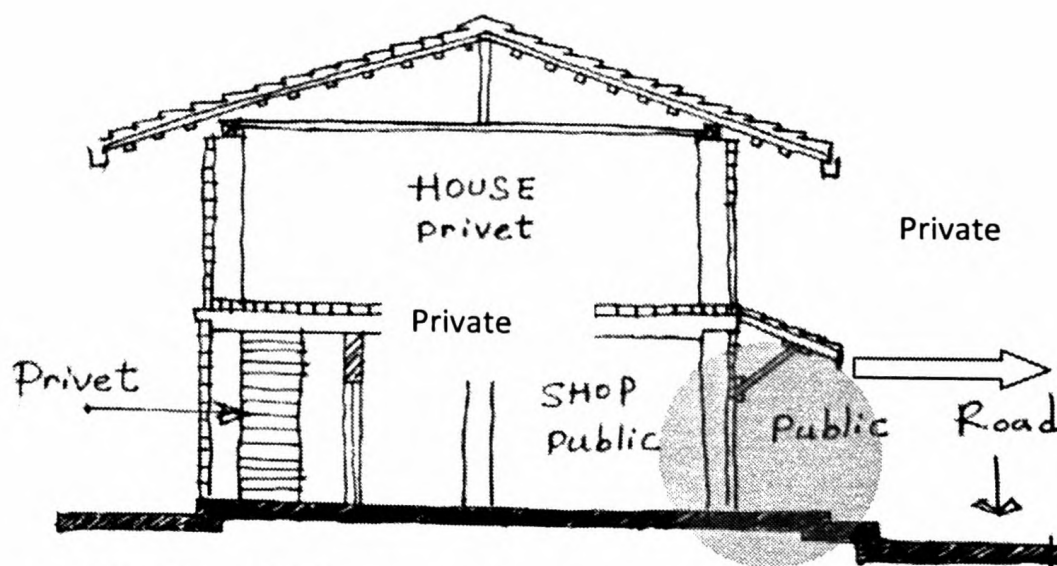


Fig. 12: Old character of the form. Type 2
 Source: Author

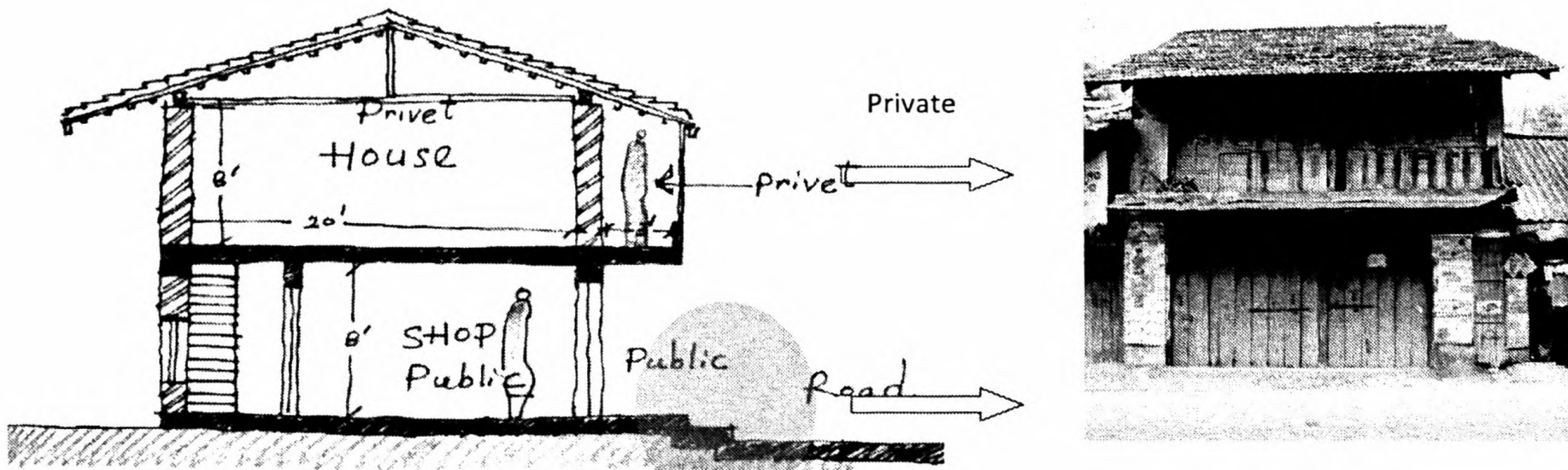


Fig. 13: Old character of the form. Type 3
Source: Author

New characters of the built forms

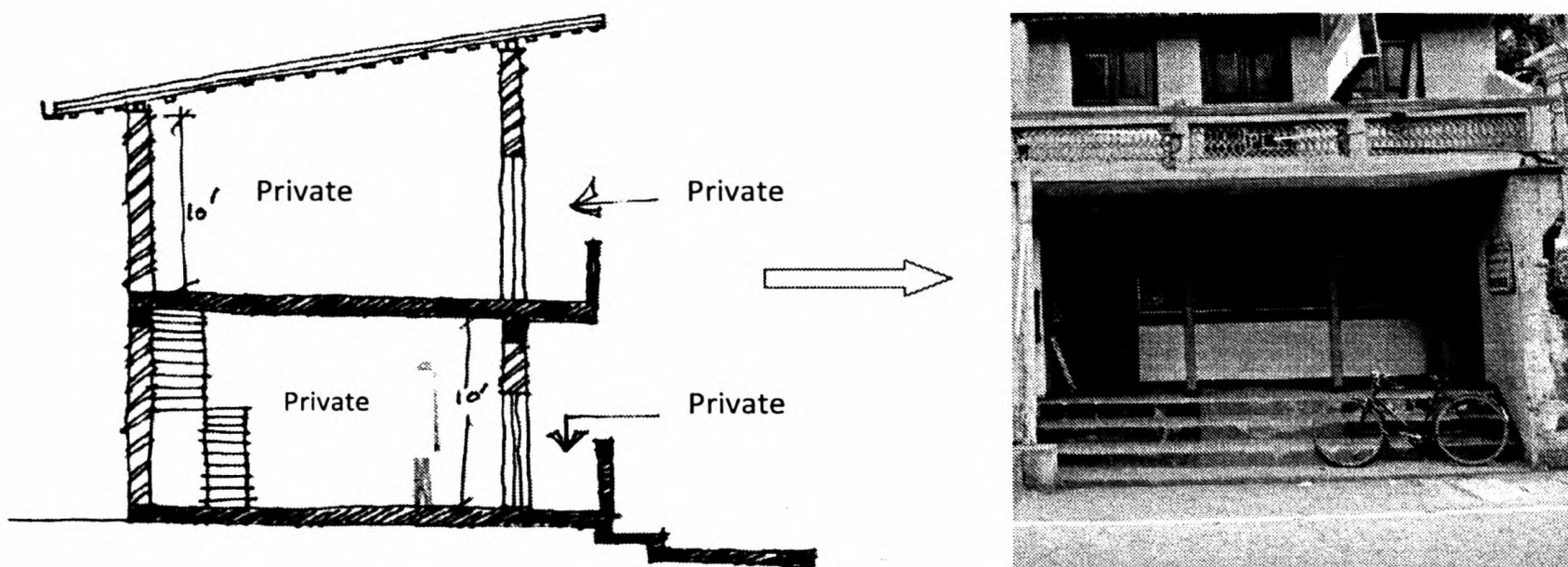


Fig. 14: New character of the form, type 1
Source: Author

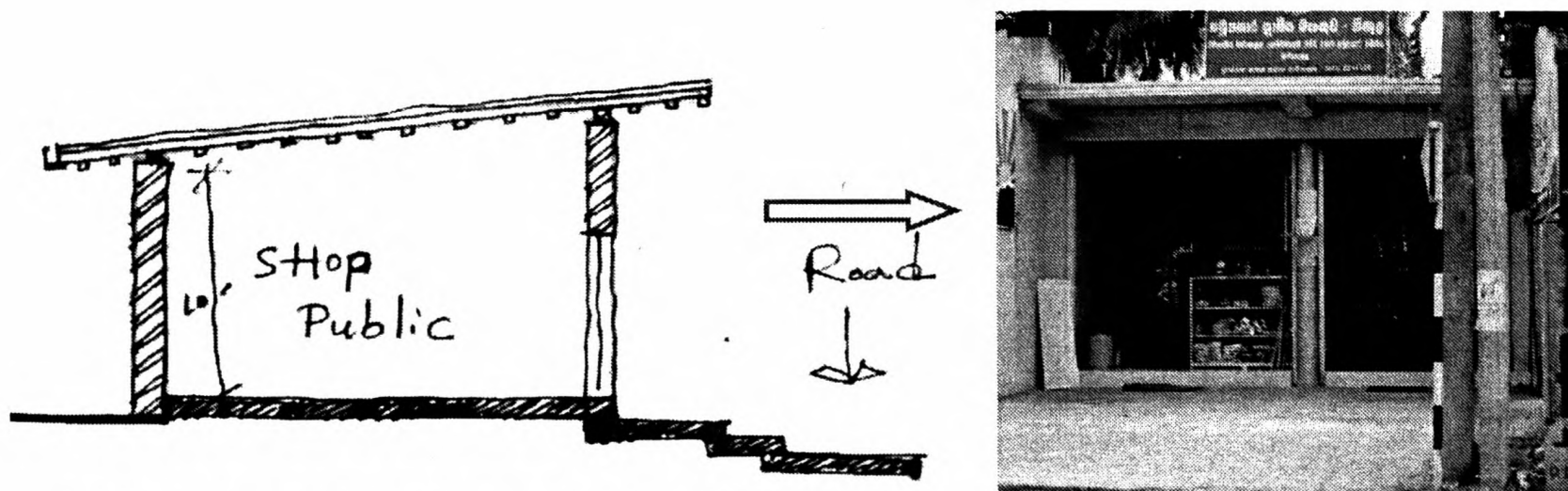


Fig.15: New character of the form, type 2
Source: Author

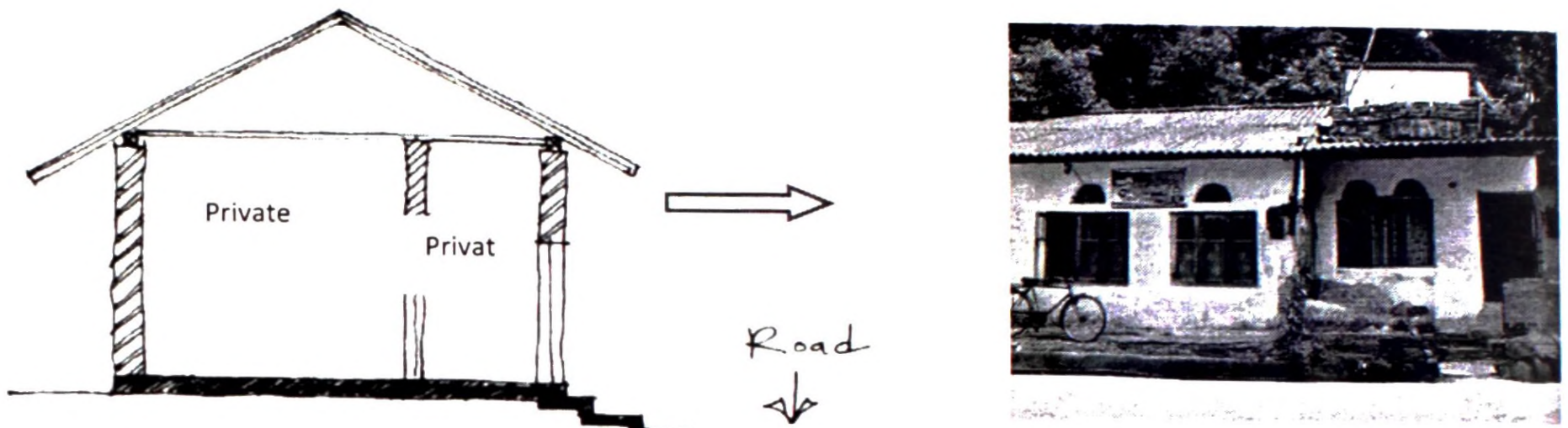


Fig. 16: New character of the form, type 3
 Source: Author

As a socio- economic aspect, industrial development affects the form of the built fabric. When functions change, built form and its appearance also change. Migrants mostly come to Hingula for living. Hence, the majority of people have demolished old shop houses and built only the dwellings. As a result, town character has been destroyed. Technology affects the as material used and hence the built form as well.

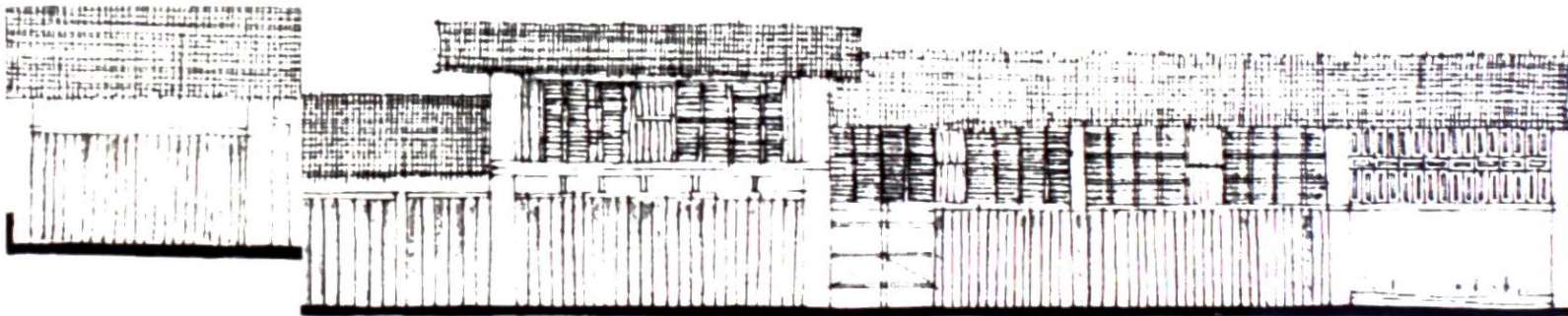


Fig. 17: Proportion and scales of the built forms, old character
 Source: Author

Interview 1 shows the impression of people on the spatial development. According to responses, people have moved to the main towns due to lack of space in the Hingula town. Furthermore, main towns have possessed many facilities, such as better job opportunities, shops, and other infrastructure facilities. 20 responses from senior citizens who participated in the unstructured interview show why this has been negative on the development of the town.

Table 4: Interview 2

| Issue | Justification | frequency |
|---------------------------|--|-----------|
| Functions of Hingula town | Now Hingula doesn't function | 20-20 |
| Migration | People go to Mawanella, kegalle | 20-17 |
| Reason for migration | There are many facilities such as occupation, shops, banks, schools, other facilities in main towns. | 20-17 |
| Immigration | People come for living purpose | 20-8 |
| Reason for immigration | Health, climate | 20-11 |

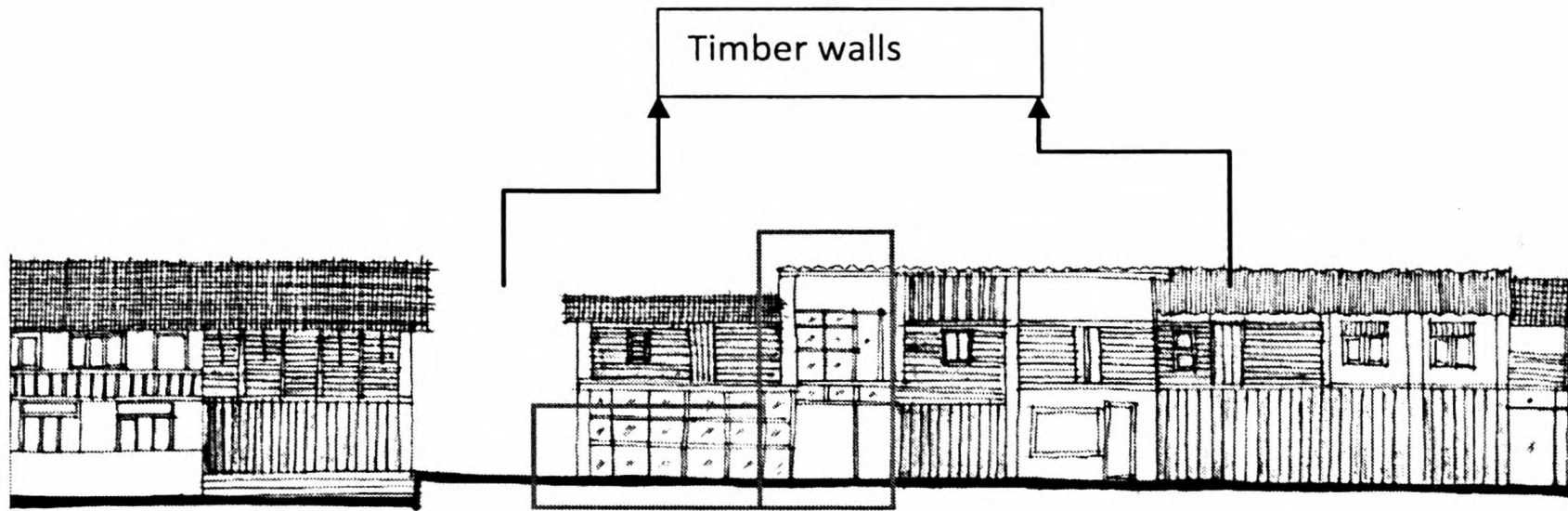


Fig. 18: Road side elevation1
Source: Author

Glass and concrete
facades

Details

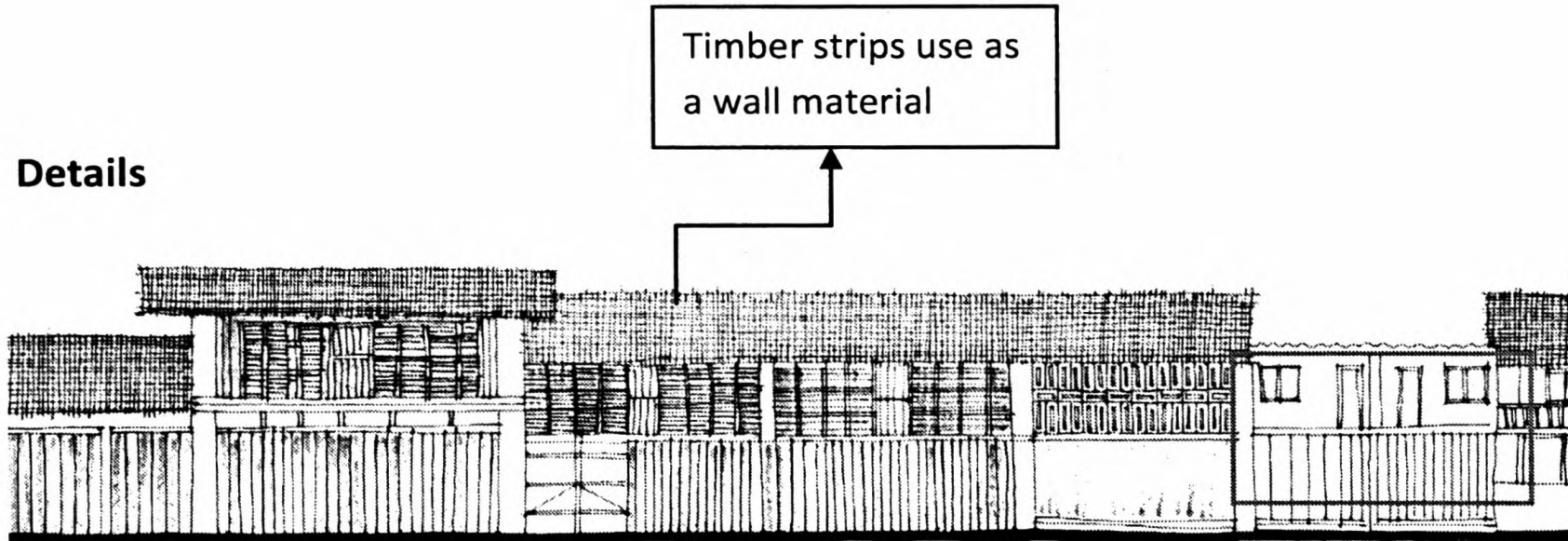


Fig.19: Road side elevation 2
Source: Author

New facades

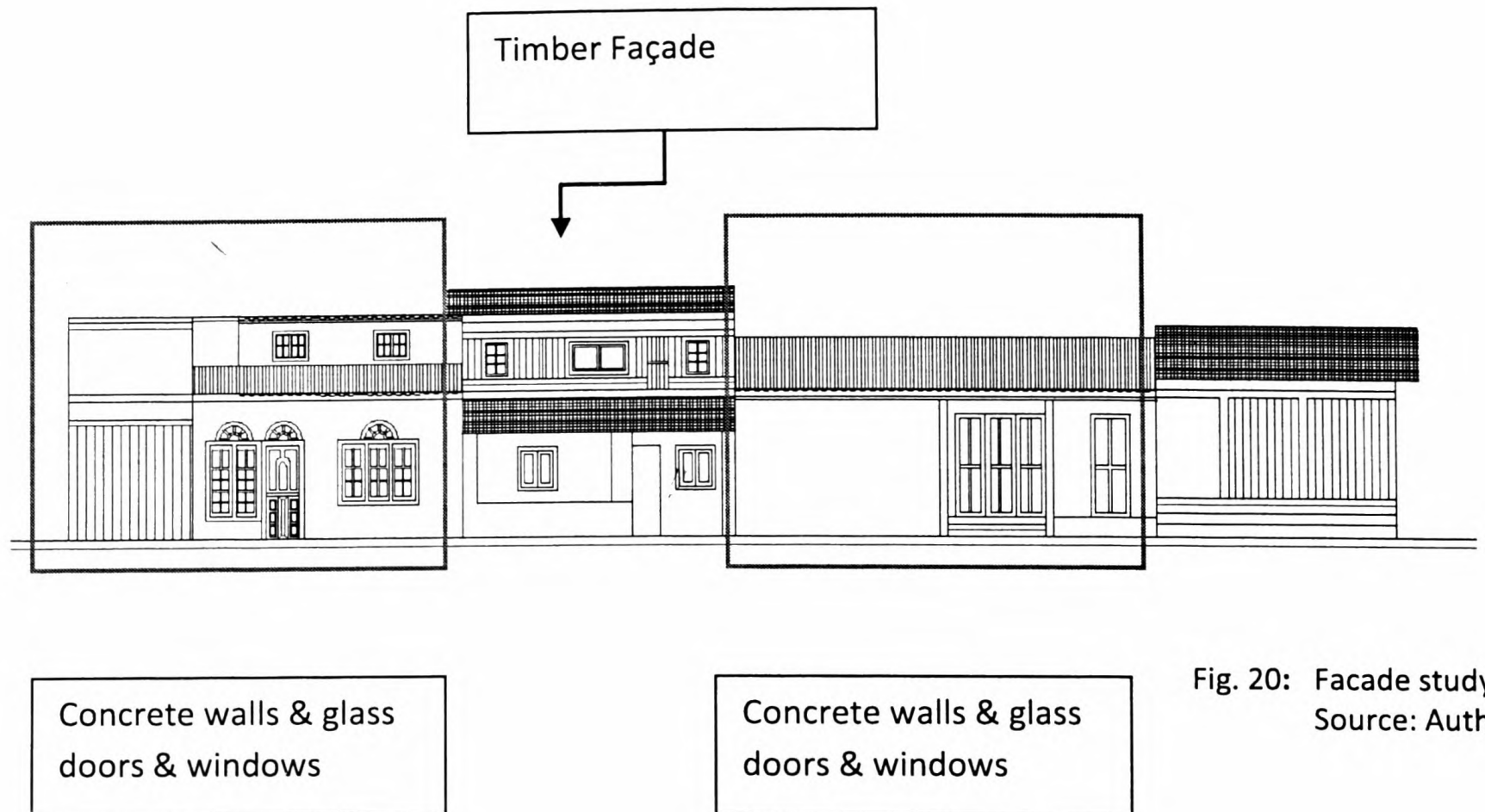


Fig. 20: Façade study 1
Source: Author



Fig. 21: Road side elevation
Source: Author

New forms and color, breaks the old vernacular character of the built fabric

As discussed, large scale industrial developments are introduced with new technologies. Originally timber was the key construction material of the buildings and concrete has become the common construction material of the recent buildings with its great availability and flexibility. In addition, the construction method of concrete is much easier than the timber construction. Glass is also a common, available material used in the contemporary shop houses. The use of contemporary materials has resulted in the traditional character of the Hingula built fabric been significantly modified proving the fact that with the development of socio- economic aspects, the built form also change.

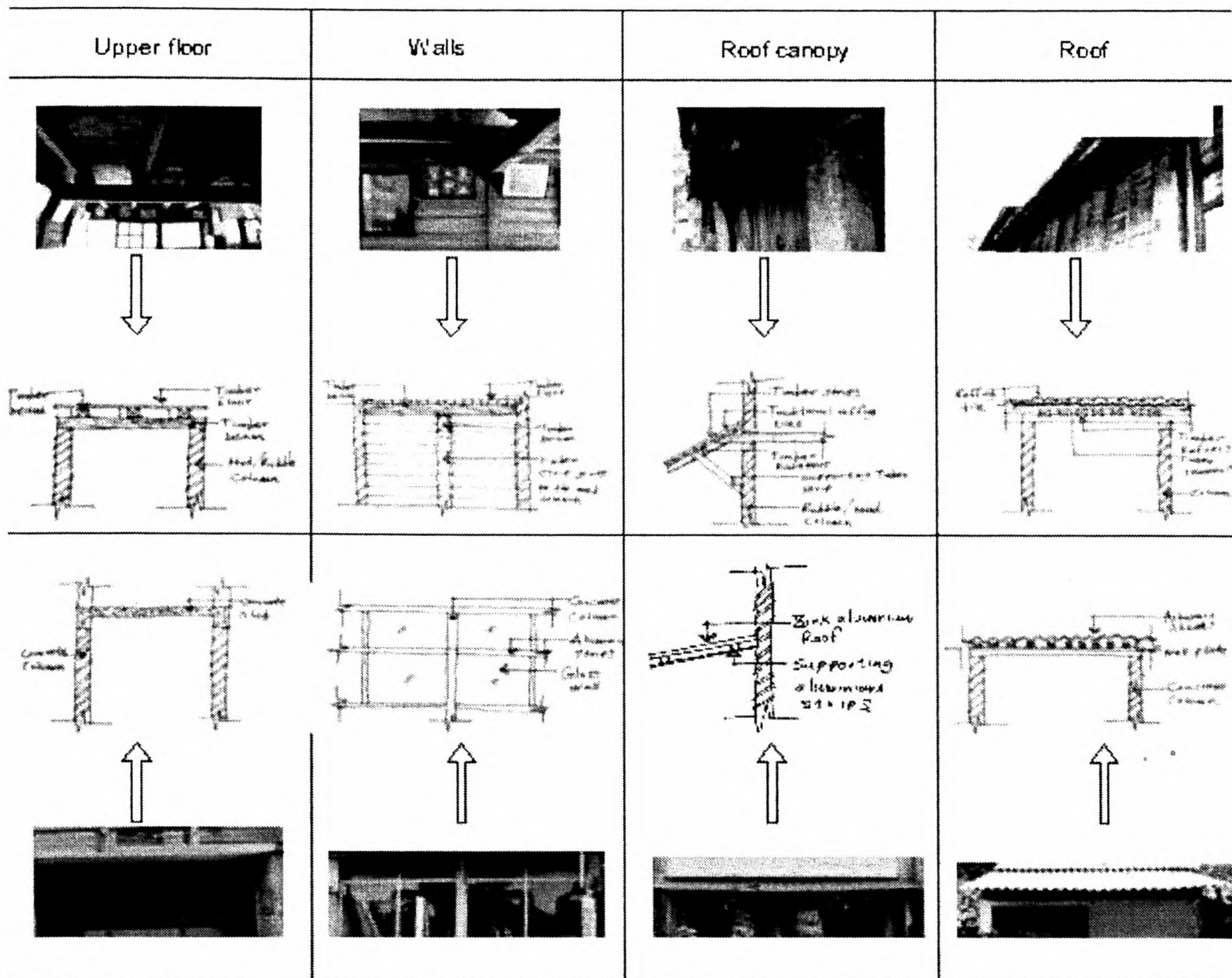


Table 5: Changing technologies and their justifications

| Technology | Reason | Number |
|---------------------|---------------------|-------------|
| Single pitched roof | 1.Easy construction | 4 out of 10 |
| | 2.More economical | 6 out of 10 |
| Additional fence | 1.For protection | 2 out of 05 |
| | 2.Get more volume | 3 out of 05 |
| Roof for residence | 1.Common type | 2out of 06 |
| | 2.More economical | 4 out of 06 |

Most responses show that contemporary construction methods are economical than the old methods. Presently, historical building technologies are considerably expensive and need lot more skills and attention. Contemporary people are reluctant to make a choice and simply decide to follow the common methods, spending less money. These interviews made easy to find the final outcome and clarify the present society needs.

Table 6: Old buildings- material usage, Type A

| Type | Element | Glass | timber | Brick or concrete | Roofing sheets | Roofing tiles |
|------|--------------|-------|--------|-------------------|----------------|---------------|
| A-1 | Roof | | | | | |
| | Front Walls | | | | | |
| | Door windows | | | | | |
| A-2 | Roof | | | | | |
| | Front Walls | | | | | |
| | Door windows | | | | | |
| A-3 | Roof | | | | | |
| | Front Walls | | | | | |
| | Door windows | | | | | |
| A-4 | Roof | | | | | |
| | Front Walls | | | | | |
| | Door windows | | | | | |
| A-5 | Roof | | | | | |
| | Front Walls | | | | | |
| | Door windows | | | | | |
| A-6 | Roof | | | | | |
| | Front Walls | | | | | |
| | Door windows | | | | | |
| A-7 | Roof | | | | | |
| | Front Walls | | | | | |
| | Door windows | | | | | |
| A-8 | Roof | | | | | |
| | Front Walls | | | | | |
| | Door windows | | | | | |

Table 7: New buildings- material usage Type B

| Type | Element | Glass | Timber | Concrete | Roofing sheets | Roofing tiles |
|------|--------------|-------|--------|----------|----------------|---------------|
| B-1 | Roof | | | | ■ | |
| | Front Walls | ■ | | | | |
| | Door windows | ■ | | | | |
| B-2 | Roof | | | | ■ | |
| | Front Walls | ■ | | | | |
| | Door windows | ■ | | | | |
| B-3 | Roof | | | | ■ | |
| | Front Walls | | | ■ | | |
| | Door windows | ■ | | | | |
| B-4 | Roof | | | | | ■ |
| | Front Walls | ■ | | | | |
| | Door windows | ■ | | | | |
| B-5 | Roof | | | | | ■ |
| | Front Walls | | | ■ | | |
| | Door windows | ■ | | | | |
| B-6 | Roof | | | | ■ | |
| | Front Walls | | | ■ | | |
| | Door windows | ■ | | | | |
| B-7 | Roof | | | | ■ | |
| | Front Walls | | | ■ | | |
| | Door windows | ■ | | | | |
| B-8 | Roof | | | | ■ | |
| | Front Walls | | | ■ | | |

According to the observations, there is a considerable variation in the materials among the old and new buildings. Common materials of the present built fabric are timber, concrete, roofing tiles, roofing sheets and glass. According to the above diagrams, the variation of the material usage can be clearly identified. Each and every traditional building has been constructed with the timber and roofing tiles as exterior materials. New types of buildings have been used sheets for roofs, concrete for walls and glass for doors and windows. These are considerable changes compared with the old buildings.

Conclusion

The study shows that the socio- economic transformations have significant impacts on the built forms. It also showed that Hingula town has shrunk over the years, while the neighboring main towns have expanded. This suggests that small suburban towns and their functions have the possibility of shrinking as the neighbouring towns develop.

The socio- economic aspects, geographical limitations have also contributed to the shrinking of the small towns because people and their needs have over passed the geographical limitations. Thus the historical towns are likely to be negatively affected due to developments and socio-economic aspects. The transportation infrastructure development also contributes to the decline of traditional suburban towns which may be a positive factor for the development of a new town.

Hingula is a historical town which had a number of traditionally built shop houses. Its built fabric gave a unique architecture to the town. Built form, material, technologies reflected the vernacular architectural quality. Such historical towns are generally unable to meet the demands and values of the present generations and hence they cannot be prevented from being transformed.

In summery;

- 1) Along with the socio- economic development, people shape their built form, spatial arrangement and physical appearance of the built form.
- 2) Socio –economic transformations change the physical organization of a built fabric.
- 3) New technologies, materials functions change the built form and its character.
- 4) As a result of socio- economic development, small towns get declined and their specific characters get disappeared.

Built forms produce a specific architecture or specific character to an urban fabric. When socio-economic aspects are modified, built forms produce new elements in the urban environment. New materials as well as technologies create new building typologies. In small historical townships, even though the built form had originated in response to the socio-economic needs, their transformations themselves can cause damages to the distinctive urban character. This may create a chaotic situation of urban character.

The critical aspect is that the development process itself generates negativities breaking the old characteristics of traditional townships. Most such towns shrink due to the transformations of economy and society. Nonetheless, those historical towns represent various other demands and cultural values to the people and place. The study concludes that towns with rich architecture of shop houses like Hingula should receive careful attention of the urban designers in order to manage the built form character.

This study proposes that managing built character of the suburban townships should be studied further in order to develop outlining principles, methods, and strategies and such towns. Further, they should be carefully examined within regional and local development policy frameworks.

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