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Continuum of Settlement Pattern in Karaikal in the Perspective of Conservation

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ABSTRACT

Karaikal is the small town built in the northern banks of Arasalar river in the former kingdom of Thanjore, Tamil Nadu. Now it is the major port town in the union territory of Pondicherry. The evolution of human settlement in Karaikal has been passed through many phases starting from early Dravidian to the present urban settlement. In-between, Karaikal was under many dynasties like Pallavas, Cholas, Khilji, French, Dutch, English and then finally now, under Indian democracy. Hence diverse culture and religion is seen in Karaikal. Each stages of development in Karaikal have been experienced with different cultural influence in town planning and architectural styles. This makes the Karaikal town rich in heritage. This paper gives the overview of the evolution happened in Karaikal in terms of settlement pattern and housing styles all through its timeline with its ground of influence and the adverse effects of urbanisation in heritage streets and buildings. Hence this paper aims to learn different cultural and religious influence in Karaikal's settlement pattern and housing and to conserve diminishing heritage streets and buildings due to urbanization. The information is collected by field survey at Karaikal and from literature references.

Keywords: Karaikal; Human settlement; Social planning; Housing style; Conservation.

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INTRODUCTION
Karaikal is the small town with rich religious heritage that is evident through its social planning and religious buildings. The town enjoys harmonious society made of Hindus, Christians and Muslims. The French flavour still persists but Tamil remains the native culture of Karaikal. The small town have famous religious building with very rich heritage for all the three predominant religions. Karaikal Ammaiyar temple for Hindus, Our lady of angel's church for Christians and Masthan Palli mosque for Muslims.

History Timeline
Karaikal falls under Neidhal category in the ecological classification of Tamil lands, in the Sangam literature. The people who settled in the coastal regions of the South India are basically the people who migrated from the Indus Valley widely known as the Dravidians. They were mainly found to be as Monsoon predictors, who slowly transformed into Fishermen and Boat builders for their livelihood. In ages, they developed their knowledge in trading and were known as Maritime traders who travelled to Eastern and far South-eastern countries. These people who were mostly involved into sea trade had a better knowledge of the wind [1].

The Cholas ruled Karaikal, which lies in the Cauvery delta region till 6thACE. Then Pallavas conquered and ruled Cauvery delta region in the 7th ACE during that time period Kalabhras local tribe invaded the whole of Tamilagam. In the 9th century the Cholas regained strength and remained

dominant in south till 13ACE. Pandayans defeated Rajendra Chola and ruled the northern region including Karaikal from 1279ACE-1310ACE. Sekkizhar Periyapuranam of 12thACE provides the chief information of Karaikal, which describes "Karaikal as a flourishing sea - port, in which, borne by billowing waves the curved chanks travelled far inland up the creeks. In 14th century, Malik Kafur, slave of Ala-ud-din started invading till 60's, after the death of Kulasekara Pandya. During 1618 ACE the Portuguese chased and open fired Dutch merchants due to dispute trade in Ceylon. In1620 ACE the frightened Dutch merchants were warmly welcomed by Ragunatha Nayak, the Dutch occupied and ruled Karaikal from 1674ACE – 1676ACE. In late 17th century Maratha Empire conquered and ruled Karaikal till early 18th century. The French possessed Karaikal in 1688ACE for the first time from Marathas, then French surrendered Karaikal to British accepting Pondicherry governors order. Karaikal was under British from 1793ACE-1814ACE. After the Treaty of Paris in1816 Karaikal was given back to the French who ruled till 1954ACE. Even after Indian independence Karaikal was under French rule then in 1956, the treaty of Cession is formulated, then the former French India were granted to retain their special administrative status with the privilege of dual citizenship [2].

This makes Karaikal supremely rich in culture and heritage and takes much pride in their rooted culture of 2000 years old history. The Karaikal have diverse religion and customs, which is also reflected in their town planning.

Neighborhood
Karaikal town has T.R.Pattinam in south, Kottucherry in north, Thirunallaru and Nedungadu in the West. During the Pre-French period, Karaikal was depended on T.T.Pattinam and Kovilpattu, a small nuclei village for agriculture. From the literature of French it is known T.R. Pattinam had a port during the Pre-French period.

FACTORS INITIATED HUMAN SETTLEMENT IN KARAIKAL
Physical Factors
Water Supply
Forming part of the fertile Cauvery delta, the region is completely covered by the distributaries of Cauvery. It is limited on the south by the Arasalar, in the west by the Vanjiyar and in the east by Bay of Bengal. Water played an important role in settlement, so they preferred wet points, which were away from rivers and Bay of Bengal to avoid flooding.

Topography
Karaikal region is almost flat, having a gentle slope towards the Bay of Bengal. Settlement preferred high grounds to escape from floods and defending themselves from enemies.

Relief
The south facing slopes receive more sunlight and are protected from cold Northerly winds. Hence settlement and agricultural land is therefore located on South facing slopes of Karaikal.

Climatic Factors
Karaikal is located on the east coast of India. It has annual rainfall of less than 20%. Temperature, humidity, cloudiness and surface winds are good to start a human settlement. It has temperature variation between 23 degree C to 37 degree C.

Economic Factors
Communication
Settlements in Karaikal located next to rivers where the width is low (bridging points) so it can be easily crossed. These locations allowed maximum communication between different

settlements and increased trade.

Resources

Early settlers of Karaikal relied upon the resources like wood for fuel and building and fertile soil for agriculture. Karaikal had bushy area on the northern side. It had fertile alluvium soil. Later, minerals like brick clays, kankar, Seashells, Ilmenite and garnet sands helped in the growth of settlement [3].

TOWN PLANNING CHARACTERISTICS TILL 20TH CENTURY
Settlement Pattern

Settlement pattern of Karaikal is influenced by factors such as major routes, topography, religious and cultural impacts, rulers and geographical features resulting in different patterns as shown in the figure 1.

Linear settlement: From Pre-Sangam age till 9th century, linear wise settlement was commonly found along the artery of Karaikal town, Poraiyur road. It had no obvious centre. The density along northern side was less compared to southern side.

Elongated linear settlement: After 5th century, the linear pattern started elongating in parallel and upward direction. During this time, the development was on all the 4 directions. Southern side growth was minimum.

Semi - clustered settlement: From 13th century, the linear pattern started elongating on all the directions in dispersed way due to a merging of new streets.

Clustered settlement: From 16th century the settlement pattern was mostly dispersed on South – East and South – West direction. The Muslims occucpied the South – West are during the Muslim rule by Khilji dynasty [4].

Grid-iron settlement: During 18th century the French occupied Karaikal, and fortified the town area. French formulated the grid – iron pattern in Karaikal during their rule.

Grid-iron pattern with clustered: Till 19th century the grid iron pattern was retained and the growth was towards the northern side in the same pattern. After in 20th century the growth spread along both east and west side of Karaikal in the clustered way.

Religious Influence on Settlement

Karaikal town holds large numbers of Hindus, Christians and Muslims with major impact in town planning. Many streets were designed around the religious building corresponding to their respective religions.

5th Century: The Somanathar temple marked the northern boundary of Karaikal. The settlement towards the northern side was less because of the bushy land. Karaikal had busy activities around the Vinayagar temple like trading. Large numbers of houses were seen around the area. The Ayyanar temple marked the southern boundary of Karaikal were the settlement growth was restricted.

9th Century: During 9th century the linear growth was towards the Somanathar temple.

The Padai Badra Kaliamman temple marked the North–East boundary. Economically wealthy people occupied the middle part of Karaikal around Vinayagar temple who were mostly traders and farmers. Ayannar temple marked the southern boundary in this century also.

13th Century: Till the 13th century the Hindu community occupied Karaikal. The Arabic traders entered India in the west coast as Mohammedians then moved to other parts of India. The group of

Mohhamedians who entered Karaikal were called as Maraikkayar. They got settled in the South –West side and they adopted the local language [5].

The Badrakaliamman temple and Ayyanar temple marked the boundary.

16th Century: Karaikal got more Muslim population on the South–West side. A prayer hall was constructed in the area. The Hindu population got denser around the temples. The Badrakaliamman temple and Ayyanar temple marked the boundary.

18th Century: Due to the invasion of French troop in Karaikal the Christian settlement started around the church and the French administrative buildings. During this century mixed community settlement started. The French destroyed the boundary temples and Annamalai Eashwarar temple.

19th Century: The zones that were predominantly occupied by Hindus, Muslims and Christians started settling together. Most of the newly developed areas had mixed community settlement.

20th Century: This century involved in development of many public spaces, which encouraged the mixed community settlement. Newly developed religious buildings had their respective settlement around it.

Community Planning
The Hindus and Muslims community planning styles are quite similar as they were planed with religious building as main focus, where as Christians communities settled in grid iron pattern having church in the central square.

Agraharam planning: Agraharam is name of street or place where Hindu Brahmin community lives. The agraharam is mostly seen around and along the temple. The linear pattern of planning is seen in Karaikal. In this settlement pattern, the houses culminates at temples, these type of planning is seen in perumal koil street and kailasanathar street as shown in figure 2. The row houses share a common wall and a long veranda running along the front portion supported by wooden pillars.

French- grid-iron planning: In this category, planning the streets run at right angles to each other forming a grid. The French planned an organized arrangement of buildings and spaces as shown in the figure 3. They had planned church in the central grid around residence and commercial [6].

TYPOLOGIES OF HOUSING STYLE IN KARAIKAL
Karaikal has different typologies of architectural styles in housing because of its rich cultural impact on the architecture of the city. The Karaikal housing styles gone through many phases starting from traditional style to the present contemporary style ay shown in the figure 5.
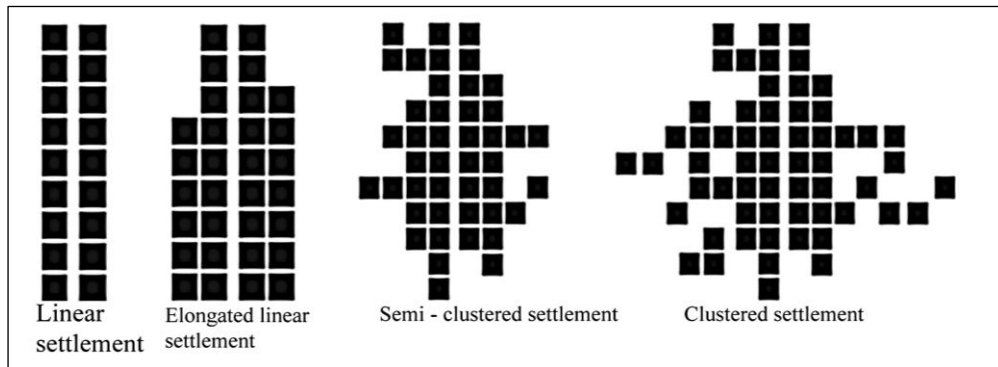
Traditional Style
Traditional houses planning and elements varies based on their religion and customs. Two major traditional housing categories in Karaikal are economically wealthy people houses and economically weaker people houses.

Economically Wealthy People Houses
Planning concept: Traditional houses concentrated mainly on climate responsive and social interactive planning concepts. The longer side were facing on the North-South direction to get maximum day lighting.

Characteristics: Row houses – single or double storied pitched roofing. The row houses sharing a common wall had a long veranda running along the front portion with stone or wooden pillars. Passage that starts at the street face runs through the house ending at the backyard.
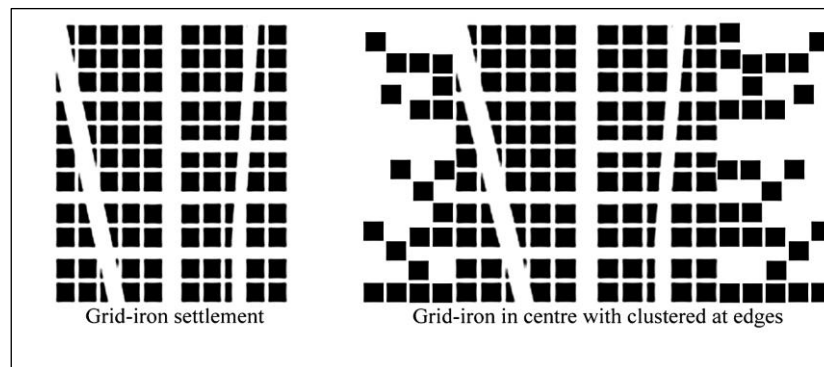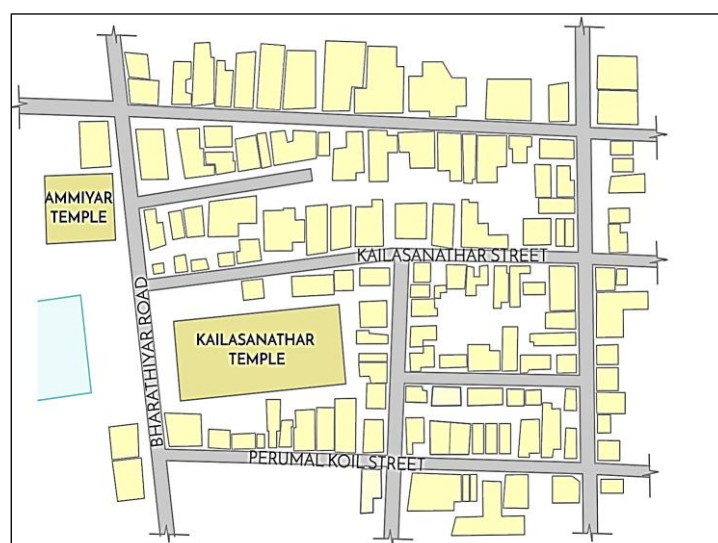
Linear settlement   Elongated linear settlement   Semi - clustered settlement   Clustered settlement

Fig. 1. Types of settlement pattern.

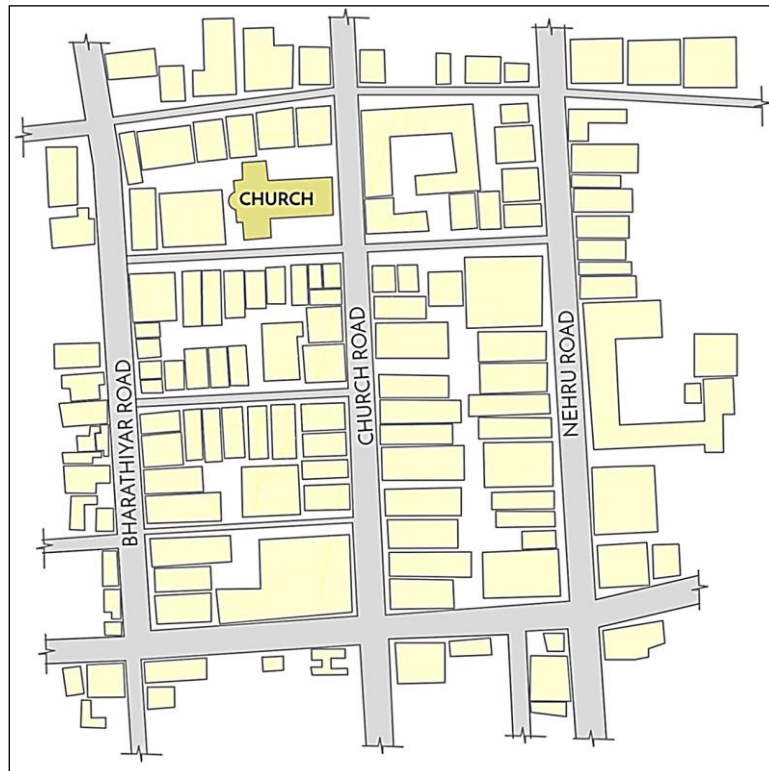***Fig. 2.*** *Agraharam community plan.*

Fig. 3. *French- Grid iron plan.*

Fig. 4. *Evolution of housing style in Karaikal.*

Construction materials: Rubble foundation, flat brick masonry, madras terrace roofing, Mangalore tiles, pot tiles.
Roofing style: Sloped roofs with pot tiles or Mangalore tiles.

Economically Weaker People Houses
Kutcha houses are built of mud, bamboo, stone, lime, grass. Their roofing are mostly of thatch or sticks. The plans of these houses have one room with partitioned kitchen and toilet outside. These house

have square plan or circular plan. They have sloped roofs [7].

French Style
In Karaikal very less number of French style houses are seen compared to other style of houses. Most of the houses of these styles are demolished due to its age. Some of the common characteristics of this style are as follows:
Planning concept and characteristics:

Symmetrical plan and elevation, tall compound walls with grand gates, colonnaded porticos, entrance court, rear court, segmental arched doors and windows, bifurcate staircase, large halls-column carrying heavy wooden beams, semi circular arched gates, large front and rear balconies, coloured glass windows

Construction materials: Rubble foundation, Flat brick masonry, Madras terrace roofing

Colours used: Bright white, ceramic yellow, terracotta & other mild colours
Roofing style: Flat roofs & madras terrace roofing

Franco-Tamil Style
Franco Tamil houses are influenced by the building style of the French. They employ large number of style elements and while still maintaining their typical Tamil planning concepts. Economically wealthy Tamils people own these buildings.
Ground floor: Veranda connected with the adjacent building, the corridor lead to the interior or central courtyard (mutram), carved doors, lined up by an inner veranda with country tiles, beyond more private rooms, rear courtyard that encloses kitchen, store rooms, back court contains toilet, bathroom and wells.

First floor: First floor influence French style elements like arched windows, plaster decoration, luted pilaster, columns with capitals, architectural motifs, large balconies, most of the houses has visual connectivity with the ground floor.

Construction materials: Rubble foundation, flat brick masonry, madras terrace roofing, Mangalore tiles & pot tiles.

Roofing style: Flat roofs & madras terrace roofing.

Modern/Contemporary Style
New style of housing followed this style. Modern houses are built by demolishing traditional houses or in a new plot. These houses have simple contemporary plan and elevation, without following any traditional methods. The parking area is included in the frontcourt of houses by cutting thinais. Mixed-use types are also seen.

PRESENT SCENARIO OF KARAIKAL
Now Karaikal is the developed town with diverse cultural impact. It have retained its town planning pattern of the past to maximum extent but the newly developed areas don't follow any similar patterns rather they are grown functionally with period of time. Hence now Karaikal is slowly loosing its historic town-planning pattern as shown in the figure 4. Rather than community-based settlement, occupation based settlements started emerging around public buildings that are predominantly in mixed community manner. This mixed settlement was highly developed on almost all the new streets. Since Karaikal is the old city with large number of aged buildings, many out of which are undergoing renovation. This promoted the new contemporary architectural style neglecting the traditional style, which had climate responsive elements and heritage values [8].

NEED OF HERITAGE CONSERVATION
Conservation of heritage buildings and planning style is an important tool in city development. As it defines the landmark within the heritage area as well as to generate economic return and to support the tourism industry. It offers an intellect

of identity and continuity in a fast-changing world for future generations. Heritage buildings basically characterize the past history and culture of a nation. They establish together the architectural heritage of an area. Karaikal has rich heritage values in its town planning and housing styles, which depict its past culture. The streets of Karaikal such as Bharathiyar Street, Church Street, Kottai Medu Street, Masthan Palli Street, kailasanathr koil street and areas surrounding these streets have rich heritage which is now slowly diminishing.

Figures 6 and 7 show heritage buildings in historical streets, which were constructed in different architectural styles of Karaikal. From this mapping it is clearly evident that Karaikal is loosing identity due to its urbanisation. Hence conservation of heritage town planning and buildings are very essential to retain city's identity.
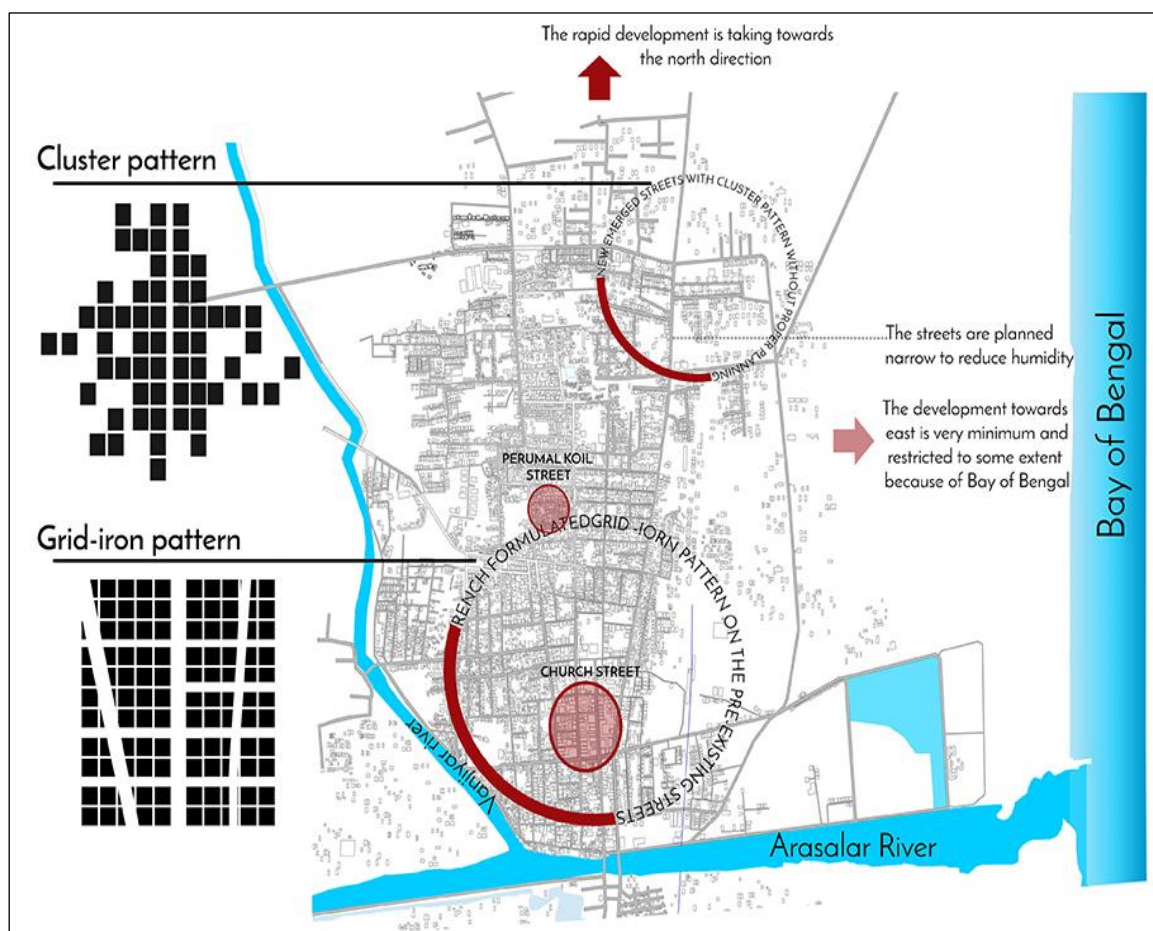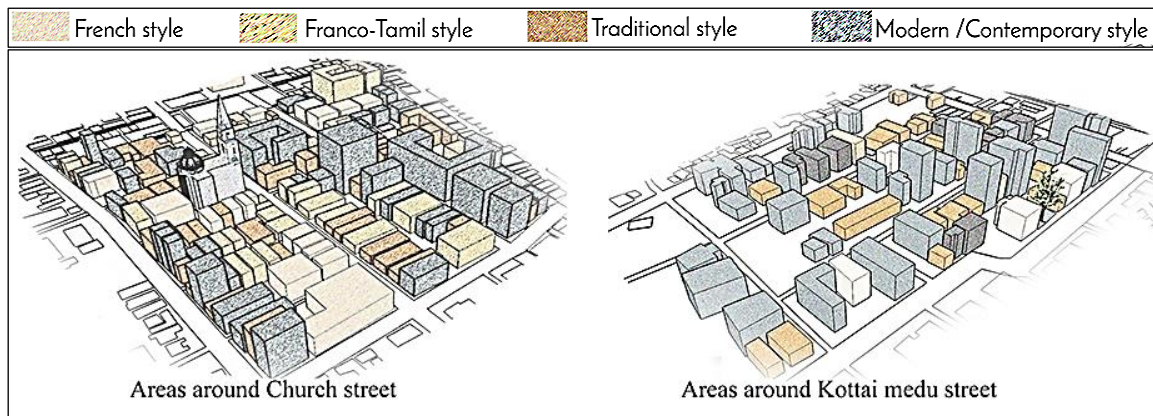

Fig. 5. *Karaikal town plan.*

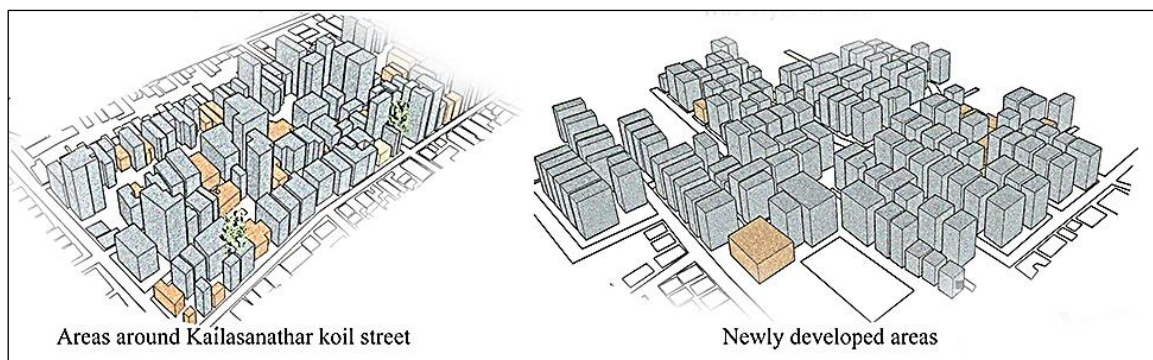**Fig. 6.** *Mapping of heritage buildings.*

Fig. 7. *Mapping of heritage buildings.*

CONCLUSION:

In today's scenario the social planning of past is not conserved and adopted in city planning which makes the city to loose its identity. Karaikal was initially a hindu settlement, but their traces are almost destroyed by urbanisation. Only few places around the temple have aghraharam planning but their characteristics are mostly gone. Before urbanisation Karaikal went through many phase of development, the new one did not override on the past instead it took along separately without disturbing past. But now due to urbanisation everything is changed to meet the urban needs without concentrating on our culture and heritage. This is also reflected in housing styles of Karaikal where mostly all the houses are constructed in contemporary style without considering traditional elements and planning style. All these make Karaikal to loose its great heritage value. Hence it becomes important to conserve. Karaikal's historic town planning and heritage buildings.

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