LOST HERITAGE OF FORT SETTLEMENT - A CASE STUDY ON DEVANAHALLI FORT, BANGALORE, KARNATAKA, INDIA.

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Abstract:

The long-lived historic structures behold within them decades of culture and heritage, oceans of traditions and tales of glory. They are a cradle of its evolution. Modern day development and the need to cope with technological advancements has overlaid heritage conservation and its importance. With the spike of urbanization and the threats it poses to the heritage settlements, it is momentous to research and strengthen the local history, which is the identity of a City. Often physical heritage loses its relevance long before the idea of preservation is even born. It is our prime job to identify such treasures and preserve them, to narrate eras and victories about our heritage to future generations. One such example is the Devanahalli Fort settlement. With the development of Bangalore's infrastructure, the significance of the Devanahalli fort, a heritage site of Archaeological Survey of India (ASI), is rapidly getting lost in thin air. This paper attempts to explain about the fort settlement and the traditional houses that are rich in heritage, it's architectural character and historic identity/value. It also attempts to explain how we could shield our heritage from the monstrous beast called 'urbanization' and to give some proposals to conserve and enhance the fort to be a better tourist spot.

1. Introduction:

With rapid growth in population, urbanization seems to wrap its arms around the heritage fabric, assimilating within it all its cultural charm, its traditions and its very existence. Intense vandalization of rural fabric with replacement of modern era buildings seems to supersede the cultural techniques and the sense of tradition in the setting. In
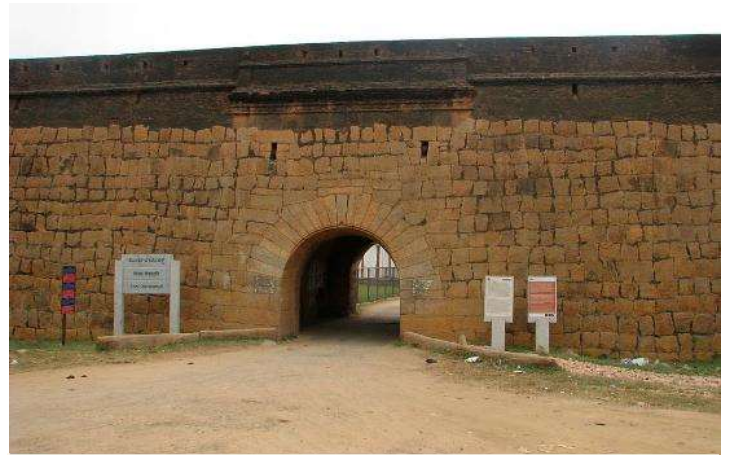

Figure 1 Entrance Gateway - DEVANAHALLI FORT

the expansive demand for jobs, opportunities, and buildings to accommodate all of it, the places which symbolize the local history and its significance becomes miniscule and nullified by the ferocious wave of urbanization. This paper is an effort to study and exhibit the potential of a victim of urbanization, Devanahalli fort and to forward few guidelines to save and retain its originality to supply it for the knowledge of future generation to understand the local history.

The main entrance (Fig.1) for the fort is oriented towards the east. We can witness the strong rarely oval fortification veneered with dressed masonry approximately 12 semi-circular bastions at regular intervals. Devanahalli, fort is in Devanahalli-town municipal council in Bangalore rural district in the state of Karnataka, India (Fig.2). Devanahalli is abutting the Bangalore-Hyderabad highway at about 40 km northeast of Bangalore, close to Kempegowda International Airport. It belongs to tropical Climate, with average temperature of 23.9˚C, precipitation

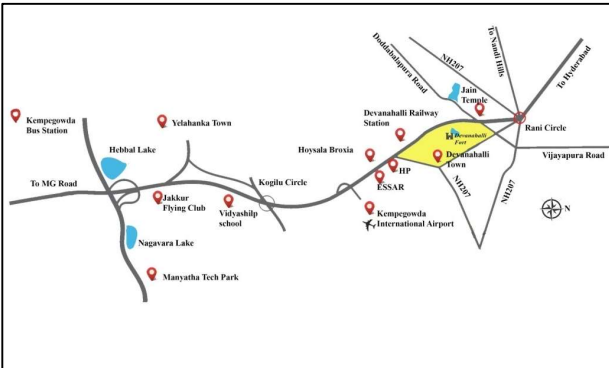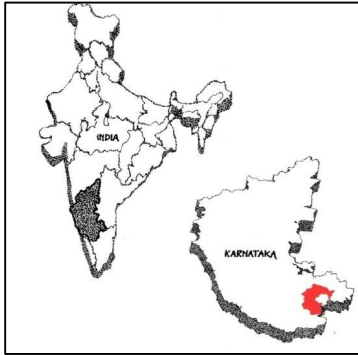732mm, varies to 161mm between the driest month and wettest month (5&6).

Figure 2 LOCATION

The original name of Devanahalli is DEVANADODDI, dated back to 15th century. The fort was constructed in 1501 AD, made of mud structures. A group of refugees settled from conjeevaram (present Kanchipuram), camped near the foothills of Ramaswamy betta. The chief of the tribe Rana Baire Gowda, a heir of mosaru wokkalu community, contemplated for an harmonious settlement for his people, his son Malla-Baire Gowda during Vijayanagar Rule, identified the fort location. The fort has navigated through several supremacy of dynasties including Rashtrakutas, Nolambas, Pallavas, Cholas, Hoysalas, the Vijayanagaras, Marathas, and Mughals. Wodeyars of Mysore took over it after renovation (4). With all these change in dynasties the fort still secures and reserve its original fabric with enduring old building to portrait its glory. Henceforth, to protect, preserve and conserve these pearls of our heritage, significant measures are to be taken, and implemented in the course of time. Studying the pattern of change, growth and the deviations in the multiplying economy helps us step up the chances of glorifying and protecting our long-lived heritage structures and their character.
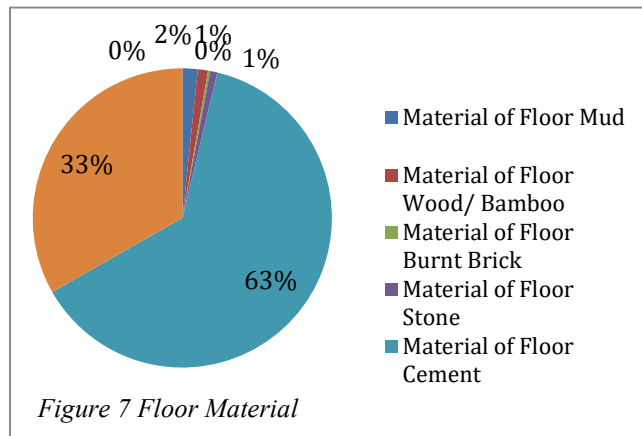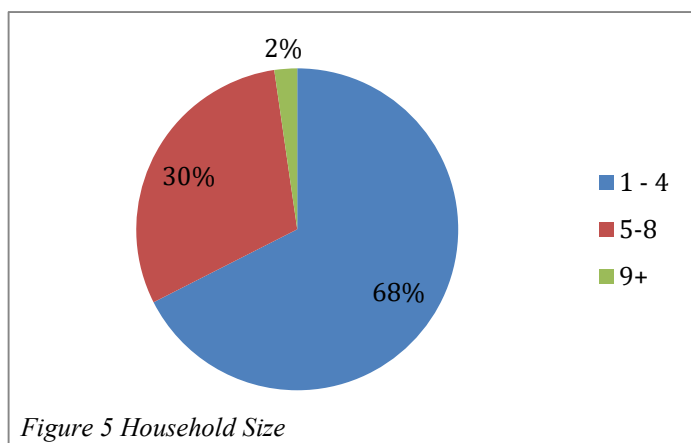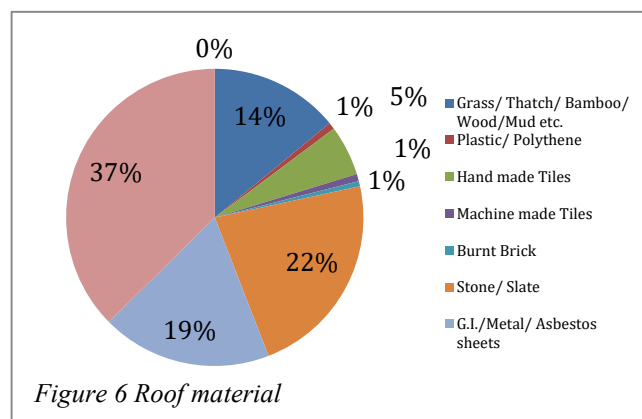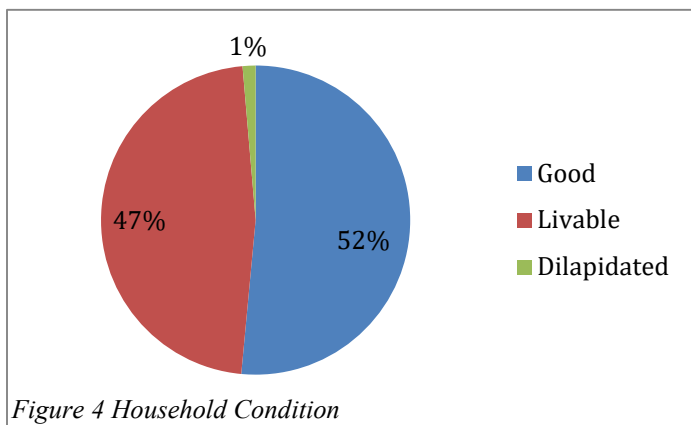
2. Current Scenario:

Urbanization is an inevitable factor everywhere. Though the urban extension and progression feeds the local and their occupation, it takes a peal in


Figure 3 Devanahalli ward map
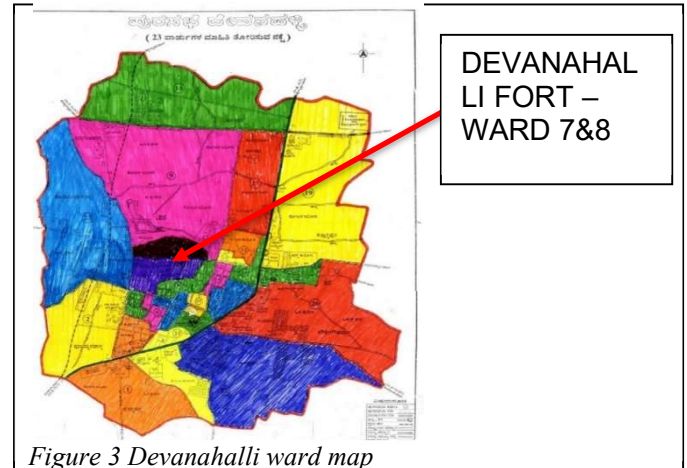
historical remains (*K. Kiruthiga et al, 2019*). Urban sprawl of Bangalore towards the north side has tremendous urbanization effects on the Devanahalli town. The fort settlement has developed into sub-urban area, majorly supporting International Airport and the new related expansion. However, at the current scenario, the vicinity of this fort close to the Kempegowda International Airport is a supplement to its potential as a tourist spot. The transforming Devanahalli fort holds ward 7&8 in the existing Devanahalli town ward map (Fig. 3). As per the data available, based on house listing and housing *census 2011*, the details about household is tabulated in Table 1. The house-hold condition is from good to livable and 2% of dilapidated houses with about 68% household size of 1-4, 30% of household size of 5-8 (Fig.4,5).

TABLE 1 HOUSEHOLD DETAILS						
Household condition		Ownership Status		Type of structures		Household size
Good	51.5	owned	54.35	permanent	72.4	1	3.75
Livable	47.15	rental	43.85	semi- permanent	16.1	2	15.95
Dilapidated	1.35	other	1.8	temporary	11	3	18.9
				servicable	10.75	4	28.9
				non-servicable	0.25	5	15.25
				Unclassified	0.5	'6-8	14.9
						9+	2.3

TABLE 2 Materials Used for building Envelope					
Roof Material		Floor Material		Wall materials	
Grass/Thatch/Bamboo /wood/mud/etc.,	14.05	Mud	1.65	Plastic/Polythene	0.25
Plastic/Polythene	0.75	wood/Bamboo	1.1	Mud/Unburnt brick	22.2
handmade tiles	5.45	Burnt Brick	0.25	wood	0.8
Machine made tiles	0.8	Stone	0.75	Stone not packed with mortar	7.4
Burnt brick	0.55	Cement	62.95	Stone packed with mortar	65.65
Stone/slate	22.45	Mosaic/floor tiles	33.2	Burnt brick	2.85
G.I/Metal/Asbestos sheets	18.5	other	0	Concrete	0.25
Concrete	37.35			other	0.5
others	0				

Figure 4 Household Condition

Figure 6 Roof material

Figure 5 Household Size


Figure 7 Floor Material

The materials used for floor is maximum of cement – 63% or mosaic or floor tiles 33%. This shows the modernization of the houses happening at the interior level. The wall material being maximum of 66% stone packed with mortar and the next highest 22% of mud and unburnt bricks confirms the evolving usage of stone masonry and existence of mud wall or traditional unburnt brick masonry to a greater extent. The roof materials being 14% of grass/ bamboo/mud/wood, 22% of stone/ slate, 19% of GI/ metal/ asbestos sheet and 37% which is the maximum number of concrete roofs shows the raising trend of concrete usage as a result of urbanization. The data analysis from the Table 2 and charts (Fig.6, 7, 8) depicts that most of the houses are being rebuilt or modified to the current trend. It also clearly shows the urbanization effects on the fort area.

Figure 8 Wall material
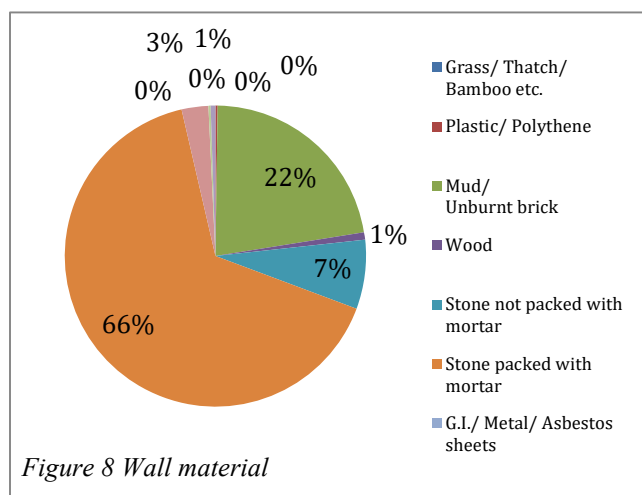
3. Study area and Analysis:
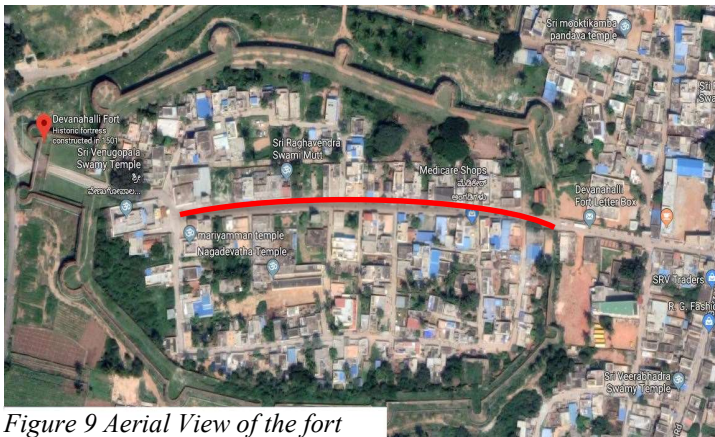
Figure 9 Aerial View of the fort

The study area encompasses the main arterial street spanning between the Venugopal Swamy temple and broken gateways (Fig. 9). Venugopal Swamy and Tipu's birthplace monument are the most attracted tourist pull to this area. Tipu's birthplace monument being in the periphery (outside the fort envelope), Venugopal Swamy temple is take as the focus in this study. Proposals will be made considering both the spots and also to improve the heritage value few building reuse and guideline to improve the locality will be proposed. Considering the arterial stretch the mapping has been made on the land-use, building height and evolution. These aspects are studied to understand the current situation of the fort taking the stretch as sample.
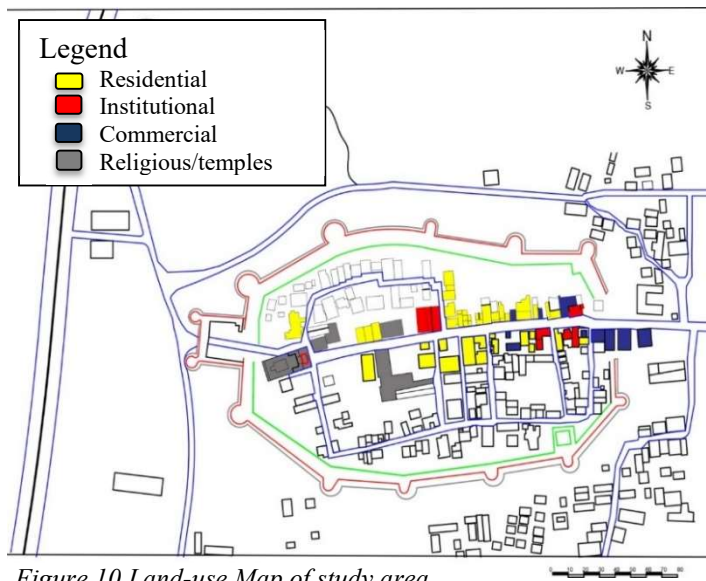

Figure 10 Land-use Map of study area

Based on a complete analysis of the main street covered, the pattern of land used was examined to arrive at a collective conclusion of the study. The depiction of various fabrics of buildings in the map (Fig. 10) gives a comprehensible picture of the current land use. As a result of the analysis it was found out that most of the land was occupied by a continuous stretch of residential building. The main street ends at a point where a cluster of commercial shops, line the street. Beyond which the place acts as a market hub which accounts for around 15% of the current land use. The density of institutional building was found to occupy about 5% of the entire stretch taken into consideration. These institutions are started at recent times and one of them is a daycare/ nursery school run at a house. The temples are positioned in the initial stretch which occupies about 5% of landuse.

The varying height factor of the buildings have been depicted in the map (Fig. 11) as we enter the main street, the initial stretch of building is mostly lined by one storey buildings crowed by terraces. After the continuity of the one storey buildings persists for a few meters, all the buildings beyond this stretch seem to be of two storeys with hardly few three-storey buildings beyond the fortification. However, the stretch within the fort wall is integral by having only
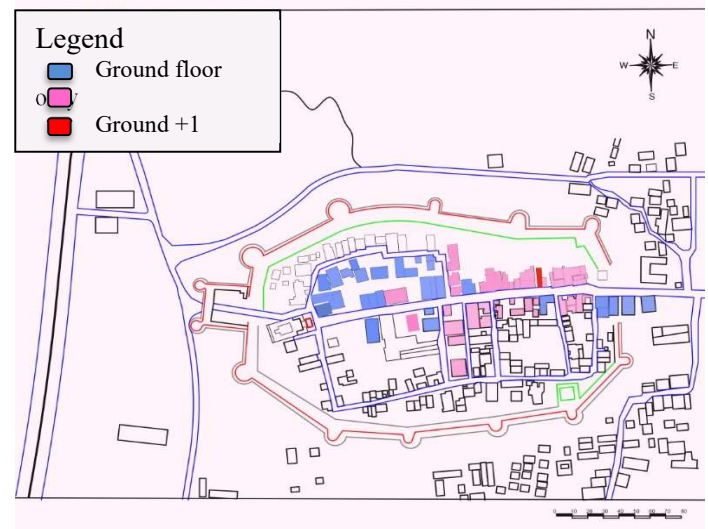

Figure 11 Building-height Map of study area

2 storeys which is not beyond the height of the temple tower or displacing its significance.

The degree of evolution of the study area is depicted through the map (Fig.12). It is observed that, as we progress towards the inside of the fort, the initial stretch of building possesses a very low
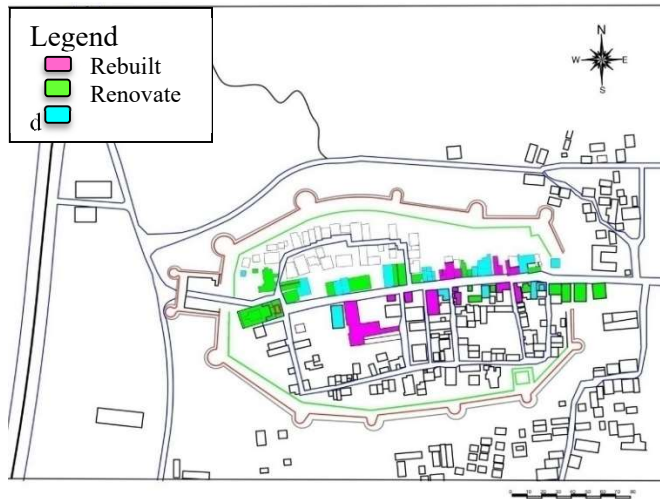
Figure 12 Evolution Map of study area

extent of change, development or alterations. The character of the buildings is found to be maintained in the traditional fabric with the touch of heritage persisting with the presence of columns with an inviting entrance porch, overhangs and the repetitive use of bricks. Proceeding further into the street some buildings were found to have undergone a small amount of transformation visible through the evolved use of materials. After

Figure 13 Street elevation 1

Figure 14 Street elevation 2

an interval of a couple of meters, the monotony of the traditional houses is broken by the line of highly developed buildings portraying modern use of materials, cladding of walls, modern materials and techniques with pleasing aesthetics. This set of buildings started dominating over the place leaving behind only a minority of them retaining its original state as a result of the impact of urbanization.

3.1 Traditional Remains:

Devanahalli fort is a human fort, human war formation, encampment often resembled the fort with linear settlement pattern guided by the main arterial road (*Harshal R et al, 2017*). The arterial road runs between the gateways, this road is bent to join the temple square and continues towards the western gateway (which is not in existence currently). The fort is located next to devanahalli Kere, the lake that served the traditional settlement. This settlement is fortified by the fort wall and the gateways on the east and west end. The fort settlement is traditionally seemed to be made of mud as building material, cob walled house remains in the fort area is the evidence for the same. The fort wall is enforced with stone masonry during Mughal invasion, to show their

Figure 15 Fort Wall (The RAMPART)

Figure 16 Entrance Gateway with Mughal influences

supremacy.

Figure 17 Rampart details

The fort wall and Gateway has the Mughal influences in terms of its detailing (Fig 16&17), its details are vandalized and not maintained properly. The Fort wall or the rampart has two levels (Fig.15), one is for Cavalry and other is for Army. The rampart has high parapets, gallery ways and loopholes (Fig.17) for security purposes, it also has projections at intervals (bastions). The Venugopal Swamy temple is the oldest remain, other temples in the locality are renovated or new additions.

4. House of Devanahalli

Devanahalli fort area is unique since it is fortified, and the setting of these houses remains constant for

Figure 18 Diwan's House

study. The Devan's House (Fig.18) is the larger quarter with other smaller quarters and Agraharam houses for priest's family who serve the temples in the complex. It is useful to examine the mechanism by which a link between the lifestyle and built form is achieved in vernacular architecture.
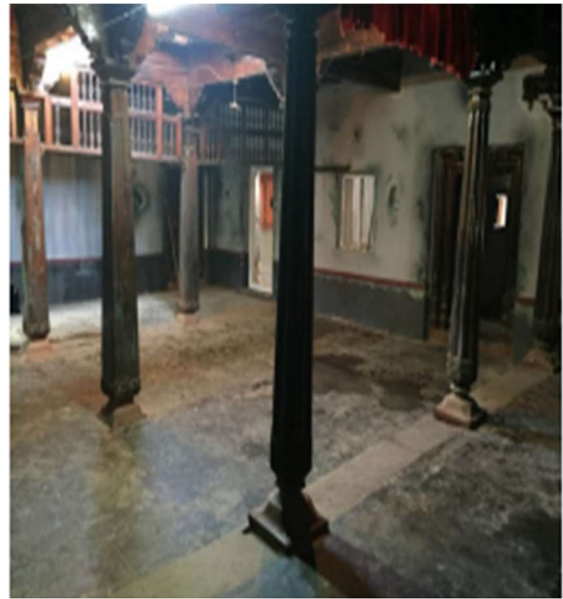
Figure 19 Courtyard space

The social environment shapes the typology of these house. The houses sit in a narrow lane with a Jaggali (a front porch that is elevated for sitting and conversing with people walking on the street at eye level).

The plan of the houses is modest with the central largest room higher to bring in light and ventilation, in a site, which is very tight and has no chance of having openings on both the sides. The typology characterizes outer and inner living spaces, which gives hierarchy to the use of spaces by guests and inhabitants, which is evolved in relationship with social life of the people. Some of the houses, including Diwans house have courtyard (Fig.19) and invert looking spaces, which is necessary to suit the climate and its location. These houses have typically ground+1 structure. Like the present tight urban context, this fort settlement also has shared wall system among the adjacent houses (row houses) and there is no possibility to get light from the sides but raising the inner spaces and providing ventilators have arrived at the solution. A court surrounded by rooms is found in these houses like in most tropical regions. It serves to provide, light, ventilation and privacy in an inward-looking plan, while doubling up as circulation space.

The plan of the other houses is modest with the central largest room higher to bring in light and ventilation, in a site, which is very tight and has no chance of having openings on both the sides. The typology characterizes outer and inner living spaces, which gives hierarchy to the use of spaces by guests and inhabitants, which is evolved in relationship with social life of the people.

The typical (ground floor) house (Fig.20) layout consisted of courtyard space with water facility, surrounded by the interior spaces/ rooms. These types of houses are also based on wall sharing concept. These courtyards acted as a space to accommodates their socializing and mundane activities. The rooms will give the privacy for them and the ventilation is borrowed from the courtyard.

Figure 20 Ground floor only houses

Figure 21 Typical Agraharam house interior

TheAgraharam houses (Fig. 21) had the front courtyard followed by the dwelling area. This courtyard is walled all three sides (out of which 2 sides are shared walls) and open to dwelling units on one side, which starts with jaggali and verandah. This courtyard acted as an activity area and the guests and outsiders are restricted till this area. Access to dwelling units are restricted.

Figure 22 Bamboo ceiling

Most of the roof structures of ground floor only houses are built with locally available granite, thatch and bamboo layered from top (terrace) to bottom (ceiling) (Fig.22) respectively. Most traditional houses used wood as beams, some of them used metal I sections as the beam to hold the roofs. Ground + 1 storey houses had parts of roof are madras terraces, which as the name suggests, belongs to madras presidency area. The technique involves roofing with bricks, terracotta tiles and lime primarily. This kind of roof is tangled to local skilled labor, materials and some binders, which were made with local edible ingredients, namely jaggery, haritaki, etc.,

The flooring is red oxide with simple patterns to give uniqueness some make Rangoli art in the center of the living with oil paint, traditionally it was made with Rangoli powder or rice paste/ flour. The concept is to feed insects while decorating the space.

All the wall of the traditional houses was thicker than the current day brick wall, as they were load bearing structures.

The houses with only ground floor had thick mud walls (Fig. 23), which maintained the microclimate of the house well. These kinds of house are the most sustainable houses which is sustaining for about 100 years now.

Figure 23 Mud Wall

4.Discussion:

As the heritage of the fort is in dire need of preservation, a step towards treasuring its value and a bunch of proposals to elevate its span of existence becomes integral. The existing spaces possessing a traditional character can be highlighted by adding urban elements which makes the place more significant. The space abutting the fort wall can be treated by adding lamp posts and seating arrangements, when and wherever required, across the street stretch, implementing the existing use of materials in various other different ways to create a

timeless feel. As the fort falls on the way to the airport, the rural traditional spots can be used as relaxing places of halting or sources of gaining knowledge about the heritage and the history of the fort and the local history of Bangalore. A pathway can be created for introducing a heritage walk for tourists across the fort wall, overlooking the inside. Railings can be added to enforce safety of the tourists along the stairs and heritage walk area. The ruined western gateway and the adjoining wall can be preserved in its state and the steps to reach the wall can be added with railing. The central spine can be enforced with several façade treatments and reducing the usage of glass and steel or other modern materials in order to maintain the traditional character of the street and to give vernacular feel to the visitors. Amidst urbanization, these houses are sustainable dwelling units which stands as a live model for best vernacular and bioclimatic architecture prevailing in the suburbs of Bangalore. They also speak the local history of the place and its ancient culture and lifestyle. It is very important to conserve/preserve these units and give an adaptive reuse to these units and keep it as a live model or exhibit for future generation. Utilization of heritage structures to bridge the current trends and heritage is a healthy practice, activities like exhibition area, an art gallery with photographic archive of Devanahalli transformation and history in combination with the temple visits will attract tourist around. The stretch containing the Agrahara houses can be utilized to exhibit traditional remains of buildings, display of vessels, and exhibits of paintings, elements and sculptures narrating the culture and the immemorial tales of the place. The total revenue generated can be used for maintenance of the fort. While taking steps towards preserving the fort, care should be taken so that the Indo-Saracenic tint of the place should not diminish. Devanahalli, being the forefront of the local history of Bangalore withholding within it a huge amount of heritage, tradition and culture, if not preserved well, will lead to the complete decline and wash out of the tiny amount of heritage left as a result of the surrounding walls of the fort which are currently acting as a protecting barrier.

Acknowledgement:

5. Conclusion:

Precisely, this paper attempts to evidence the significance of the Fort complex and its architectural importance.

Initially, it portrayed the effects of urbanization and developments/evolution caused because of it. It is an essentially manifestation of urban sprawl, but it is significant to document and preserve the heritage value of the place and to pass on to the next generation. Being a responsible citizen and architect of India, it is vital to conserve its historic values and importance. Thus, we recommend taking it forward with our proposals. This destination will become reputed and holds good for short visit to know about Bangalore/ local history to spend the airport waiting time effective, as it is located close to Kempegowda International Airport.

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