

Demonstrating timelessness of vernacular settlement of Tattakodi: by drawing parallels from early human settlements of the river valley civilization

Neha Korde

Assistant Professor at School of Planning and Architecture, New Delhi
Email: neha.korde@spa.ac.in,

Dr. Amit Kumar Jaglan

Assistant Professor at School of Planning and Architecture, New Delhi
Email: footprint1109@gmail.com,

Shalini Shoeran

Assistant Professor at Department of Planning and Architecture, PLCSUPVA, Haryana
Email: shalinisfpa@plcsupva.ac.in

Prachi Patel

Assistant Professor at Institute of Architecture and Planning, Nirma University, Ahmedabad
Email: prachi.patel@nirmauni.ac.in

Abstract

The UNESCO World Heritage site at Badami Caves in the Karnataka region of India is well known for its predominant cave temple architecture demonstrating Hindu and Jain styles. Tattakodi is a small settlement situated at the edge of Badami, with a population of up to 300 inhabitants living in around 100 houses. This minuscule settlement came into existence around the 1800s and was established in the last three generations. The presence of Agastya Lake, around the settlement makes it relevant to many such river valley civilizations in prehistoric times and global history. The settlement of Tattakodi has strong traditional, cultural, and architectural values, yet remains unexplored. The parameters like the scale of the settlement, the physical construct of the site, and culturally driven living patterns of the community draw attention to study and analyze the early settlement of Çatal Hüyük in Southern Turkey ca. 6900-5400 BCE. The settlement is driven by the concept of self-sustainability through the use of local building materials and construction techniques to build houses having stronger socio-cultural relevance. This research is an attempt to explore the idea of commons and uncommon in terms of tangible v/s intangible parameters to explore the idea of multiplicity as well as the temporality in these two cases from history. Hence, it adopts a qualitative method to analyse the primary data documented for the Tattakodi settlement (academic exercise) whereas it relies upon secondary data for studying Çatal Hüyük from the archives.

The paper aims to illustrate traditional building methods and vernacular elements by drawing three constants of time, scale, and context that contributed towards shaping the current state of the settlement in Tattakodi and identifying their resemblance to that of the River Valley Civilization. It traces the "traditionality" emphasizing the timeless characteristics contributing towards holistic living which is extremely relevant even today.

Keywords: India, Çatal Hüyük, Traditionality, Vernacular Settlement, Timelessness, Multiplicity.

1. Introduction

Recent decades have seen a marked rise in interest in traditional architecture and city planning, spurred on by a number of factors that will be covered in more detail below, but a few key points are made here. Despite the semantic differences between the two, phrases like traditional and vernacular architecture will be used synonymously in this article to refer to all associated styles of architecture. The term "vernacular" will be used in reference to the writings of philosopher and historian Ivan Illich, who covered this issue in the 1970s and 1980s. According to Illich, the term "vernacular" has its roots in an Indo-Germanic word that means "rootedness" and "abode" and was originally used for informal trade of goods like home-baked goods and handicrafts rather than official transactions (Illich & Brown, 2013). During the 19th century, anthropology developed into a brand-new academic field, which in turn sparked an interest in traditional/vernacular architecture. The findings of this early anthropological interest are well captured in L. H. Morgan's research (Morgan, 1966). Europe, Egypt, and Anatolia are only a few of the cultures that are highlighted in architectural history as it is taught in the West. However, these regions were well-known in the second century A.D. (Bernard Rudofsky, 1964); (Shannon et al., 2014). The statement was made at the right moment because Western architectural history was first Eurocentric, emphasising Western/European heritage and continental legacy, which led to the idea that traditional buildings were unsophisticated or subpar to Western design. The programme demonstrates the possibility for learning from architecture by showcasing untrained builders who succeed at integrating their structures into natural environments, accepting the whims of climate and geography, rather than striving to dominate nature as we do (Bernard Rudofsky, 1964).

People build traditional vernacular villages based on the wisdom, knowledge, and customs that have been handed down through the years. In order to maintain long-term sustainability, sustainable settlements are flexible enough to adapt to their local geography, society, and environment. They also make use of readily accessible resources and technology and hire local labour. Even before the term "sustainability" was invented, traditional vernacular towns had certain qualities, although current discussions are more concerned with the development of new technologies than with these settlements' long-standing customs. Ironically, there is a paucity of creative knowledge on how to use traditional settlements for sustainable development. By integrating traditional practices into the creation and upkeep of contemporary communities, vernacular villages can be transformed into contemporary settlements. Many people on Earth still live in traditional communities, which may teach new and existing communities important lessons about how to survive in the face of modernisation (Dayaratne, 2018).

In this context, in November 2019, students of Pillai College of Architecture, India (PiCA) (affiliated with Mumbai University) were taken to visit Hampi, Badami in Karnataka region of India to study the vernacular settlements as the thematic focus in Architectural Design Studio conducted in Semester IV (2019-20). The Measured Drawing activity took place through personal close observations that are supported by documented evidence and demonstrates their validity, appropriateness for contemporary planning practice and learning the process of documentation. The drawings were digitized in the next year as our entry for the Students' Awards for Excellence in Documentation of Architectural Heritage 2020 (Category C: Indigenous Dwellings), initiated by the Council of Architecture (COA). This work of documentation

is the main pivot for this research with the recent observations and real-time experience of the settlement. Simultaneously, many such parallels are identified in the early river valley civilizations while teaching and learning experience in History of Architecture. *This research examines the parallels between two cases which are selected consciously, to highlight commons as well as uncommon based on three constant factors identified; the timeline, the scale of the settlement, the natural (physical) construct of the site shaping the cultural practices in the community living.* The paper aims to uncover the principles of the most meaningful cultural practices which are unconsciously constant throughout the time and are relevant even today. This study finally offers several propositions that can align with Space, Time and Architecture that may redirect the present state of our culture and planning practices to find a way out of the apparent chaos of its contradictory tendencies.

2. Research Methodology

2.1. Parallels Between the Archaeological Site at Catal Hüyük, Turkey and The Informal Vernacular Settlement Near the Badami Caves, Karnataka India

The emergence of new situations can be traced from the early settlements of Neolithic age to the followed in the River Valley Civilizations such as Khirokitia in Cyprus (4000 - 2500 BCE) (World Heritage Convention, 2010), Catal Hüyük in Turkey, and Jericho towards Israel (7400 - 3500 BCE) formed on the banks of the river Tigris and Euphrates (Hamm et al., 2016). This age was mainly characterized by the rich climatic conditions, cooler atmosphere, and abundance of flora and fauna; hence the agricultural practices were trailed by the domestication of animals. The topographical form of the valley gave rise to a network of villages that formed in the highlands through the simultaneous transformation of these valleys into one of the most productive grain-bearing regions then (Nadhir, 2018). Due to this natural hierarchy, the population mainly used to work in the valley and lived in the fortifiable hills around. The living pattern saw contrasting economic orientations such as the agricultural practices downhill with the vast field of grains, and on the other hand, the mines of metals like gold and copper were formed uphill. One of the distinct features of this time is the absence of any common communal sacred space or any religious activity in the settlement; instead, each house had its own shrine with a wall decorated (Bocquet-Appel & Bar-Yosef, 2008). Hence, one can argue that the idea of “living” was limited to the “house” which was seen as the only building typology present at that time (El-Fadel et al., 2002).

The cultural practices revolved around the principal deity as the mother Goddess and the arts such as wall paintings, sculptures in terracotta, and interiors decorated with murals depicting animals and hunting scenes. Therefore, the “house” is being taken the case as the foundation of this research paper and identifies the commons and uncommon between two distinct settlements in time, Catal Hüyük in Turkey and the small settlement at the bottom of the World UNESCO Heritage site of Badami caves near Hampi in Karnataka, in southern India (Varghese, 2020). Situated outside Badami, Tattakodi is a small settlement with a population of not more than 300 people. It is about 1.2 kilometers away from Badami caves and has the Bhootnath Temple right across the settlement. Unlike the river valley civilizations, the village is surrounded by these temples as major community spaces facilitating the population of around 98-97 houses, most of them 70-120 years old came into existence in the 18th Century CE (Jafa, 2014). A network of internal roads and lanes connect the school and a small temple (built by the villagers) at the entrance of the village, which acts as central congregational

spaces for community gatherings and festival celebrations. Whereas, the presence of Agastya Lake, the population density & the urban morphology of the settlement, and the physical (topographic) construct of the location can be distinguished as some of the common features between these two cases. The majority population in the settlement is Hindu, whereas the Muslims live near a small masjid along the tertiary road in the village. With the changing time today, the population in the village has adopted occupations such as civil work, teaching, tourist guiding, and housework apart from the farming facilitated by two farmlands located outside the settlement (Rao, 2010). About 45% of the village's middle-aged workers are involved in farming and civil work as their primary source of income. Out of the total population, 55% are females whereas 45% are males. Most of the women are home-makers and some practice farming, teaching, and tailoring. The other 45% percentage consists of senior citizens or children. Due to the insufficient employment opportunities, the youth of the village migrate to the cities to earn a living.

2.2. Identifying Parameters for the Commons and Uncommon

Three predominant factors which lead us to choose these two case studies of Catal Hüyük and Tattakodi are; the timeline, the scale of the settlement, the natural (physical) construct of the site, shaping the culturally driven living patterns of the community living. A few more lenses are being identified to strengthen the study and to analyze the commons and uncommon of these settlements as Urban morphology and guiding principles of Town planning through, Architectural elements and characteristics, building materials and construction techniques, Spatial elements and character of interior v/s exterior spaces of "House" as a typical module for comparative analysis (mentioned above). Also, Cultural practices through, Religious, traditional and/or ritualistic practices, Art and craft practices, Trade, occupational hierarchy and economic growth. Based on these parameters, a set of observations; "commons and uncommon" are drawn and the idea of the "constant" is being further explored, debated with the help of literature study to conclude the research.

2.1. The Three Constants: Time, Scale & The Context

A cultural kind of architecture known as vernacular is directly related to geography, time, and materials. It represents the way of life in a particular region. Residential architecture is an important component of this design, which adjusts to social and environmental restrictions (ICOMOS, 1999). In architecture, the word "continuity" has two levels of meaning and refers to anything continuing to function through time and space as shown in Figure 1(a) and 1(b). The first layer emphasises an object's preservation in the objective spatial environment and focuses on its preservation, upkeep, or protection. The persistence of objects—in particular, houses - as they alter across time, space, and in response to human activity is the subject of the second layer (Oliver Paul, 2006).



Figure 1(a): Catal Hüyük: Site layout and the housing typology at micro scale

Source: 2010. A Global History of Architecture, by Francis D. Ching, Mark Jarzombek, Vikramaditya Prakash, John Wiley & Sons (2011), p.14, 15.

Figure 1(b): Tattakodi: Site layout

Source: Measured Drawing produced by student tour documentation at Hampi-Badami.

Catal Hüyük in central Anatolia lies approximately 51 KM south-cast of Konya in Southern Turkey, dates back as far as 7400 BCE (Joan, 2018). By the third millennium the population ranged from 300 to 600 inhabitants in the beginning, and stretched to 8000 inhabitants in the span of nearly a few thousand years. The ancient site lies on the Anatolian plateau, approximately 3000 feet above the sea-level and is situated in the center of abundant wheat lands. It is located in the center of a large valley and next to a river that fed into a nearby lake. The great double mound of the Catal Hüyük, was built on an old branch of the river in the village nearby. The World UNESCO Heritage site, Badami, home of the earliest dated caves in the Indian subcontinent is an ancient prosperous kingdom of the Chalukya dynasty in Bagalkot district, in the southern Indian state of Karnataka. The village of Tattakodi sits on the opposite and at the banks of Agastya Lake witnessing the Badami Caves, disconnected and far away from the urban fabric of the city. There is a primary asphalt road that connects the village to the outside of the cave complex. This road runs parallel to the Agastya Lake and converges at the main cave entrances to join the primary road. The village consists of approximately 98-97 houses sheltering a population of 400 to 500 inhabitants. It has a mix of housing typologies which were initially built in the 18th Century, and gradually the settlement expanded in the century until 1940-50s. There are four historical temples situated in the Badami village out of which three are Hindu temple caves and one is a Jain temple, all of which were built after the 6th Century CE and situated on the banks of Lake Agastya. Badami fort is situated on Badami Mountains having the ancient temple of Shiva, Malegatti Pagoda. On the edge of the lake facing west is the Bhootanath Temple, dedicated to Lord Shiva.

2.2. Catal Hüyük, Turkey: Urban Morphology and Guiding Principles of Town Planning

Catal Hüyük is one of the first examples of human civilization in the Neolithic period portraying man's urban life. It occupies a midway position in the emergence of civilized man in the hierarchy of social development. The Neolithic remains at the site have generated the remains of twelve successive building levels which represent twelve different cities, not phases or repairs of single buildings. These different cities evolved gradually throughout a few thousand years and not in a single timeframe (Mellaart James, 1967). The city consisted of rectangular flat-roofed houses closely packed into a single built mass with no streets or passageways to access the individual housing units. These units were without any doorways indicating the inhabitants moved across rooftops and entered their homes through the roofs via ladders.

2.2.1. Architecture

The typical housing unit consisted of one primary large room connected to secondary rooms such as storage rooms and a kitchen at the end of the house. There is no direct evidence for the existence of the second story of light materials or a partial second story such as a mezzanine, or a verandah with columns. In some of the units, there were shafts and the entrance holes in the roof were added along the south wall (Figure 2 (a,b,c)).

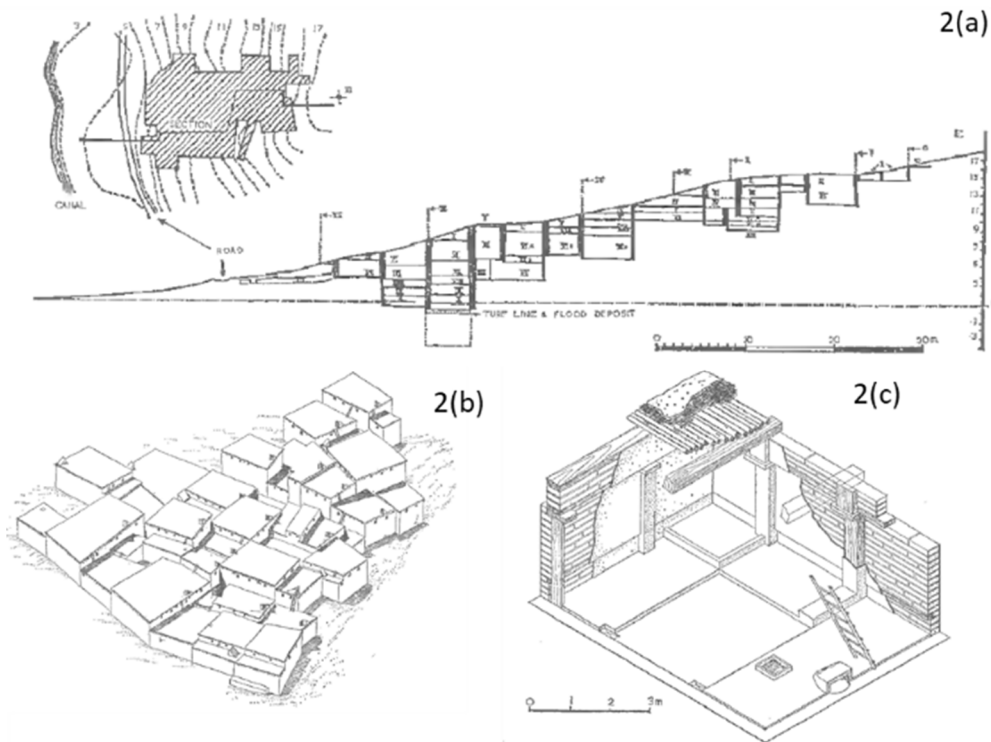


Figure 2(a): Plan and Section of Catal Hüyük showing the shifting pattern of excavated area
Figure 2(b): Schematic partial reconstruction of the housing units showing roof levels and rising terraces above each others,
Figure 2(c): Diagrammatic view of a typical main room showing timber framework and panelling, platforms, bench, hearth, oven and ladder
Source: 2010, Mellaart James. (1967) Catal Hüyük, A Neolithic Town of Anatolia. McGraw-Hill, Thames and Hudson L,t.d., p. 50.

Entry through the roof is one of the most characteristic features of all buildings at Catal Hüyük, without having any other access to houses and shrines located inside. But the secondary room such as storage, entry passages, or light shafts is entered from the main large room through low open doorways, square, rectangular, or oval in shape. The ladder leads to the hole on the roof which is also used to escape the smoke out from the hearth, oven, and lamps. For this reason, the kitchen end of the house, where the hearth and oven are situated along the south wall, is set partially into the wall. Near the oven, there is a deep but low recess used for the storage of fuel like wood, brush, or straw. The hearth is rectangular or square in the lower levels but always raised and provided with a curb to prevent spilling, and it is unusual to locate more than one hearth in each room, and the kitchen part occupied one-third of the available space. There was a system of bringing light into the interiors of these buildings other than that of a few stone lamps. By stepping on the roofs, light could be brought into the rooms through a series of small windows set high up below the eaves. Also, the holes in the roofs act both for ventilation in the kitchen area and the skylight as a source of light (Mellaart James, 1967).

2.2.2. Material and construction techniques

Each building had its walls and was hemmed in by others, a method of construction with more stability to the building than they would have had if free-standing. The main construction material used in the housing unit was sun dried mud bricks reinforced by massive timber framework, Oak posts. This is another distinct feature of Catal Hüyük, the use of the timber frame in construction accounts for the characteristic paneling of the walls which is further emphasized further by the use of red paint. Three panels in these super-imposed rows with the middle one at least twice as high as the other two are used for decorating interior space such as relief or wall paintings. Ornamentation was used on the lowermost panel, varying in height above the main platform in the room. The inhabitants were careful to re-plaster their units periodically, both inside and outside, a routine which materially contributes to the longer life of the mud brick for keeping out damp and rain. There are no traces suggesting the use of stone is found on the excavations except the artefacts found in the burials.

2.2.3. Tattakodi, Karnataka - India

The tiny village of Tattakodi lies close to the UNESCO World Heritage site of Badami caves having strong traditional, socio-cultural values; but yet remains unexplored (Chaitanya, 2020). The four rock-cut caves of Badami are magnificently carved out of red sandstone, setting an excellent example of craftsmanship of the era. The Agastya Lake is approximately 12 acres in size adjacent to the village. The settlement is said to be built on the plinth of the original town of Vatapi and surrounded by the hills towards the North and South having the Chalukyan Fort (Figure 3(a,b)).

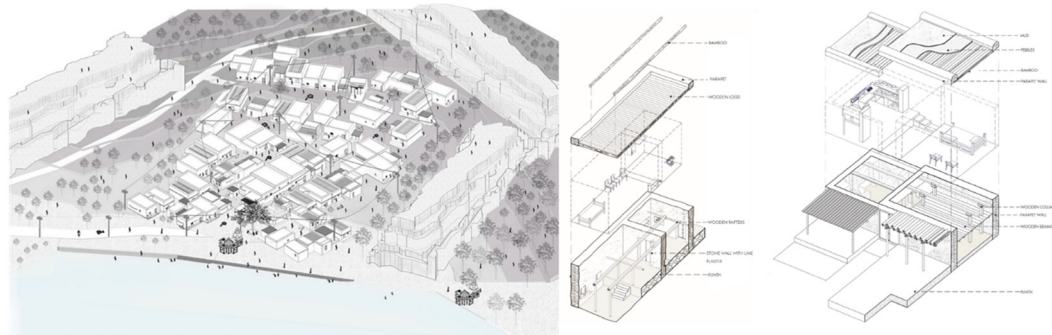


Figure 3(a): Diagrammatic view to the village of Tattakodi form the hill

Figure 3(b): Exploded view of two disserent houses in Tattakodi

The settlement has preserved its authentic indigenous character in terms of adaptation of local building materials and construction methods with climate-responsive strategies. The main objectives for the documentation at Tattakodi village were identified to understand and analyze the physical setup of the settlement, to study the spatial arrangement of the building units, to understand and analyze the socio-cultural aspects of the settlement and to document and analyze the vernacular nature of streets of housing concerning material and construction techniques exploring sociocultural aspects.

3. Architecture of Tattakodi, Karnataka

The village sits on a plinth, gradually sloping towards the Agastya Lake facing the caves resulting in an uneven topography. Primary access runs parallel to the water edge and the main entry to the village diverges into two major lanes. The presence of two temples and two schools at the main entrance of the village facing the lake signifies the active community engagement in the courtyard formed in between. Though the settlement has grown haphazardly in the North-South direction as the population increased throughout these years, still the village exhibits certain planning to an extent. The slope in the site has caused the overlapping of many houses (similar to that of Catal Hüyük) having more than one entrance or having no windows due to lack of passageway. There are five house typologies which have been identified varied in scale in terms of its built-up area of the number of family members inhabiting. The smaller houses are placed on the western edge towards the fort wall, whereas the bigger houses are placed in the center of the settlement. A typical smaller house is of the outer dimensions of 4.2m X 10.6m, consisting of a living room at the lowest level, followed by a bedroom and the kitchen in the end in a single bay. An unidentified bathing area is positioned near the kitchen with a sunk for draining the water out within the small house. The difference in levels from the exterior to the interior space defines the different hierarchy of functions having a different character in each space. Niches punctured onto the wall create storage spaces within the houses to keep the object safe. Small and narrow window openings respond to the humid climate keeping the interiors of the house cooler (Figure 4 (a,b)). Skylights are provided on the rooftop allowing the light inside. Vibrant wooden doors with intricate detail are one of the striking elevational features of these houses. An exterior staircase is provided to access the rooftop, constructed out of stone and inserted into the wall, projecting outwards. Comparatively bigger houses placed in the center also have built the shed for animals.



Figure 4 (a): View of the village from top of the hill, also showing the skylights of the houses from the to,

Figure 4 (b): Interior and exterior quality of space.

All the houses have a veranda or an “Otta” accompanying the courtyard of the house. These are used by the locals as gathering spaces in the daytime. Naga statues are placed outside many house Ottas (raised platforms at the entrance) and daily rituals are performed by the local population. In addition to that Tulsī Kund is placed in front of the house - considered to

be auspicious. The transition of spaces can be experienced adding to the indigenous character of these houses.

3.1. Building material and construction techniques in Tattakodi, Karnataka

The vernacular construction techniques used by the villagers are compliant with the climatic response of the Badami region. The traditional and vernacular ways of thatched roofs, rafters, and mud walls are predominant in the locality. Mud house construction, the oldest approach to building walls in India, is widely used in this region. Base structures made of stone and brick walls are plastered with a mixture of sand and mud to maintain integrity. The use of Bamboo for the reinforcement is seen prominently as the major framework for stability. The majority of the houses in Tattakodi follow mud house construction practices whereas some houses belonging to the wealthier class of the village have multi-storey Reinforced Cement Concrete (RCC) and cement construction now. These mud houses are primarily coated with white paint to deflect the harsh sunlight that Badami suffers from. The roofs are thatched with grass and a tarpaulin sheet with wooden logs as rafters for support and reinforcement. Today, a few of these traditional houses are slowly being replaced by RCC construction due to rapid urbanization. Although the number of multi-story buildings remains far less than the number of single-story buildings.

3.2. Cultural Practices of Catal Hüyük, Turkey

One of the most striking characteristics of Catal Hüyük is that a portion of the dead from the settlement were buried below floors and platforms inside the houses. The number of on-mound, beneath house floor burials, matches the population estimated for Çatalhöyük and it seems that the entire population was buried at the site. Some houses were used as 'ancestral' burial locations where people were preferentially buried. Walls were plastered, and many were decorated with spectacular hunting scenes, textile patterns, or landscapes. There were raised platforms on three sides of the room for sleeping and other activities. The horns of animals, especially cattle, were mounted on walls. When a house was unoccupied in case a family died out, its house was abandoned for a period of time, leaving gaps in the urban fabric, until eventually the space was reclaimed. Many remarkably furnished shrines and macabre artistry reflect an involved and wildly imaginative religion. The excavations at Catal Hüyük have revealed a rich corpus of paintings, reliefs, and installations. Remarkable discoveries of bull horns attached to plastered bull skulls (bucrania), plaster reliefs, and wonderful paintings, both non-figurative and with complex narrative content have been made at the site. Animals clearly had an important symbolic role at Çatalhöyük and are central to the art found in the settlement. The narrative paintings at the site mainly show dangerous or flesh-eating wild animals and birds. Humans are depicted as teasing, baiting, and dominating oversized bulls and other wild animals. Mellaart's excavations uncovered a number of relief sculptures, figures modeled in clay on the walls. These include modeled heads of cattle and other animals, as well as many representations of the entire body of animal figures. Catal Hüyük lies at the center of the metal trade. Metal objects found there are among the oldest known examples in the Near East. Other local commodities were traded in particular volcanic glass, known as obsidian, which was used for decoration and as barter. Traces of a flourishing economy testify to advanced practices in agriculture and stockbreeding, and remains of no-native goods indicate a sophisticated trade in new

materials. Catal Hüyük was a unique community and remains a notable example of the single-mindedness and diversity of civilization.

3.3. Tattakodi, Karnataka - India

The compact planning of houses increases the social interaction and the capacity to absorb the least amount of heat. To date, most of the villagers paint and maintain their houses by themselves. The Hanuman temple which is the only temple in the village was built by the villagers 15 years ago. The villagers have a Gramdevta (God worshipped by the community), Naaga. Naaga is worshipped outside on the unique verandas along with other deities. The sanctum-sanctorum which is primarily seen inside the Indian household is kept outside the house here in Tattakodi. The people of this settlement have their empirically evolved ways of mediating the relationships between the built and the surrounding. Exploring the street as one of the major social and public spaces is a distinct feature of the village. The clear physical boundary between interior and exterior yet highlights the grey spaces of transition. Defined segregation of private and public space/place is being seen in Tattakodi unlike that of Catal Hüyük where the interior space of the house is being explored to its maximum potential but the cutting of the "public" intervention in their own space (Figure 5).

4. Reuse of Abandoned Vernacular Buildings

As long as sufficient care is achieved, repurposing empty vernacular buildings for new uses is a sustainable conservation technique (Fuentes et al., 2010); (Günçe & Misirlisoy, 2019). Since ancient times, people have been reusing abandoned structures, first motivated by economics and practicality. However, the 19th century saw the introduction of the term "heritage," which transformed historic structures into a storehouse of both tangible and intangible treasures. This required striking a compromise between commercial concerns, aesthetic considerations, and the preservation of architectural details. As a result, the academic area of adaptive reuse of traditional structures has evolved to include specialists from many other disciplines, including architecture, archaeology, urban planning, engineering, and interior design (Plevoets & Sowińska-Heim, 2018). There is a lengthy procedure involved in reusing vernacular structures that includes many parties. While contractors and developers may place a higher priority on cost-cutting and comfort, municipal architects must guarantee that laws are obeyed and authenticity is maintained. Numerous elements must be taken into account in order to make a well-informed conclusion. Based on a number of weighted factors, multicriteria decision-making (MCDM) systems can determine if a building is suitable for new purposes without losing its original character (Šiožinytė et al., 2014). Finding the best theories for the adaptive reuse of vernacular structures was accomplished with the use of the Analytic Hierarchy Process (AHP), a technique for organising and analysing complicated choices (Russo et al., 2013). Garca and Ayuga draw attention to the many advantages of renovating abandoned vernacular buildings in rural areas, including cost and energy savings, job creation, promotion of cultural tourism, preservation of ethno-cultural resources, recovery of traditional construction methods, community awareness, and a more appealing perception of villages and rural landscapes (A. I. García & F. Ayuga, 2007). According to Verhoeve et al., the covert re-use of rural structures for non-agricultural purposes in peri-urban or tourist regions may result in a loss of agricultural character and should be legally defined and monitored. They are in favour of the creation of conversion scheme design

principles, but they worry that limiting rules would cause owners to lose interest and the preservation of the historical environment to suffer (Verhoeve et al., 2012).



Figure 5. Displaying the street character being interactive and transitional space for villagers, Street 01

Figure 5: Displaying the street character being interactive and transitional space for villagers, street 01.

5. Findings and discussion

Space, Time and Architecture is intended for those who are alarmed by the present state of our culture and anxious to find a way out of the apparent chaos of its contradictory tendencies. So wrote the Swiss Modernist Sigfried Giedion (1941, p.vi) introducing the first edition of his pioneering and influential history to the background and cultural context in which modern architecture and urban planning grew and flourished. Author *Mc Gill* stated, "History is not a compilation of facts, but an insight into a moving process of life." The fresh lens of documentation through measured drawing activity and constantly discovering through the excavations of archeological sites worldwide, keep highlighting intricate aspects of human civilization throughout the time which also helps us to build up the body of knowledge towards understanding the History and enhancing the learning through it every day. The two cases chosen consciously allowed playing with the universal constant of "Time". And, surprisingly realizes its irrelevance in terms of the key parameters identified for a superior lifestyle shaped by a designed, well-equipped, and growing city as a place of tremendous potential and prospects. Despite spanning approximately 8750 years, both cases of Catal Hüyük and Tattakodi village display stronger gradients of "commons" which can also

be underlined a *tangible factors* defining the urban morphology of both the settlements. The commons are the architecture of the settlement, the principles of Town planning, and Building materials and construction techniques in both cases. Whereas the “*uncommon*” underline the *intangibles* through diverse and much developed cultural values constructed from religious, traditional, and ritualistic practices in time. Such factors identified are, the spatial character of the “House” as the only building typology, the utilitarian nature and multiplicity of interior and exterior spaces, and the role of art and crafts depicting the symbolic as well as the literal meaning of life. In the absence of any community spaces, the introverted lifestyle in Catal Hüyük in contrast to that of the social character of Tattakodi village highlights the changing patterns of lifestyle apprehending the importance of community living, the functional hierarchy of these communal spaces highlighting their inevitable presence in the evolution of the city (e.g. granaries in Catal Hüyük or the temple and school in Tattakodi), and also the need of seeking safety at large. Giedian’s “insight into a moving process of life’ can still be witnessed largely here through both the cases at Catal Hüyük and that of Tattakodi. On the contrary, the influence of the external factors like climatic cycle, domestication of animals & plants, and economic growth through occupational diversity fluctuate in time with the constant discovery and emergence of trade. Hence, it is evident that the degree of constancy is dependent upon all three factors of time, changing scale, and the site context; but the core guiding factor of bare minimum prerequisites of mankind to live with these conditions is vital and intangible. It also reflects the idea of multiplicity in terms of the utilitarian nature of the interior v/s exterior of the living spaces at the scale of a “house”, the hierarchy of the family structure (social) inhabiting these houses, their cultural practices, and arts & crafts as one of the major guiding tools enhancing their lifestyle. Morphologically, the mutual relationship between the evolution of a house as a building typology, its mutable nature in time, and the idea of a communal space play an important role to define the multiplicity as well as the temporality at the larger scale of the settlement.

6. Limitations of the study and scope for future work

1. This study looks at three rural communities in India that move between three different temperature zones and have distinctive vernacular architecture. In order to better understand transitions and their effects on resource and energy requirements as well as climate change susceptibility, the authors chose these settlements to represent each climatic zone. The research, which lasted for more than a year in each community, was a step in the right direction and a methodological advancement for similar investigations. Due to the mix of traditional and contemporary homes as well as those in transition, choosing settlements proved difficult. In order to discover suitable treatments and mitigation strategies in response to climate change, expanding the study to include India's different habitations will necessitate networking with regional academic institutions, a bigger group, and more time.

2. In order to identify important stages and implement preventative or adaptive techniques to increase comfort without jeopardising the demands of occupants, it is essential to comprehend the influence of each transition step on a dwelling's thermal performance. The results of future study on individual transitions and their effects on thermal comfort may influence local construction regulations and climate change mitigation measures. Local decentralised circular economies and the revalidation of vernacular construction typologies

might both contribute to a less carbon footprint globally. In the end, both the locals and the ecosystem would gain from this.

3. Understanding how buildings' thermal performance changes in response to a changing environment is the main goal of the study. It draws attention to the increased pain felt by residents as a result of transitions and climate change. According to the research, people in rural areas take initiative to adapt to change. The use of electromechanical window controls, garment alterations, and thermal comfort devices are significant adaptation measures. Future research ought to examine adaptation and mitigation techniques in terms of shape, components, surface treatments, attire, window operation, and occupant utilisation of spaces.

4. Intergenerational attitudes and physiological investigations are necessary to comprehend climate change shifts. The sustainability of human settlements depends on current estimates taking into account thermal comfort responses for the present generation. The most vulnerable populations to climate change by 2050 will be children and young adults. Studies on human exposure to climate fluctuation attempt to provide a causal foundation for predicting, but this is difficult because of racial and physiological disparities.

Acknowledgement

The author would like to thank MES' s Pillai College of Architecture and my colleagues at the institute for having the Study Tour to Hampi - Badami and conducting documentation through onsite Measured Drawing in November 2019. Also, the manifestation of this documentation exercise would have been not possible without the team of students and faculty of Second Year B. Arch. (2019-20) who had extensively worked and digitized all the drawings in the following year. Specifically, assistant professor Tejashree Lakras, Moushumi, Laxmi and students' team Achintya Hrishikesh, Anoushka Shetty, Anuja Kanase, Anju Pillai, Sanket Vaishnav, Amrita Patkar, Dhiraj Narkhede, Nishita Joseph, Rau Tambat, Swapnil Rane and the team spirit of the whole batch of academic year 2019-20.

References

- A. I. García, & F. Ayuga. (2007). Reuse of Abandoned Buildings and the Rural Landscape: The Situation in Spain. *Transactions of the ASABE*, 50(4), 1383–1394. <https://doi.org/10.13031/2013.23627>
- Bernard Rudofsky. (1964). *Architecture Without Architects An Introduction to Non-Pedigreed Architecture Bernard Rudofsky · Divisare*. The Museum of Modern Art: Distributed by Doubleday, Garden City, N.Y. <https://divisare.com/books/117-architecture-without-architects-an-introduction-to-non-pedigreed-architecture-bernard-rudofsky>
- Bocquet-Appel, J. P., & Bar-Yosef, O. (2008). The neolithic demographic transition and its consequences. *The Neolithic Demographic Transition and Its Consequences*, 1–542. <https://doi.org/10.1007/978-1-4020-8539-0/COVER>
- Chaitanya, T. (2020). *Explore Badami Cave Temples: A nod to the era gone by*. <https://housing.com/news/explore-badami-cave-temples-a-nod-to-the-era-gone-by/>

- Dayaratne, R. (2018). Toward sustainable development: Lessons from vernacular settlements of Sri Lanka. *Frontiers of Architectural Research*, 7(3), 334–346. <https://doi.org/10.1016/J.FOAR.2018.04.002>
- El-Fadel, M., Sayegh, Y. El, Ibrahim, A. A., Jamali, D., & El-Fadl, K. (2002). The Euphrates-Tigris Basin: A Case Study in Surface Water Conflict Resolution. *Journal of Natural Resources and Life Sciences Education*, 31(1), 99–110. <https://doi.org/10.2134/JNRLSE.2002.0099>
- Fuentes, J. M., Gallego, E., García, A. I., & Ayuga, F. (2010). New uses for old traditional farm buildings: The case of the underground wine cellars in Spain. *Land Use Policy*, 27(3), 738–748. <https://doi.org/10.1016/J.LANDUSEPOL.2009.10.002>
- Günçe, K., & Misirlisoy, D. (2019). Assessment of Adaptive Reuse Practices through User Experiences: Traditional Houses in the Walled City of Nicosia. *Sustainability* 2019, Vol. 11, Page 540, 11(2), 540. <https://doi.org/10.3390/SU11020540>
- Hamm, G., Mitchell, P., Arnold, L. J., Prideaux, G. J., Questiaux, D., Spooner, N. A., Levchenko, V. A., Foley, E. C., Worthy, T. H., Stephenson, B., Coulthard, V., Coulthard, C., Wilton, S., & Johnston, D. (2016). Cultural innovation and megafauna interaction in the early settlement of arid Australia. *Nature*, 539(7628), 280–297. <https://doi.org/10.1038/NATURE20125>
- ICOMOS. (1999). *Charter of the Built Vernacular Heritage - International Council on Monuments and Sites*. <https://www.icomos.org/en/participer/179-articles-en-francais/ressources/charters-and-standards/164-charter-of-the-built-vernacular-heritage>
- Illich, I., & Brown, J. (2013). *Beyond economics and ecology: the radical thought of Ivan Illich*. Marion Boyars. <https://www.undergroundbooks.net/pages/books/8121/ivan-illich-jerry-brown-sajay-samuel-preface/beyond-economics-and-ecology-the-radical-thought-of-ivan-illich>
- Jafa, N. (2014). *Stones, Stories & Creative Impulses in Aihole, Badami, Pattadakal*. https://www.academia.edu/30504012/Stones_Stories_and_Creative_Impulses_in_Aihole_Badami_Pattadakal
- Joan, E. (2018). 35. 7250-6150, Catal Hüyük, Anatolia (Central Turkey).pdf. *Joan, Eahr Amelia. Re-Genesis Encyclopedia: Synthesis of the Spiritual Dark– Motherline, Integral Research, Labyrinth Learning, and Eco–Thealogy. Part I. Revised Edition II, 2018. CIIS Library Database. (RGS.)*. https://www.academia.edu/36526955/35_7250_6150_Catal_Hu_yu_k_Anatolia_Central_Turkey_pdf
- Mellaart James. (1967). *Representation deer hunting. Catal Hüyük 8500- 7700 BP. (Mellart, 1967). | Download Scientific Diagram*. https://www.researchgate.net/figure/Representation-deer-hunting-Catal-Hüyük-8500-7700-BP-Mellart-1967_fig15_331374323
- Morgan, M. L. H. M. H. (1966). *Book Series: American Beginnings, 1500-1900*. University of Chicago Press. <https://press.uchicago.edu/ucp/books/series/AB.html>
- Nadhir, A. N. ; A.-A. K. S. V. ;Jan L. (2018). (PDF) The Future of the Tigris and Euphrates Water Resources in view of Climate Change. *Journal of Earth Sciences and Geotechnical Engineering*, 8. https://www.researchgate.net/publication/324680990_The_Future_of_the_Tigris_and_Euphrates_Water_Resources_in_view_of_Climate_Change

- Oliver Paul. (2006). *Built to Meet Needs: Cultural Issues in Vernacular Architecture - Paul Oliver* - Google Books. https://books.google.co.in/books?hl=en&lr=&id=rColB4CgRQ8C&oi=fnd&pg=PR1&ots=x4LiAkf48x&sig=wzPl1qP1-l9WWeQAH4GzHNn1k8g&redir_esc=y#v=onepage&q&f=false
- Plevoets, B., & Sowińska-Heim, J. (2018). Community initiatives as a catalyst for regeneration of heritage sites: Vernacular transformation and its influence on the formal adaptive reuse practice. *Cities*, 78, 128–139. <https://doi.org/10.1016/J.CITIES.2018.02.007>
- Rao, R. (2010). *A Journey of Rocks: From the Hills to Temples of Karnataka*. 4. https://www.academia.edu/42275423/A_Journey_of_Rocks_From_the_Hills_to_Temples_of_Karnataka
- Russo, P., Riguccio, L., Carullo, L., & Tomaselli, G. (2013). Using the Analytic Hierarchical Process to Define Choices for Re-Using Rural Buildings: Application to an Abandoned Village in Sicily. *Natural Resources*, 04(04), 323–332. <https://doi.org/10.4236/NR.2013.44039>
- Shannon, S. J., Webb, N., Zeng, Y., & Holder, J. (2014). Why Architecture Graduates Do Not Register as Architects: A Quantitative and Qualitative South Australian Study 1999-2011. *Creative Education*, 05(16), 1540–1558. <https://doi.org/10.4236/CE.2014.516171>
- Šiožinytė, E., Antuchevičienė, J., & Kutut, V. (2014). Upgrading The Old Vernacular Building To Contemporary Norms: Multiple Criteria Approach. *Journal Of Civil Engineering And Management*, 20(2), 291–298. https://www.academia.edu/16309838/Upgrading_the_old_vernacular_building_to_contemporary_norms_multiple_criteria_approach
- Varghese, P. (2020). Parastatal Bodies, UNESCO Heritage Sites and Tourism. *EQUATIONS*. https://www.academia.edu/64397379/Parastatal_Bodies_UNESCO_Heritage_Sites_and_Tourism
- Verhoeve, A., De Roo, N., & Rogge, E. (2012). How to visualise the invisible: Revealing re-use of rural buildings by non-agricultural entrepreneurs in the region of Roeselare–Tielt (Belgium). *Land Use Policy*, 29(2), 407–416. <https://doi.org/10.1016/J.LANDUSEPOL.2011.08.005>
- World Heritage Convention. (2010). *Choirokoitia - UNESCO World Heritage Centre*. <https://whc.unesco.org/en/list/848/>