

REVITALIZING THE ENVIRONS OF HISTORICAL CORE OF THANJAVUR

DISSERTATION

Submitted by

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ABSTRACT:

Thanjavur, one of Tamil Nadu's heritage towns has many significant tourist places in its historic center for heritage lovers. It is rich in art and culture that represents the ancient ancestral heritage and cultural heritage that percolated into the modern era. The heritage components of historical fort and temples are locally, naturally, regionally significant. The Thanjavur has unique art comprises of the classical Carnatic music, the exquisite paintings, cultural events, religious festivals and exotic cuisines. It is linked to environmental integrity, economic efficiency and resources for present and future generations. Heritage tourism as an outcome of urban renewal in historic areas is an economic development tool designed to attract visitors to an area based on the unique aspects of the locality's history, landscape and culture.

This dissertation aims to incorporate the cultural landscape as an approach to sustainable

restoration of Thanjavur's heritage site and takes a holistic approach to understanding the city's historic district and natural landscape, where historic buildings are situated.

This study comprises of three parts. The first part is related to the basic data of historical place to enhance the image & identity of the historical core of Thanjavur. The study mainly focuses on background study of Thanjavur which is Evolution, Hydrology, Geology & topographical feature of landscape character and components social, cultural and economic setup. And also, identification of issues & problems in the heritage site of Thanjavur.

The second part comprises of the study about Understanding the guidelines of heritage areas and the case studies of conservation & landscape development of historical sites with respect to similar context. This study would help to understand how to approach the historical heritage site and process of issues identification. And also a solution can be given for revitalization with their respective case studies.

Finally, the study culminates in the vast analysis and understanding about the cultural landscape. Based on the case study analysis, a Guidelines and Policy can be provided to revitalizing the historical core of Thanjavur.

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1. INTRODUCTION:

1.1 AIM:

- To explore the potential use of the cultural heritage & analyse the values it possesses in the historical sites of Thanjavur.

1.2 OBJECTIVE:

- To study about evolution of form, function and morphology of the historical city.
- To restore the hierarchy of the components of the built fabric & the un-built spaces there by rediscovering the inherent character of the place.
- To identify and understand the various developmental problems and the shortcomings in the tourist infrastructure.
- With the analysis of case studies, the possible strategies and policy can be implemented to enhance the image ability of the historic core.

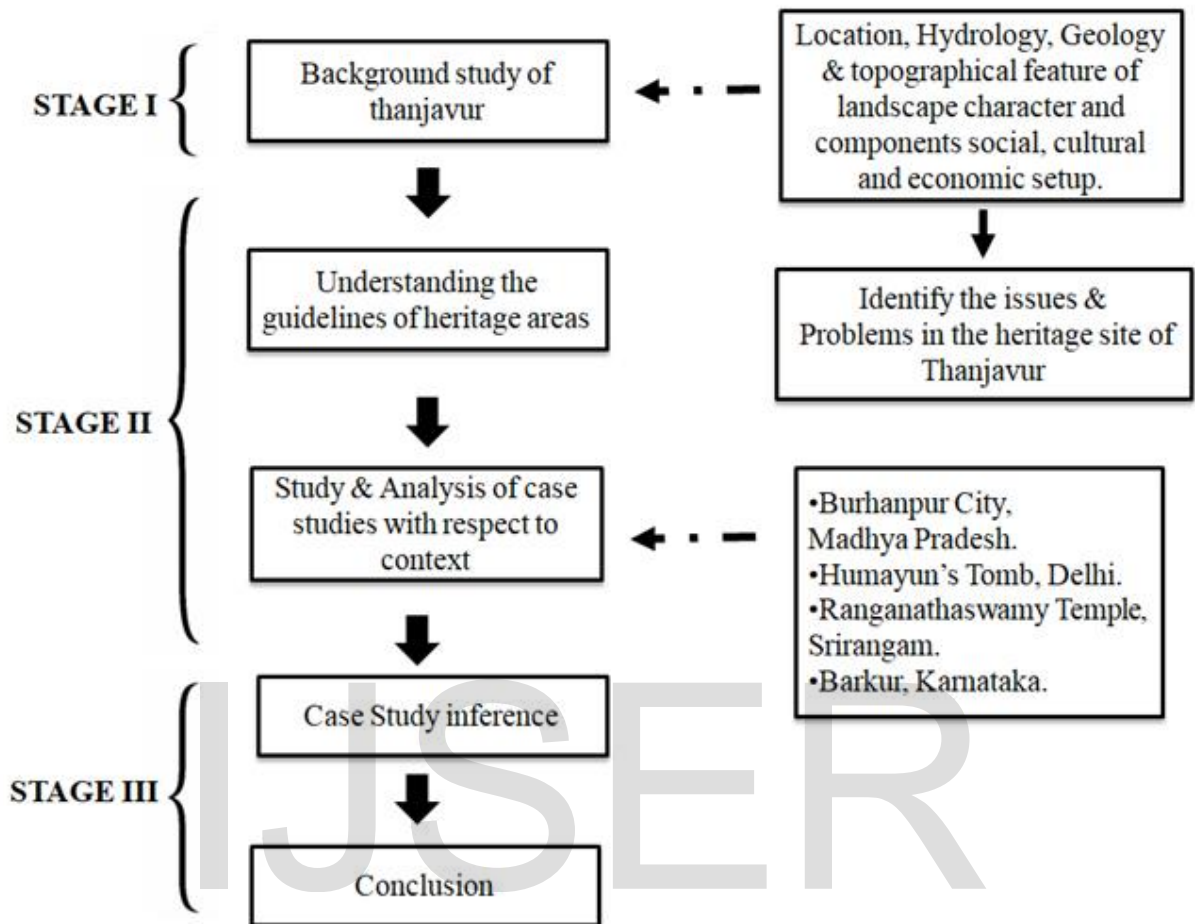
1.3 SCOPE:

- Identification and understanding of the heritage quarters and other urban areas within the municipal boundary which have to be revitalized by means of landscape treatment and planning.
- An efficient tourist infrastructure can be revitalized to enhance the image ability of the core.

1.4 RESEARCH QUESTIONS:

- How to enhance the cultural tourism within the historical core?
- How to approach the historical heritage sites and process of issues identification?

1.5 METHODOLOGY:



1.6 EXPECTED OUTCOMES:

- Tool for further research in the field of landscaping & reviving the past with respect to the planning & cultural landscaping.

2. BACKGROUND STUDY:

2.1 WHY THANJAVUR?

- Thanjavur is a historical city located in the central eastern part of Tamil Nadu state.
- It is the headquarters of Thanjavur district, and also it is the '**Rice Bowl**' of Tamil Nadu.
- It is a world heritage site seated by the UNESCO has a “**protected cultural site**”.
- After serious verification, the UNESCO has selected the Thanjavur.
- It has cultural & natural unique site for having not only the **Rajarajeshwaram** (Big Temple) of the early 11th century, but for the artistic excellent creations like bharathanattiyum, Carnatic music, Karal music, Carving works, Thanjavur paintings, etc.
- It is a remarkable city from the point of view of planning, design and the exquisite craftsmanship displayed in its built form in the heritage areas.



Figure 1: Artistic excellence creations

2.2 LOCATION:

- Thanjavur is a heritage historical town to different dynasties right from 2nd century A.D., and is living town for the past 1800 years.
- It has ruled by the dynasties Mutharaiya, chola, Pandya, Nayak, Maratha and British.
- Hence, it has cosmopolitan nature of cultural amalgamation reflected in its heritage structural buildings.

The following features are location, geographical and other special features.

- Area : 36 Sq.km
- Latitude : 9°50' and 11°25' North
- Longitude : 75°45' and 79°25' East
- Climate : 29°C - 36°C (Max.Temp.)
- : 22°C-27°C (Min.Temp.)
- Rainfall : 111.37cm
- Population : 215,725 (growth rate -6.78).

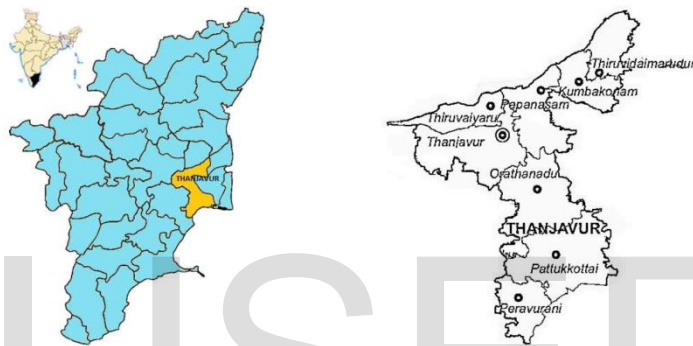


Figure 2: Thanjavur Historic area map

2.3 GEOLOGY:

- The surrounding areas are all **alluvial**, whereas the fort area alone is of lime rock sedimentary in nature.
- The crust of the sediment is laterite to a depth of 4m under laid by limestone.
- This lime stone layer is measuring to a height of 14.5M, which is followed by the calcareous clay in bottom and thickness is extending very deep.
- The laterite stone has been used in neighbouring locality for construction materials using a unique technique of excavating this high porous stones as building material.
- The lime stone were also excavated & very well used to form flooring to formulate the hard surface and other constructions like filling materials for the flooring and additional material for masonry works.

- The topographical formation of Thanjavur fort area is very useful in draining the monsoon rainwater.
- The elevation of the landscape is helpful in avoiding seasonal floods. The collection of rainwater enabled the people of Thanjavur to meet the acute summer also.

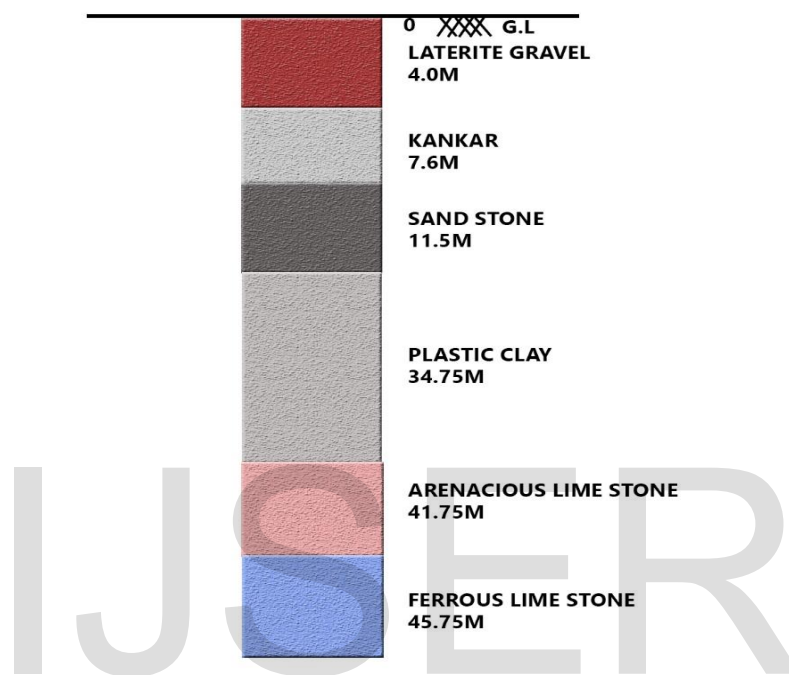


Figure 3: Geology profile of Thanjavur

2.4 TOPOGRAPHY:

- The contour of Thanjavur and its fortification gives clear idea of the **landscape & the knowledge of the ancestors** in the selection of site for the fortification.
- The elevated area starts from vallam upland sloping down towards the Thanjavur fort.
- It helps in **good harvesting of rainwater, storage** and also for the drainage of waste water without any harm to the township.

- The contour map of Thanjavur fortification gives clear picture about the slope of the topography from southwest corner (+64M MSL) to the Northeast corner (+41M MSL), which is at an elevation with 20m difference for a length of about 1000m, so convenient for drainage of sewage.



Figure 4 : Contour map of Thanjavur

2.5 HYDROLOGY:

- It is well-planned city where considerable attention was paid on water supply, sanitation and hygiene.
- The Thanjavur delta is flooded with water of kaveri river, Grand Anicut, River vennar, River Vadavar and tanks in and around the fort complex has been the main source for human settlements which is constructed by successive rulers.

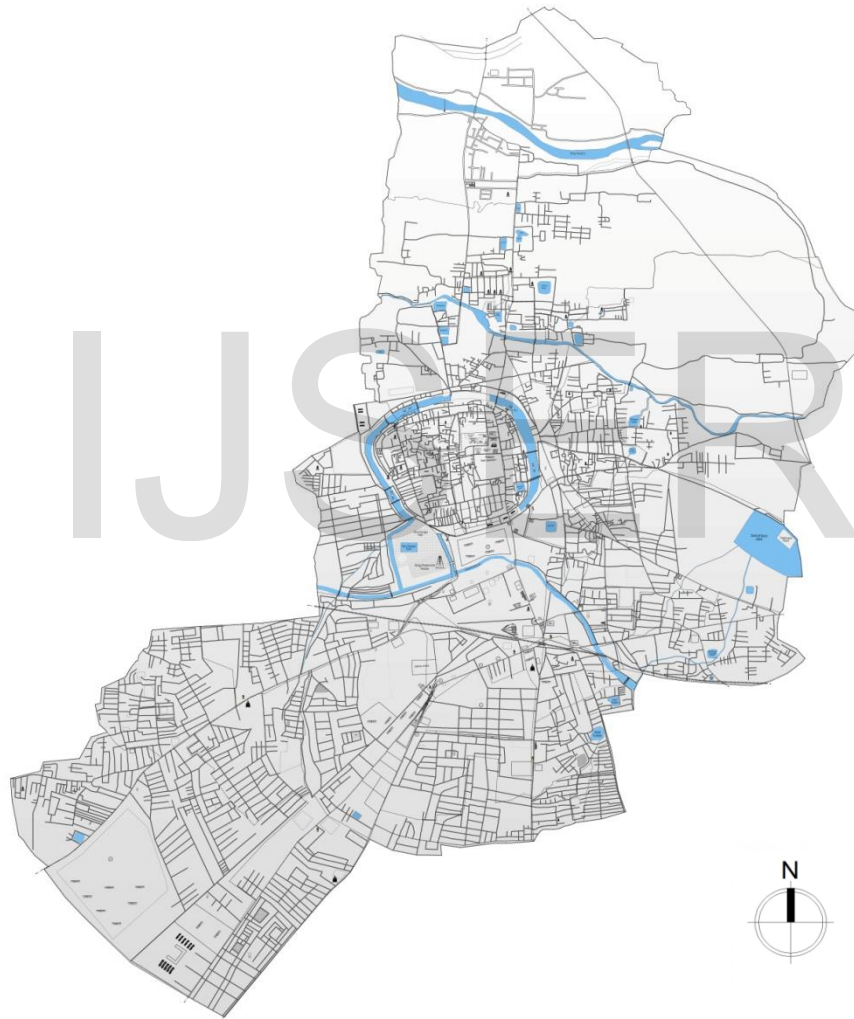


Figure 5: Hydrology of Thanjavur

2.5.1 JALASUDHRA SYSTEM (1550-1600):

- Its provide water to the fort area through underground pipes, which supply water to the Fort complex.
- Thus, a human settlement was very well established in the northeast portion of the present Thanjavur fort, especially on the southern bank of river vennar.
- A ingenious and innovative method of water collection, distribution & supply system constructed by the Nayakas with underground terracotta pipes connecting important water bodies inside the big fort.



Figure 6: Jalasudhra system

2.5.2 MOAT:

- The moat has received waters from vadavar river running at a distance of 0.5km, on the northern side as seen from the Tamil literary reference, as detailed below:

“The shrine of Rajarajeswaram in Thanjavur is surrounded by walls and a moat into which are pushed crocodiles whose habitat is the Vadavar of recurring waves., by the out flowing waters of the sluice which distribute the river water through channels to the various pools, ponds and tanks”.

- The moat has average width of **20M to 80M**, the total length of moat is 4.3Km and depth of moat various from **4M to 6M**.
- The calculated capacity of the moat is around **7.5 M.Cu.m** of water.
- The moat water system was maintained clean in natural way (sedimentation).
- The micro climate is created around the fort area and also raised water table.
- The excess water from the moat is directed for irrigation to the eastern part of Thanjavur by discharging into ‘*samuthiram*’.

2.6 EVOLUTION OF THANJAVUR:

- The town is outcome of the synthesis of three different cultures of Indian origin.
- The product is the fusion and mutual adaptation of three different influences viz. the Tamil Cholas, the Telugu Nayakas and the Marathas. This was lastly enriched by the impact of the British.

2.6.1 HISTORY EVOLUTION OF THANJAVUR:

- CHOLAS - (846 A.D – 1279 A.D)
- NAYAKAS - (1450 A.D – 1675A.D)
- MARATHAS - (1676 A.D -1855 A.D)
- BRITISH - (1798 A.D – 1947 A.D)

2.6.2 CHOLAS DYNASTY (846 A.D – 1279 A.D):

- In 846 AD, the first imperial chola king vijayalaya chola seized the territory of Thanjavur from the muttarayar king and founded the capital of Thanjavur and built a palace.
-

- Rajendra I kept Thanjavur as his capital ten years after his accession (1014 A.D) and subsequently (1025 A.D.) after the move of the capital to Gangaikonda Cholapuram..
- At that moment, Thanjavur lost its prestige and glory at that time.

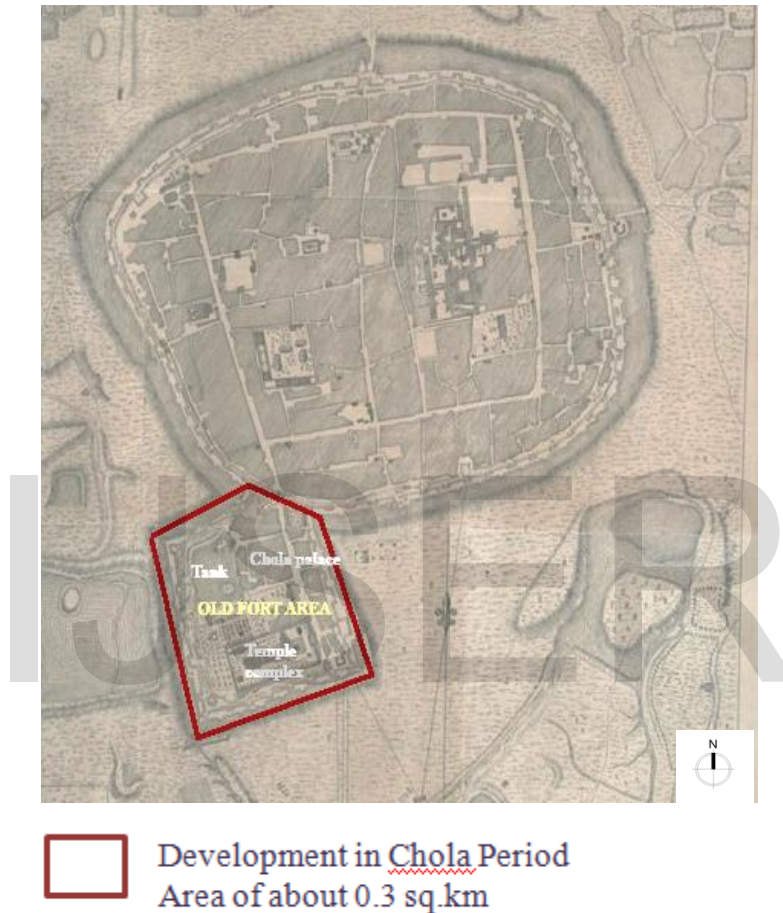


Figure 7: Map showing the development of chola period

2.6.3 NAYAKAS (1450A.D – 1675 A.D):

- After pandiyas, hoysala ruled the chola mandalam for few years and in the 14th century, the Vijaya Nagar Empire brought Thanjavur under its control. During their reign, Thanjavur recovered his lost glory during their reign.

- In 1535 A.D, Vijayanagara emperor achutha Devaraya established the Thanjavur Nayakas rule. He appointed Sevappa Nayak as the first ruler of Thanjavur kingdom.
- The rule of the Nayak lasted until A.D. 1675. Thanjavur also witnessed the flourishing architecture, literature and other related activities during the Nayak period.

2.6.4 MARATHAS (1676 A.D – 1855 A.D):

- After the Nayakas, the Marathas captured and ruled Thanjavur till 1855 A.D.
- Thanjavur was nourished and enriched with arts, literature, buildings; temples etc.
- Serfoji was the celebrated Maratha ruler of Thanjavur who patronized fine arts, music and literature. Saraswathi mahal library was established by him.

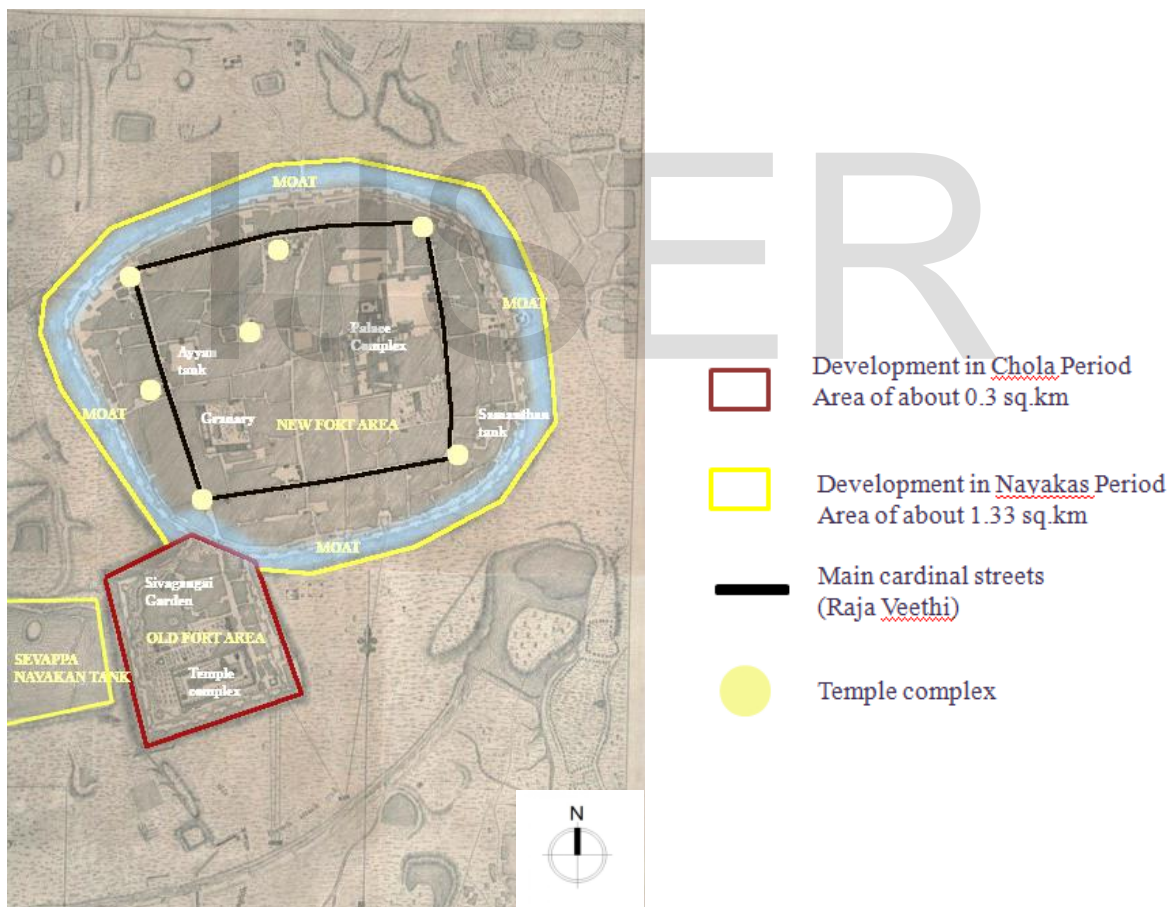


Figure 8: Map showing the development of Nayakas and Marathas period

2.6.5 BRITISH (1798A.D -1947A.D):

- French and English began to mess with South India's internal affairs. The English's hegemony was later established.
- Serfoji II, Tuljaji's adopted son, became Thanjavur's king in 1798, after agreeing with all the conditions set by the British government.
- Thanjavur's ruler was allowed to maintain Thanjavur's only restricted administrative power.
- When the ruler died in 1841 without heir, the Thanjavur fort was annexed by the British.
- British until 1947 when India attained the freedom.

2.6.6 POST INDEPENDENCE PERIOD:

- Introduction of railways during the British period allowed the town to grow on the **southern side** of the existing town.
- Even after Independence the growth of the town is seen more on the southern corridor connecting the **railway station and the old town**.
- After Brihadisvara was declared as **world heritage monument by UNESCO** in the **year of 1987**, the number of tourists coming to Thanjavur has increased significantly, in the **year of 1991** the tourists visiting Thanjavur was only **2.8 lakhs** whereas in the **year of 2004** it has increased to **8.2 lakhs**. It leads to an increase in the number of **hotels and other hospitality industry**.
- Today Thanjavur is a heritage and pilgrimage town. Where the historic core area is threatened by **rapid urbanization**.

2.7 TOURISM SCENARIO IN THANJAVUR:

- Thanjavur has been identified as one of the heritage towns by the Tamil Nadu government. Thanjavur has lots of tourist importance places for the heritage lovers.

- The first one among them is Brihadisvara temple, which is a world heritage monument.
- There are other places of tourist interest like Bell tower, Arsenal tower, Sangeeth mahal, Sarawathi mahal library, Maratta durbar hall, Sarja madi in the palace complex.
- Sivanganga garden and Schwartz church is also an important historical sites in Thanjavur.

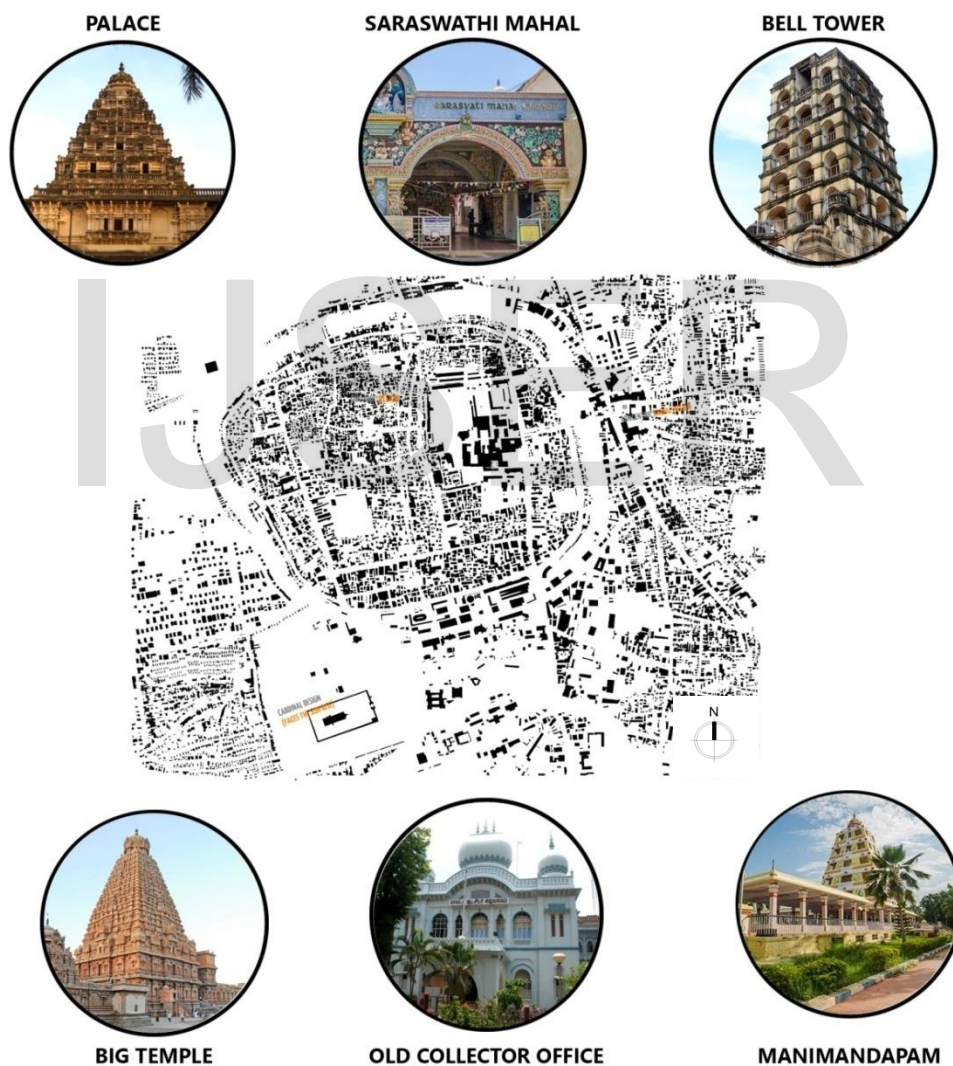


Figure 9 Landmark of Thanjavur

2.8 PROBLEMS AND ISSUES IN THE HISTORICAL CORE OF THANJAVUR:

2.8.1 THE MAJOR PROBLEMS INCLUDE:

- Traffic congestion,
- Commercial activity which cause large volumes of traffic;
- Lack of parking space;
- Inadequate public facilities;
- Lack of proper signage;
- Improper solid waste management;
- Change in land use resulting in the breakdown of the traditional social fabric.
- Loss of cultural historical character in the streetscape.

2.8.2 TOURIST INFRASTRUCTURE ISSUES:

- Information kiosks,
- Hygienic toilets,
- Pedestrian paths
- Good restaurants in the movement corridor which connecting Brihadisvara and palace complex

2.8.3 VIEW OBSTACLES:

- Building height of not more than 9 m is required within a radius of 1 km from the temple of Brihadisvara, as per the building bye laws of the municipality of Thanjavur.
- A certain high rise buildings (**more than 9m**) are being **constructed obstructing the views of temple** and other towers in palace complex from the vantage points.
- In addition, **the advertisement hoardings on the terraces of buildings** also obstruct the temple view.

2.8.4 SPECIFIC ISSUES IN BRIHADISVARA TEMPLE ZONE:

Eastern side of the moat in Brihadisvara temple looks **visually unimpressive**.

- **Shops / vendors** in front of the temple, obstructing the view also causing hindrance to the pedestrians.
- Some of the shops are located on the pedestrian paths.



Figure 10: View of the Moat around the Brihadisvara Temple, Thanjavur

2.8.5 SPECIFIC ISSUES IN PALACE COMPLEX ZONE:

- Lack of Coherence of building form / materials.
- Mixed land uses which cause disturbance to the character of the area.
- Loss of Historical significance & environmental quality.
- The open spaces inside the palace complex get depleted.
- No proper ticket counters, parking space, proper signage for tourist in the complex.
- Improper pedestrian paths and street amenities in East Main Street, which is the main approach road for the palace.



Figure 11: Depletion of open space in palace complex

3. CULTURAL LANDSCAPE DEFINITION:

- Cultural landscapes are defined as cultural properties that represent the “combined works of nature and man”.
- They are illustrative of the evolution of human society and settlements over time, under the influence of the physical constraints & opportunities presented by their natural environment and of successive social, economic, and cultural forces, both internal and external.

3.1 GUIDELINES ON EDUCATION AND TRAINING IN THE CONSERVATION OF MONUMENTS, ENSEMBLES AND SITES:

3.1.1 1993 Training Guidelines (ICOMOS-CIF):

- The object of conservation is to **prolong cultural heritage life** and, if possible, to clarify the historic and artistic message.
- Conservation is a **cultural, artistic, and technical and craft activity** based on scientific studies and humanistic.
- Conservation must respect the cultural context.

3.2 COMPETENCE IN HERITAGE CONSERVATION:

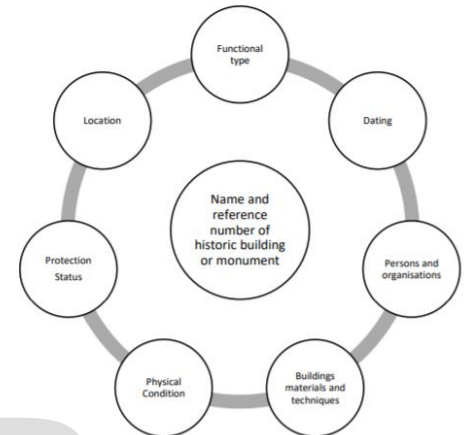
3.2.1 1993 Guidelines, article 5:

Recognize heritage resource within its context:

- To read a monument, which ensemble or site and identify its emotional, cultural and use significance.
- Understand the history and technology of monuments, ensembles or sites in order to define their identity, conservation plan and interpret the result of this research.
- Understand the setting of a monument, ensemble or site, their contents and surrounding, in relation to other building, garden or landscape.
- To find and absorb all available sources of information relevant to the monument, ensembles or site being studied.

3.2.2 Undertake survey and documentation:

- Understand and analyze the behavior of monuments, ensembles and complex systems site;
- Diagnose intrinsic and extrinsic cause of decay as a basis for appropriate action;
- Inspect and make reports intelligible to non-specialist readers of monuments, ensembles or sites, illustrated graphic by means such as sketches, digital display etc.



3.3 GENERAL GUIDELINES THAT APPLY TO ALL HISTORIC AREAS:

3.3.1 The new building should have:

- a **rhythm** that harmonizes with the urban rhythms and the morphological pattern of the surrounding fabric;
- a **mass** in balance in its context — not too large to spoil the intimate human scale of the historic center, and not based on an artificial combination of several lots to accommodate one large function;
- a **street** boundary line following the line of the existing setbacks;
- a **silhouette** respecting the traditional local character and silhouette;
- **materials** that are traditional, or compatible with traditional materials; windows similar in character and in window: wall ratio to typical buildings in the same area; and be of
- **High quality** in construction and design, which might be achieved by careful proportions and — in appropriate cases — by elevation relief or plastic treatment.

3.3.2 PLANNING PROCEDURE:

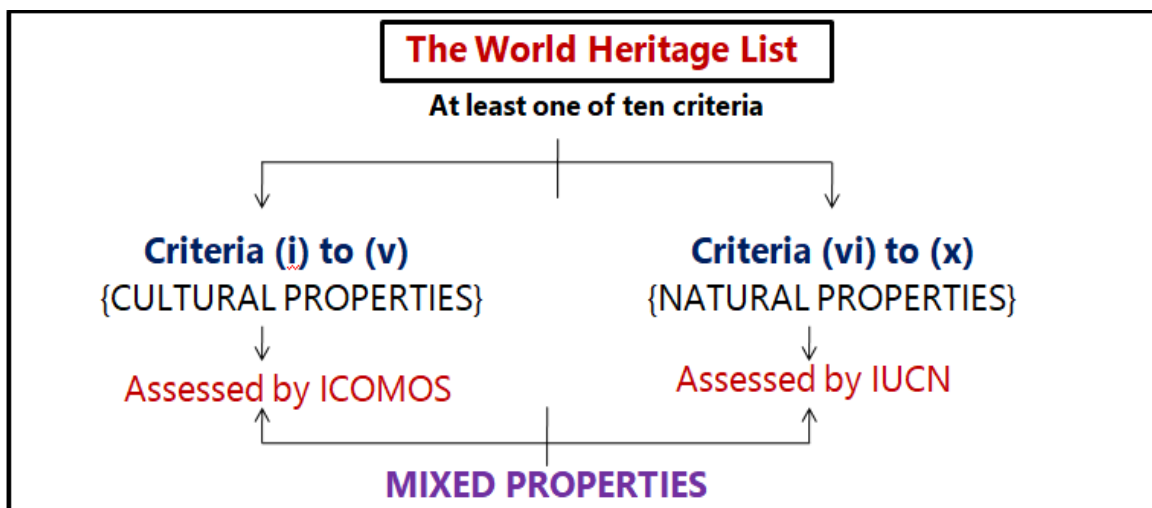
- On an urban scale, preservation involves not only cultural and historic values but also their inherent economic and social implications.
- The historic town or city raises conservation problems stemming from the political and economic approach rather than from any physical aspect.
- The town is the product of several historical periods and of specific social, cultural, anthropological, geographical and economic relationships.
- A typical master town plan for an urban area has **two basic components**.
 - The first consists of the current and future profile of the users of the plan area (that is, those residents in or making use of it in their everyday activities).
 - The second component is providing them with the appropriate mix of land uses for those activities, such as shopping centers and schools, so that appropriate physical development will occur.
- The concept of zoning — the limiting of an area to a specific category of use is contrary to the cultural richness and social diversity of a thriving historic center.
- There is also a risk in the application of standards without due consideration of the existing historic reality, which could result in the destruction of the existing scale and urban texture.
- The town plan should relate to the potential in the existing building fabric. Detailed inspection of all surviving historic fabric will give planners a chance to plan realistically, using cultural resources to the best advantage.
- The planner should respect not only historic buildings and spaces, but also the intangible elements of cultural heritage expressed as community values or folk life.
- The aim of planning should be to see that the planned change avoids, as far as is practicable, disruption of traditional and contemporary community patterns.
- While it is not feasible to freeze folk life in time, it is desirable to facilitate change by respecting the choices of the people concerned.

- Conservation should not restrict the living standards of the occupants of an historic area. However, there is a challenge implicit in meeting the rising expectations of present-day life-styles.
- If the occupants are to have cars, for example, provision must be made for parking that does not interfere with the existing fabric. In addition, needs for water, electricity, and sewage and rainwater disposal should be dealt with.
- Consideration must also be given to acoustic privacy; sources of noise — especially restaurants and clubs — must be contained.

3.4 IDENTIFICATION CRITERIA FOR CULTURAL LANDSCAPE:

WORLD HERITAGE CRITERIA:

- In the World Heritage list, the sites must be of Outstanding Universal Value and meet **at least one of ten criteria**, as well as the relevant conditions of integrity and authenticity and requirements for protection and management.
- The World Heritage criteria are explained in the **Operational Guidelines for the Implementation of the World Heritage Convention** is the main working tool on World Heritage.



3.4.1 AS PER UNESCO SITE, THE BRIHADISVARA TEMPLE WHICH IS HELD UNDER THE CRITERIA (II) & CRITERIA (III):

- **Criterion (ii): exhibit an important interchange of human values, over a span of time or within a cultural area, on developments in architecture or technology, monumental arts, town-planning or landscape design.**
- Thanjavur Big temple is categorized under **Criteria (ii)** because this was built during chola period and it has been regarded as a ‘landmark in the evolution of building art in south India’ and its vimana as a ‘touchstone of Indian architecture’.
- **Criterion (iii) bear a unique cultural tradition to a civilization which is living or which has disappeared;**
- The cholas, Nayakas & Marathas civilization of the past had its own unique culture which stays even today.

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4. CASE STUDY – 1: BURHANPUR CITY, MADHYA PRADESH:

4.1 Purpose of choosing the case study:

- A historical site is characterized by natural features and architectural and religious monuments, which is similar to the site context of Thanjavur.

4.1.2 BURHANPUR CITY:

- The cultural heritage of Burhanpur city, which is a historic district of the state of Madhya Pradesh in India.
- The historical heritage urban landscape of Burhanpur city developed in the 14th and 17th centuries, with many heritage components and systems, such as picturesque landscapes, historic structures and environmental and health qualities.
- The history of the urban landscape of Burhanpur is the cultural heritage with its indigenous planning, design and construction activities, including historical gardens and waters.
- It is one of the heritage cities of the UNESCO—Indian Heritage Cities Network (in 2006).

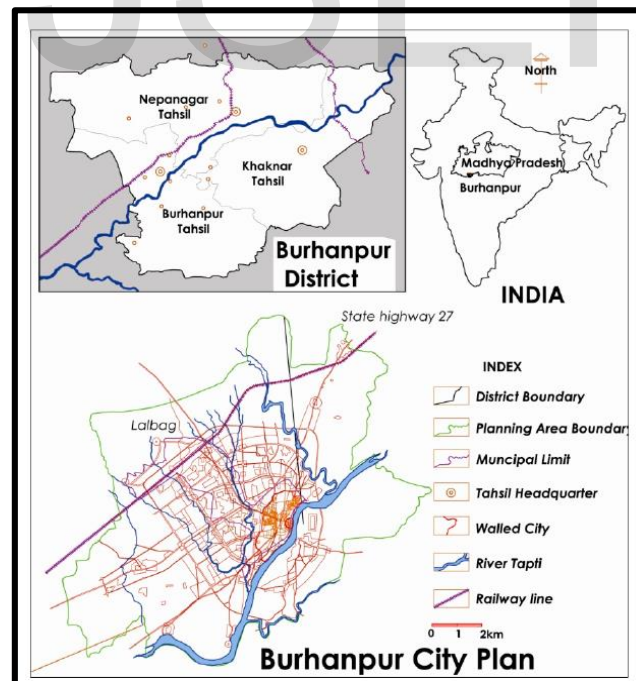


Figure 12: Burhanpur city plan

4.1.3 Indigenous Systems of the Burhanpur Cultural Landscape:

Indigenous Planning and Design:

- Burhanpur City's indigenous planning and design system, which considered the holistic approach to architecture, as well as its component parts, such as street length, building height, orientation, open spaces, land use, overall layout and other climatic issues.
- The placement of important buildings at elevated positions for visibility to enhance image ability of city and the irregularity of the streets and other aspects divide the space into recognizable visual statements, revealing the existing topography.
- These important structures will form a visual linkage, whereas other elements, such as the riverfront and fortification wall, create barriers.



Figure 13: Section of the Burhanpur settlement illustrating the spatial organization.

4.1.4 Historic Gardens and Designed Landscapes:

- The medieval Mughal gardens and designed landscapes of Burhanpur can be categorized into three typologies:
- **Royal hunting preserves.**
- **Royal pleasure gardens.**
- **Sacred tomb gardens.**
- This understands the importance given to the gardens in Burhanpur's medieval urban planning, which is defined as a large town with many sandalwood trees dotted gardens.
- The framework of planning and design which is covered with gardens and green open spaces in the compact built environment of Burhanpur helps with the creation of a social and physical environment that promotes the social interactions and good health in an increasingly urbanized population of Burhanpur.



Figure 14 View of Burhanpur walled city from the River Tapti

4.1.5 Indigenous Water Management Systems of the Landscape:

- Burhanpur has a potential geological feature which is a large Bajada fault, parallel to the River Tapti and the valley of the Satpura hills adjoining to it.
- In Burhanpur urbanism, hydrology and topography played a vital role.

- Abdurrahim Khan-i-Khanan who developed the unique water system known as “Quanat” (or subterranean water channels and cisterns) under a guidance of Persian geologist by utilizing the fault landform, which sloped towards the east to the River Tapti.
- The water recharge system designed for the canal through underground channels and storing it in reservoirs, partly underground and partly above ground, called "Bhandaras" through a system of underground channels and galleries, was based on the principle of intercepting the run-off at groundwater level.
- The ground water thus collected is stored in sump-wells known as “karanj”, from where it is further distributed through quaternary channels throughout the major consumer points.

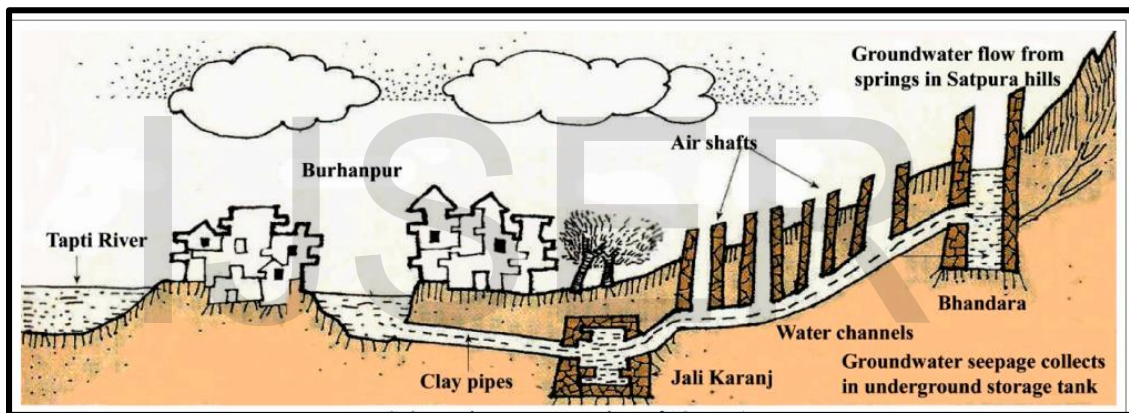


Figure 15: Schematic Representation of 'Quana'



Figure 16: Series of air shafts and Underground channels

4.1.6 PROBLEMS:

Due to improper management services, the natural resources management system & complementary indigenous framework have been lost.

- Degradation of quality of life.
- High level of energy consumptions.
- Pollution
- Deterioration of the water & its quality.
- Encroachments
- Dumping of garbage
- Insensitive developments throughout the landscape are degrading its highly evolved character of the urban fabric.

4.1.7 Conservation Issues and Discussion:

- The cultural heritage landscape could be **revealed** which contribute considerably to restoring characteristics that signify deeper socio-economic and cultural roots.
- The monumental structures can be conserved will certainly help in enhancing community pride; however, concern for traditional culture and vernacular architecture is also required, as it is directly related to sustainability.

4.1.8 Conservation of Historical Gardens:

- Because of vandalism, encroachment and urbanization, some parts of these gardens are damaged at present.
- As a result, the landscape and its gardens are rapidly deteriorating, creating an increasing environmental threat that leads to the loss of urban fabric at the same moment.
- The historic gardens and traditional landscapes are to be conserved, especially because it fosters community pride and provides social, cultural, psychological and physical services, which foster stress recovery by inducing positive feelings and offer a sense of peacefulness and harmony and also quality of people life.

4.1.9 Conservation of traditional water management system:

- The under-utilized traditional water management system, a sustainable solution, has the potential to continue its function.
- Even today, vestiges of these systems are still functional [5], supplying 1,350,000 liters of water per day, which is 15 percent of the total water supply of the city (the remaining 85 percent, *i.e.*, 7,650,000 L of water, is supplied by bore-wells and dug-wells).
- Due to the discharge of bleaching and dyeing effluents by the textile industries and pollutants near Jali Karanj. These systems are not considered part of a heritage framework management.
- If these segments are repaired, they can supply up to 1,800,000 L (*i.e.*, 20 percent) of water daily at zero cost which leads to sustainable development.

4.1.10 CONCLUSION:

- Cultural heritage, natural resource management systems, indigenous planning and design structure, which are crucial for historic Burhanpur to be built and preserve, are deteriorating gradually.
- Though these components are no longer recognized or valued in the absence of proper management services and the presence of vandalism, invasion and over-intensive use, by restoring certain components that revive sustainability.

4.1.11 INFERENCE:

- By restoring the indigenous resources, the historical city will provide sensitive infrastructure planning which gives to maintain the good quality of the city environment.

4. CASE STUDY 2: HUMAYUN'S TOMB, DELHI:

4.2 Purpose of choosing the case study:

- To understand the landscape restoration around the monuments.

4.2.1 HUMAYUN'S TOMB:

- The Humayun's Tomb is an early example of Mughal architecture built in New Delhi.
- Built in the mid 16th century by his wife Haji Begum.
- The tomb is situated in south of the Purana Qila, on the eastern edge of Delhi.
- It has center of a garden in the classical Mughal char bagh pattern.
- A high wall surrounds the garden on 3 sides.
- The garden is divided into 4 parts by two bisecting water channels with paved walkways (khiyabans), which terminate at two gates.

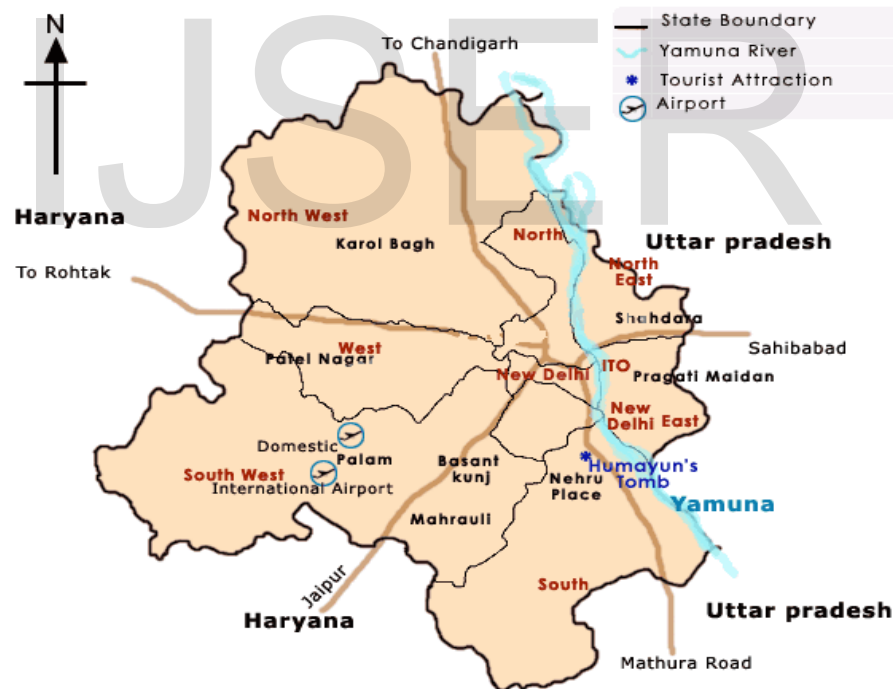


Figure 17: Location map of Humayun's Tomb

4.2.2 REASON FOR RESTORATION:

- To revive the cultural & Historic value, Socio-economic development, to benefit local communities.

4.2.3 LANDSCAPE RESTORATION:

- In 1993, the designation of World Heritage Site status to Humayun's Tomb came with the ICOMOS recommendation that "the gardens should be restored".
- The restoration of the garden at humayun's Tomb culminated in restoring flowing water to the garden enclosure, restoring garden levels, repairing 2, 00,000 sq.mt of pathways and planting Mughal flora such as citrus, pomegranate, neem and hibiscus on plots that were overgrown and unkempt.
- Water channels, fountains and char-bagh having been brought close to their original perfection.

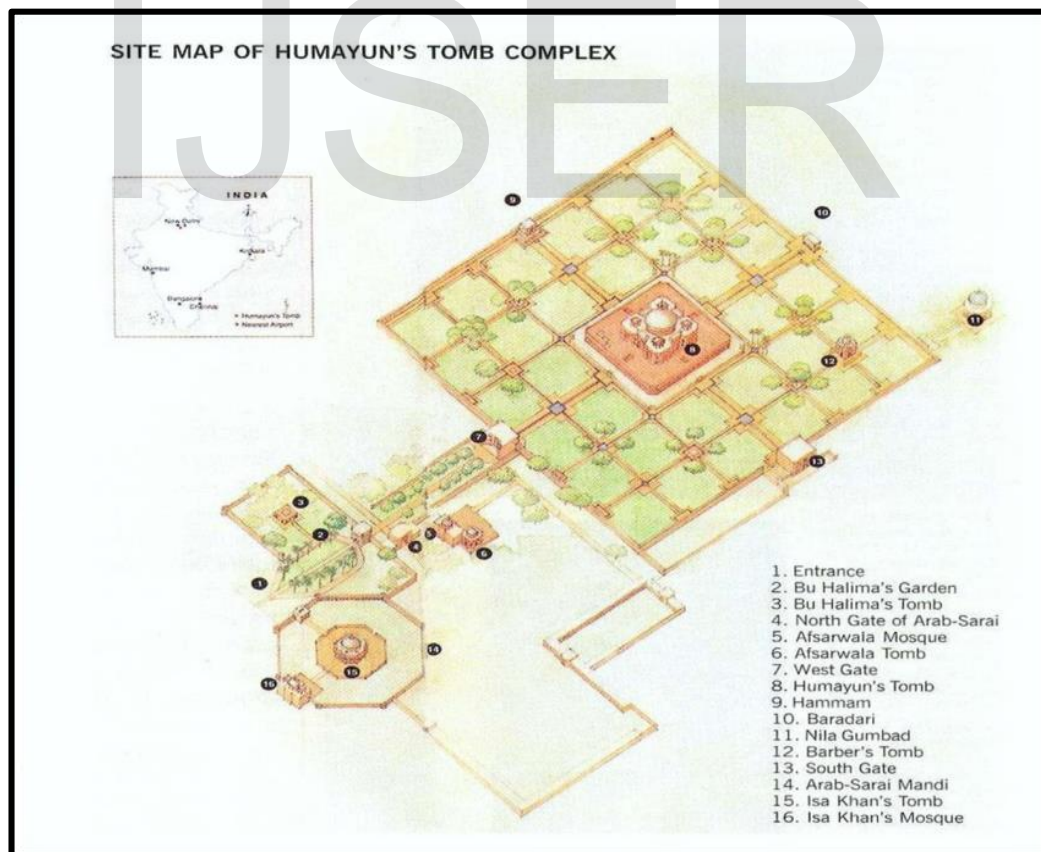


Figure 18: Site Plan of Humayun's Tomb Complex

4.2.4 LANDSCAPE RESTORATION TIMELINE:

- 1906 : Restoration of Channels and tanks in garden and edging of water channels with red stone
- 1907 : Restore of sandstone channels
- 1912 : Modification to garden, raising Kerbs to paths.
- 1930 – 34 : Dislodged stone slabs in cause ways have been reset in position, broken beds of parnalas have been repaired
- 1934 – 35 : Broken steps at the entrance to the tomb were repaired
- 2011 : UNESCO recommendation on the “Historic Urban Landscape” for approach to managing historic urban landscapes is holistic by integrating goals of urban heritage conservation and those of social and economic development.



Figure 19: Humayun's Tomb

4.2.5 MAIN ELEMENTS TREATED:

- Establishing water sources for the water channels and irrigation system.
- Re-levelling the planted zones with the patterns of Mughal styles

- **12 hectares of lawn** – established. And **Walkways & edging stones**
- **2000 km of path edging** with **hand-dressed red sandstone slabs**.
- **128 groundwater recharge ponds**, & construction of a modern walkway water circulation network.
- To ensure that water flows naturally without the support of hydraulic systems, all **40 meters of water channels** are replaced to an exacting grade of one centimeter.
- Over **2500 trees and plants**, including **neem, hibiscus lemon, mango, and jasmine** cuttings, were planted in the gardens.



Figure 20: Water channel and pool after restoration



Figure 22 : Restoration of plinth which acts as an interface between the tomb and the garden.



Figure 21: Edging stone restoration

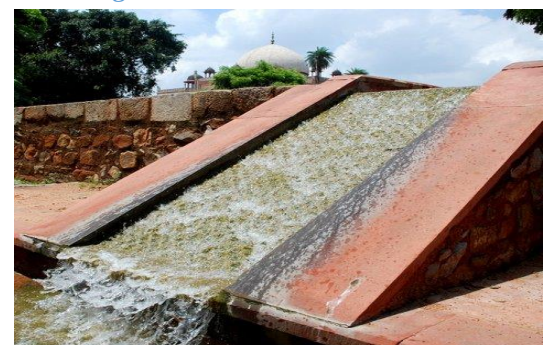


Figure 23: Restored water flows, sandstone chadar

4.2.6 INFERENCE:

- By restoration of landscape which **revive the cultural & Historic value, Socio economic development.**

4. CASE STUDY – 3: RANGANATHASWAMY TEMPLE, SRIRANGAM:

4.3 Purpose of choosing the case study:

- This case study helps to understand how the significance of view or visibility of sacred monuments plays an important role in the city. And also how to identify & protect the views of sacred monuments from the obstruction of view.

4.3.1 RANGANATHASWAMY TEMPLE, SRIRANGAM:

- Srirangam, a historic sacred town in central Tamil Nadu, South India, which is bound by the Cauvery River on one side and its distributaries, Coleroon, on the other.
- In India, The temple of Srirangam is the only one has seven concentric rectangular enclosures round the sanctuary.
- The main entrance to the temple complex is the Rajagopuram, i.e., the southernmost gateway – is considered the tallest in Asia, rising to the skies at 71 m height with its 13 tiers.

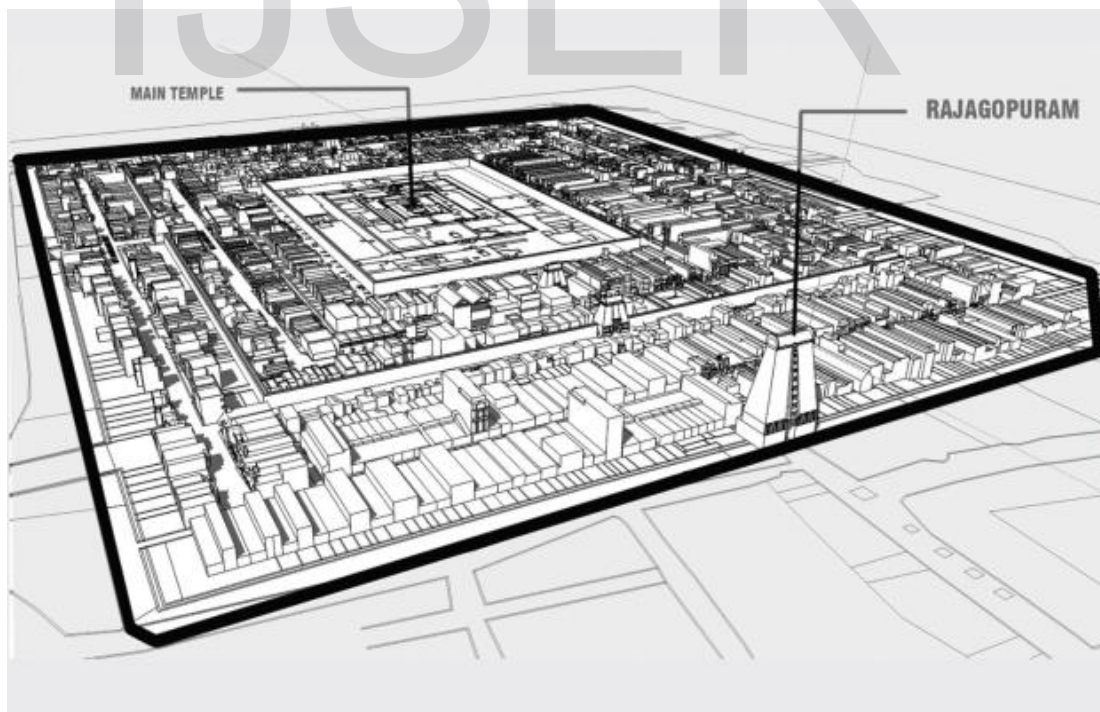


Figure 24: An Aerial View of the Srirangam Temple Complex



Figure 25: A distant view of the Rajagopuram of Ranganathaswamy Temple, Srirangam

4.3.2 The following is the modified view assessment framework for analyzing the views of sacred monuments and for identifying the important views.

- i. Visibility of the Gopuram:** High (Structure Visibility is $> 90\%$, with no obstructions), Moderate (visibility range from $70\% - 90\%$, with few obstructions), Average (visibility range $50\% - 70\%$, with more obstructions), Poor (obstructed by permanent objects, partial visibility, visibility range less than 50%).
- ii. Classification of View:** Immediate Views - within 500m from the view amenity, Intermediate Views - between 500m to 1000m from the view amenity and, Distant Views - more than 1000m from view amenity.
- iii. Viewing Place:** View from streets and path, View from semi-public places, View from open grounds & public parks, sacred places, View from water bodies, sacred tanks, rivers, etc.
- iv. Types of view:** Visual corridor, Panoramic, Serial views, Framed Views and, Street-end views.
- v. Dominance in skyline:** The impact of silhouette of the monument in the skyline (High, Marginal and Low).

vi. Obstructions types: Buildings, Signage, Communication & Utility Lines, Vegetation, Hoardings, Temporary thatched roofs, etc. Background and Foreground of the View Plane.

vii. Place characteristics of viewpoints: Enclosure, Activities, Land use, Place Elevation, General Ambience, etc.

viii. Potential people Viewers: Locals, Pilgrims, Tourist and Non-Religious Tourist.

ix. View Significance: Ranked among the selected views based on views cape Attributers.

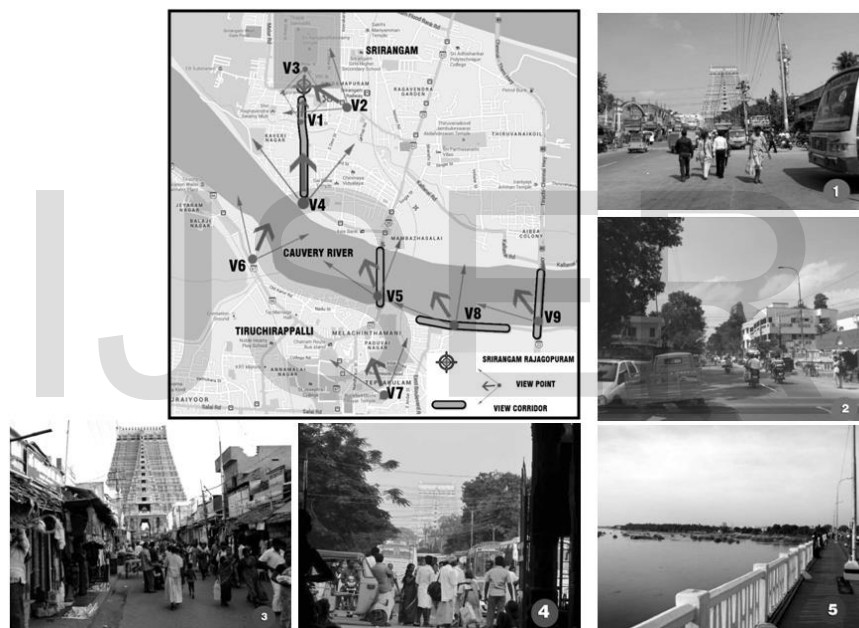


Figure 26: Map of Srirangam Town showing identified viewpoints

4.3.3 ISSUES:

- In the case of the temple of Srirangam, the Rajagopuram is surrounded by construction around it and there are many elements that interfere with the view frame (signage, hoarding, power lines, roof projections, etc.) and detract from the overall visual value.

- The lack of dedicated points of view to experience the view of Rajagopuram is mainly due to the heavy volume of pedestrian and two-wheeler traffic that passes through the gopuram to enter Srirangam's historic city.
- These obstacles are both temporary (hardings, signs, etc.) and permanent in nature (buildings, power lines, above buildings communication towers, etc.)

4.3.4 PRESERVATION:

- The significant views, viewpoints, visual corridors which need to be protected but also identifies the obstructing elements which need to be removed from the viewscape.
- The ASI has worked hard to return the temple to its original state and appearance. By removing new structures built during later periods, the original structures and spatial layout of the Srirangam.
- However, improving the view places from obstruction will enhance the viewing experience.

4.3.5 INFERENCE:

- The view of sacred monuments brings people closer to values of faith, spirituality, culture, and place. The relation between people, religion and location is enhanced by maintaining and enhancing the views of the sacred monuments.

4. CASE STUDY – 4: BARKUR, KARNATAKA:

4.4 Purpose of choosing the case study:

- This case study has a rich historical background & this cultural landscape which has evolved over centuries is under threat due to insensitive development and apathy towards, which is similar to the site context of Thanjavur.

4.4.1 BARKUR, KARNATAKA:

- Barkur is a historic city is located in coastal Karnataka on the banks of the river Sita, 16 km away from Udupi towards its North.
- It was the capital of the Alupas, which formed the Tulu Kingdom and were known as Tulu kings.
- Barkur is also known as the “**Village of Temples**” as it had 365 temples amongst these about 30-40 remain today.
- It led to further development of socio-economic activities and the growth of this city and it became the core of Tuluva culture.



Figure 27: Location map of Barkur

4.4.2 MORPHOLOGY AND TOWN PLANNING OF BARKUR:

- By the 10th century, Barkur had developed as a well-planned city.
- Initially the settlements started around the river and the forests were cleared for agriculture, once settlements grew, streets were developed and as the population increased colonies called “Keris” were planned based on people’s Profession.
- These settlements contained a group of 10 to 15 houses and each colony or Keri had its own temple and temple tank called “Kere”.
- They built lakes for the purpose of irrigation and for the temple’s use, wells at houses or community wells catered for drinking and for other household purposes.
- The northern part of Barkur once had thick moist deciduous forest but this has now it is degraded due to human intervention.

4.4.3 ISSUES:

- **Unplanned and uncontrolled** human activity.
- Change in land use caused by **converting agricultural lands into construction activity.**
- **Depleting water table** due to increase in demand and decrease in rainfall.
- **Increasing levels of pollution** in the water bodies like wells, tanks and river.
- **Urbanization has led to degeneration** and loss of most of the streams.
- The tanks lie in neglect and have collected silt and weeds leading to anaerobic conditions.
- Apathy towards their rich heritage including the pillage and destruction of monuments.
- Heritage sites are being misused by anti-social elements for illegal activities.

4.4.4 THEY COLLECTED THE DATA BY THE FOLLOWING PROCESS:

OBSERVATION AND STUDY:

- To understand the cultural, historical, social and religious fabric of the place.

- To experience the day-to-day activities and the functioning of the town through multiple site visits.

PHOTOGRAPHS:

- The photographs of the past helped to identify the natural resources, built form, landscape and infrastructure.
- To understand the present condition of the monuments, heritage sites, epigraphs, victory towers, the missing relics and statues, etc.

INTERVIEW:

- To learn of its historical background and rich heritage, the descriptions given by people helped to understand their requirements and expectations from their town.
- The questionnaire helped to understand the requirements of the different age groups.

GIS MAPPING:

- Mapped the topography, natural setting, and the morphology showing the planned colonies called “Keris”, which helped to understand the physical features of the area, as well as the topography, terrain, hydrology, soil, geomorphology and vegetation.

4.4.5 DESIGN STRATEGIES:

- **A green belt of 100 m** is proposed along the river consisting of a no development zone, existing vegetation (to be protected).
- Heritage monuments to be restored and protected under state archeology direction and through proper site management.
- As centrally protected monuments, the structural and physical management of the temples is monitored by the ASI through a series of well-established procedures, such as routine inspections and scientific investigations. This is substantiated by condition mapping, photo documentation and survey work.
- Proposed trails such a cultural, historic and sacred to promote eco-tourism and

provide economic opportunities to the locals.

4.4.6 INFERENCE:

- By developing an association between the natural landscapes, physical features, heritage and socio-cultural aspect which could help the people to develop a **sense of pride and to encourage eco-tourism by strengthening and enhancing the rich culture of the place and promote sustainable development.**

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5. CASE STUDY ANALYSIS:

ISSUES IN THANJAVUR	CHARACTERISTICS	CASE STUDY	SOLUTION
An indigenous and innovative method of water collection which is Jalasudhra system. Now, it is depleted due to lack of maintenance.	INDIGENOUS RESOURCES	Burhanpur city, Madhya Pradesh	The under-utilized traditional water management system, can be repaired will facilitate 20 percentage of water at zero cost.
The open spaces inside the palace complex get depleted.	LANDSCAPE RESTORATION	Humayun's Tomb, Delhi	Conservation of water management and landscape restoration by same traditional materials & techniques to match the original texture. Provision of new signage system with traditional material to merge with the historical & cultural character.
A certain high rise buildings (more than 9m) are being constructed obstructing the views of temple and other towers in palace complex from the vantage	VISIBILITY	Ranganathas wamy Temple, Srirangam	The building height is more than 9m within the 1KM radius which obstruct the view of temple, so that can be prohibited and also

points.			temporary structures like signage, vegetation, hoardings are removed.
Unplanned and uncontrolled human activity. Urbanization has led to degeneration.	SOCIAL & CULTURAL VALUE	Barkur, Karnataka	To promote eco-tourism and provide economic opportunities to the locals for strengthening & enhancing the rich culture of the place.

Table 1: Case Study Analysis

6. FINDINGS:

- One of the most important aspects of preserving the iconic and historical heritage is the urban restoration and preservation of historic towns.
- The revitalization of the historic center of Thanjavur can result in the preservation of heritage sites and the preservation of urban character.
- The main issues to be considered for the regeneration of Thanjavur historic core is the balanced approach of conservation and development.
- Successful restoration of Thanjavur's historical landscape will transform places, strengthen the community's self-image, and re-create desirable locations that will promote sustained inward investment.
- The town's heritage value is revived; it will certainly enhance the image and identity of the town, which in turn will attract more tourists.

7. POLICY:

1. Within the historical center or in the buildings listed, advertising and hoarding must comply with the policy consisting of:
2. A design and scale that respects the character and appearance of the area.
3. Good quality materials that is harmonious to the surface to which they are attached.
4. Advertisements, hoardings should not block the view, vistas of monuments and historic structures; externally illuminated advertisements that require large light fittings should not be permitted.
5. Any new development in the historic area would affect the complex environment of the temple, so any new developments in the area should take advantage of the view of the temple and should not block the view of the temple from other areas of the city. Building heights and signs in particular areas need to be managed.

8. CONCLUSION:

From the case studies of analysis, the historical value of city which is similar to Thanjavur, the following guidelines can be applicable:

- The historical buildings give prestige to the area and increase the property value and expressed that the historical buildings need to be conserved.
- The new construction coming up in the historic areas should be harmonizes with the character and sense of place.
- In addition, there are small, informative panels outlining the importance of the various structures.

- The introduction of an imaginative and creative signage with local material used in the early period to blend with the historical character would significantly contribute to the vitality and viability of the historical center as part of a wider street layout package and major developments.
- The ASI has worked hard to return the temple to its original state and appearance. By removing new structures built during later periods, the original structures and spatial layout of the Thanjavur. The views of monuments need to be preserved and enhanced to improve the image of the city.
- Proposals will be required to maintain or enhance existing urban spaces, views, landmarks, and other townscape elements, which contribute to the character or appearance of the area.
- The traditional landscape is being replaced with concrete structures to bring back the original ambience of the place.
- To mitigate the environmental issues of unplanned development around monumental areas, the government has prohibited any further structural development within 100 m of monumental areas and regulates any development in the next 200 m.
- Planning permission should only be granted for new, or alterations to existing buildings in conservation areas or on listed buildings where the proposed design preserves or enhances the character of the area or building.
- As centrally protected monuments, the structural and physical management of the temples is monitored by the ASI through a series of well-established procedures, such as routine inspections and scientific investigations. This is substantiated by condition mapping, photo documentation and survey work.

- Temple restoration with minimal intervention.
- The original rainwater drainage system should be restored and inscriptions have been revealed.

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