

PORTFOLIO

1. PHYSICAL SURVEY

URBAN STUDY PHYSICALS

INTRODUCTION 01

புதுச்சேரி

INTRODUCTION

Pondicherry also known as Puducherry was a French based colonial settlement till 1954 and now it is a Union Territory bounded by South eastern Tamil Nadu. It is derived from the Tamil word Puduchet which means new settlement. It consists of three districts that fall under different States.

ABOUT PONDICHERRY





ABOUT

Latitude: 11° 55' 48" N
Longitude: 79° 49' 48" E
Altitude: 3 meters
Area: 294 sq km
Total No. of wards: 42
Area Covered: 2,02 sq km
No. of wards covered: 9
Climate: Tropical wet & Dry
Temperature:
Summer: April - Early June
38°C to 49°C
Winter: September to January
18°C to 30°C
Rainfall: 1171 mm annually

TOPOGRAPHY

The topography of Pondicherry is the same as that of coastal Tamil Nadu. A number of low hills, referred to as "backwaters" can be found. Pondicherry has an average elevation of about 13 metres above sea level.

GENERAL DESCRIPTION

Ranked by a picturesque sea and a fishing harbor, Pondicherry was, once an ancient Tamil port town. The town gained importance as a trading destination from the roman times. Initially it was named as "PULUCCHERI". Later in 2006 the French government changed it to "PONDICHERRY", how it is called as "PUDUCHERRY". "PUDU" means "NEW", "CHERRY" means "SETTLEMENT".




Officially Puducherry is the capital and chief city of the union territory of Puducherry. It was a French colonial settlement in India until 1954, preserving its French legacy in its French quarter, with Boulevards, mustard colour colonial villas and chic boutiques. The town under the colonial empire developed as a bastion town with the market of the centre and the developments radiating from it. Known as the "FRENCH RIVIERE OF THE EAST", Pondicherry is part of Union territory of Puducherry. Puducherry includes 4 former French towns namely:

- Pondicherry
- Karaikal
- Mahe
- Yanam

Area under the Urban agglomeration of Pondicherry is 303 acres.




Development of these major community:

- Permanent community with stone houses and fixed shelters.
- Temporary community with open farm yards.
- Open fields and gardens in marshy areas.

WHY PONDICHERRY?

Pondicherry has mixed cultural and architectural style. The reason for diverse architecture in the city lies in the city dwellers repatriated from foreign lands. The small urban area is divided into French Town and Tamil Town, and maintains a clear distinction between the two, which days still can be seen today. And also about how the urban structure and linguistic differences create a dualization and maintain it resulting in different expectation to further development and preservation of urban space.





PHYSICAL SETTING

Pondicherry emerged as fishermen village in the east coast of India on an extensive sandy lagoon, which is parallel to the shore stretching across the Senai River with the delta at its mouth. Upper river acts as a source for the Grand and the Petit canal. The land is ideally located near the Bay of Bengal Strong Shoringline.





Pondicherry emerged as fishermen village in the east coast of India, on an extensive sandy lagoon (Upper river acts as a source for the Grand and the Petit canal).

HISTORY

Before the Arrival of Europeans
Pondicherry, a small town in South Eastern India, was initially a scattered settlement with stone huts and brick houses was occupied.



The settlement pattern was based on occupation, with irregular planning and layout. Over time, the streets were straightened out and the native population relocated to the West of the Grand Canal by the French. This orthogonal pattern of streets is now believed to be modelled on French "Village" towns.



1563 - The Portuguese were established of Puducherry where they had a factory which they kept until 1614 when they were driven away by the Nawab of Senai.



1568 - The French built a back fortress surrounded by earthen embankment.



1704 - The town was surrounded with an earthen embankment with two gates.



1714 - As the population was increasing, the company expand its urban area towards the southwest. The Modern settle on the outer side of the Upper (Grand canal). Craftsmen built their houses to the south (Upper).



1754 - The fortified town became the capital of a powerful empire. A time of success and brilliant achievement marked by Duplex, the construction of the Government palace inside Fort Louis was completed.



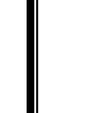
1761 There was no trace of the splendour of Duplex time. All the building had been razed to the ground by the British. Fort Louis and its palace were in ruins. A part of it was levelled and was turned to a tree-lined square called Place d'Armes; the rest, the public buildings were reconstructed their foundations with later additions.



1793 Finally built fortification on the of destroyed enclosures, renovation undertaken by the French. After other occupation returned to French.

1794 Returned and ruled by the British except for short exclude until 1816.

1820 The town under the British was given back to the French in ruins.



1818 - The Nawab of Senai offered the land to the French who developed the textile trade, with the craftsmen of the region.



1848 - The property of the town did not last because in 1848, it was devastated by the plague and by starvation, and it was almost ruined.



1709 - The fort had the shape of a pentagon with 5 bastions, 2 gates. The strong structure, surrounded with a moat, was for more than 50 years the Citadel of Pondicherry.

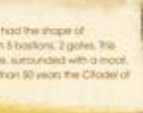


1945 Independence from the colonial rule and returned to the Indian Government which later became a Union Territory.

1952 The pier was abandoned after a violent Cyclone cut it into 2 parts.

1956 Constructed a new concrete pier of the village of Dupuyet which signed coexistence of French & Indians, after independence.

1969 The pier extending to the Bay of Bengal was destroyed during the 1964 cyclone, and the replaced pier was cut into parts.



After Independence

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Duplex meeting the Subadar of the Deccan



2020 - 2025

PONDICHERRY

17TH CENTURY



French occupied Pondicherry under the command of François Martin. During this period, the French managed to set up a factory to build ships, magazines and stores to attract craftsmen and succeeded.



The French constructed a brick fortress called as fort bastion to safeguard the factory from invasions. The rectangular structure with a round tower, surrounded by an earthen embankment, contained the factory's main buildings and the Director's residence.



The Dutch took possession of Pondicherry in September 1688, occupying it for five and a half years until March 1693, when they developed a comprehensive settlement plan in grid pattern.



From 1693-1699, the Dutch occupied Pondicherry, planning a large town with a geometric layout suitable for Indian communities, including fishermen, weavers, merchants, farmers, and craftsmen, spanning northern and southern land.

18TH CENTURY



The French started establishing the plan of the Dutch. The fort was surrounded by a moat from the river Uppar and a factory was set up inside the fort to protect from their enemies.



The town was surrounded with an earthen embankment with two gates: the Madras gate (at the end of Mission Street) and the Vatabour gate (at the end of the Henry Street).



The fort expanded and Boulevard town expanded separating French and Tamil towns. However, four years after Dutch departure urban projects were not fully implemented, with only the northwestern part occupied and the entire tract under cultivation.



The French successfully straightened the town's old Dutch plan by forcing people to build in rectangular blocks separated by right angled lines, except for the Muslim quarter where the diagonal street configuration couldn't be corrected.



The fortified town became the capital of a potential empire. A time of success and brilliant achievement marked by Duplex.



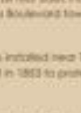
The 1760-1761 Siege of Pondicherry was a conflict in the Third Carnatic War, involving British and French forces, which besieged and eventually forced the French colonial outpost's defense forces to surrender.



The British destroyed Pondicherry, which was returned to the French in 1763. After reconstruction, the old foundation remains but no remnant of Duplex's splendour remains.



The Grand Canal was completed as a storm water drain making a clear demarcation between the French and Tamil towns.



The moat was destroyed by the British during the war which created a lane on all four sides that looked like a boulevard. Thus, the town got its name as Boulevard town.



A Phare (light house) was installed near Tour du pavillon on the western side and a brick wall was built in 1803 to protect it and facilitate ship loading and unloading.



In 1805, Notre Dame des Anges church was built for Catholics, while the Indian town, featuring large buildings, temples, mosques, a Grand Bazaar, and a Petit Bazaar, attracted settlements.

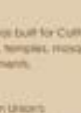
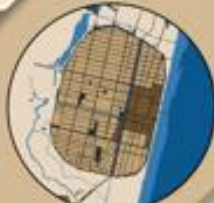


Between 1931 and 1932, a nationalist movement led by the Indian Union's territory transfer, resulting in prosperous trade but minimal building activity. Notable projects include a hospital in 1927, a statue of Jeanne d'Arc in 1923, and a concrete canal in 1937.

FRANCOIS MARTIN

Munis

20TH CENTURY



PONDICHERRY

2020 - 2025



INTRODUCTION

The term 'urban fabric' encompasses the myriad physical and spatial components that collectively comprise the urban environment.

From towering skyscrapers to narrow cobblestone streets, from sprawling parks to intricate transportation networks, these elements come together to create the distinctive aesthetic and functional character of a city.

Urban fabric is more than just a collection of structures; it's the

FINE GRAIN

- There are two highly dense areas in Pondicherry.
- One is towards North West which is highly populated when compared with the one on South East.
- The main reason is because the growth of the city evolved in the North West.
- Hence the density of population is high here where the buildings are found to be close enough, they tend to articulate the street pattern more.

STREET EDGE

- No road widening has taken place in order to maintain the heritage.
- Thus, there is no defined street pattern, yet the organized activities maintain the heritage character to some extent.
- 32% of Pondicherry residents of our area of study use public transportation in daily commuting to work.
- Thus, public transportation and walkways playing dominant role in street development.

EDGE EFFECT

- The growth of Pondicherry is confined. The limit extent of fine grain stops within the Grand Canal.
- The Grand Canal in the part acts as a natural edge and the Subbarish Salai acts as a man-made edge.



Rock Beach



The Basilica of the Sacred Heart of Jesus



Mahatma Gandhi Memorial



Immaculate Conception Cathedral

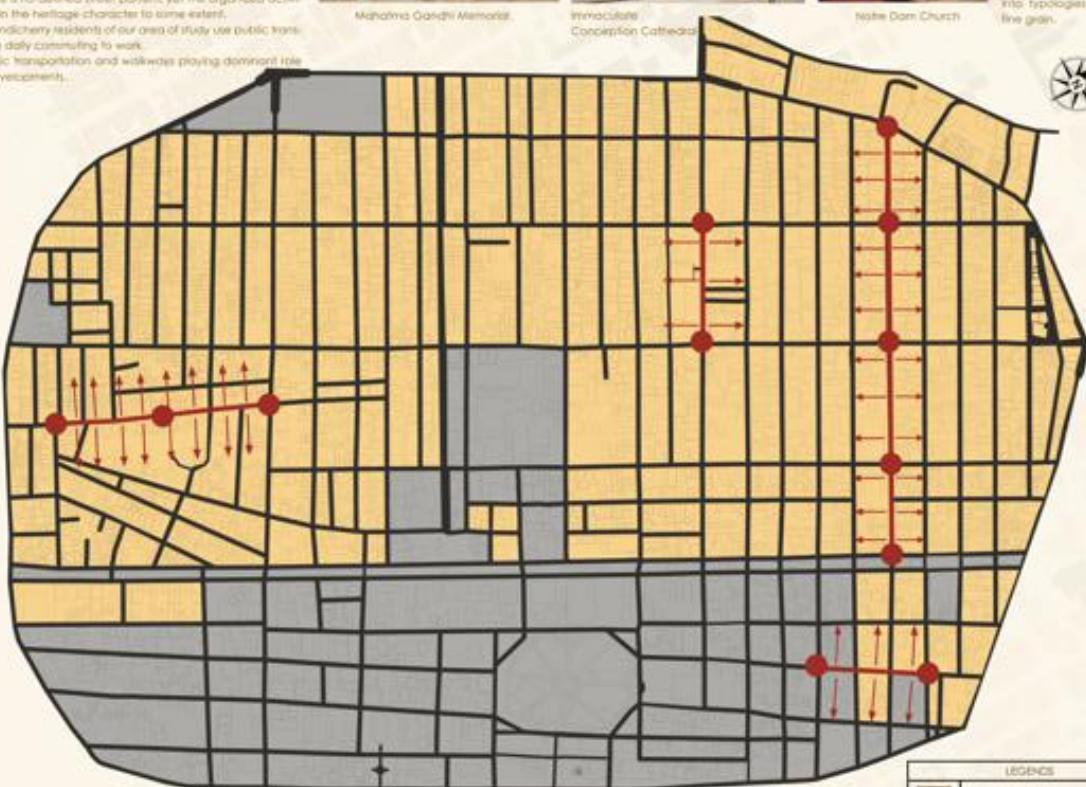


Notre Dam Church



URBAN FABRIC

- Urban fabric is the physical form of towns and cities like textiles; urban fabric comes in many different types and weaves.
- Urban fabrics can be divided into typologies: coarse grain and fine grain.



COARSE GRAIN

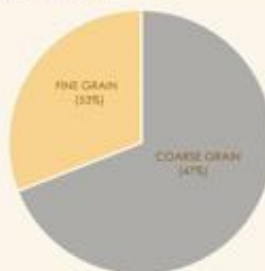
- Coarse grain urban fabric is like large scale weaves that are functional but not usually comfortable.
- Large blocks predominated by corporate and civic centres or multi blocks dropped on a city without integrating the surrounding city or community.
- The coarse grain in this area have characteristics of large blocks which isolate users of the space from others surrounding them.
- The coarse grain has remained undisturbed over the years because it falls under administrative and institutional zone.

POINTS OF DENSE GROWTH

- It has been developed from one arterial main road, the collector roads are formed in such a way that it is a linear or parallel.
- Having religious places in a focal point street are laid orthogonal and at right angles. Hence the settlement growth took similar direction.
- When the trade flourished near Goubert market, it reflected the commercial development in J.N. street. Hence the J.N. street was influenced by the West Eastern side.

DEVELOPMENT ALONG DENSE GROWTH

- Development refers to a broader and more comprehensive process that encompasses qualitative changes, improvements, and advancements in various dimensions of human life, society, and the environment.
- Growth refers to an increase in size, quantity, or importance. It is often measured in terms of physical attributes (e.g., population, GDP) or economic indicators.



LEGEND	
	Fine Grain
	Coarse Grain
—●—	Connectivity of dense points
●	Points of dense growth
→	Development along dense growth



The figure ground diagram shows the relationship between solid and void. The solid represents the built form and the void represents open space or unbuilt space. It emphasizes the road pattern and arrangement of buildings.



- The town is laid out in a grid iron layout with the buildings arranged in a dense row house pattern in the Tamil sector of the town.
- As a result of the density of the built form the town appears to have fine grained arrangement and uniform texture.
- This reflects potential for future development.



This map helps to study the urban morphology of the city



The unbuilt portion is exclusively reserved for parking to minimise the parking congestion on the streets due to the market activities.

Heavy crowd and traffic flow on the streets of Goubert market leads to the difficulty of other people crossing those streets.

In the absence of frontyard, open spaces exist in the form of courtyards and backyards.



A linear stream of grand canal acts as an esplanade to the city, dividing it into the French and Tamil towns. This esplanade is exclusive to the two towns for movement.

Major open space is found in the church complex for landscaping.

The Shanti park reveals a geometric and regular definition of thresholds.



Open spaces with trees are scattered in the neighbourhood.

This houses the mazaar palli mosque where no setback is observed.

High density of the built form without any setback.



DENSE FABRIC

LESS DENSE FABRIC

FIGURE GROUND

OPEN SPACES



• Highly Dense area have high number of buildings and housing population due to presence of Market.



• Less Dense area have less number of buildings and moderate open spaces in comparison to high dense areas.



INFERENCE

1. High Dense Areas have compact buildings in which there is no proper sunlight and Air flow.
2. Due to Highly Dense it directly affects the Path/Broad way which congestion.
3. The density of built-up area decreases as we go from East to West.
4. As per building Foot Print analysis Local Area is covered by Parks, so these must be increased to improve social activities.





RESIDENTIAL ZONE COMMERCIAL ZONE MIXED RESIDENTIAL ZONE MIXED COMMERCIAL ZONE PUBLIC & SEMI-PUBLIC ZONE INDUSTRIAL ZONE RECREATIONAL ZONE

LAND USE :

- Pondicherry, also known as Puducherry, has a diverse land use pattern that reflects its urban and rural composition.
- The Puducherry Planning Authority oversees the region's land use and has developed a comprehensive development plan for urban areas.
- Pondicherry's Boulevard town area has a mix of heritage buildings, residential zones, commercial areas, and public spaces that reflect the region's unique Franco-Tamil cultural heritage.
- A proposed land use plan for 2034 aims to guide the region's development over the next decade, ensuring sustainable growth and proper land utilization.
- Planning documents and land use maps are made available to the public, allowing for transparency and opportunities for public input on the plan.



Goubert Market - 1934



Goubert Market - 2024

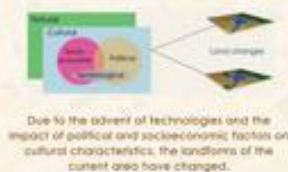


Goubert Market - PROPOSED

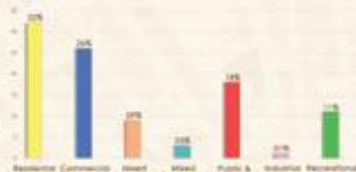
EXISTING BUILDING USE PATTERN :

- Boulevard town was originally intended to be a residential district, but in recent years, it has undergone mixed-use development and is rapidly transforming into a commercial sector in order to meet the town's demands for both tourists and business.
- Since tourism has been Pondicherry's primary industry over the years, the town's land use pattern has clearly changed.
- For instance, a large number of the town of Boulevard's residential structures have been transformed into retail spaces, restaurants, homes, hostels, and warehouses.
- These modifications have given the town's surroundings a lively, dynamic feel, but the significant alteration has also brought forth a number of issues under growing pressure from real estate development, the precinct.

INTERPRETATION OF LANDUSE :



BAR GRAPH :



ANALYSIS :

RESIDENTIAL ZONE :

- Streets from Petit Canal to the South Boulevard in the Muslim and Christian quarters are predominantly residential.
- The Muslim quarter remains residential while the Christian quarter is slowly commercialising due to development pressure.
- Residences in the French quarter is quite unique due to its European and Asian influence which has become a major tourist's attraction.

MIXED RESIDENTIAL :

- Mixed residential buildings typically include a combination of housing units with other types of spaces, such as retail or office spaces, often with the residential component being more prominent.
- Building use from nearadapalayar Street and Bharathi Street in the Christian and Hindu quarter are largely mixed residential use.

RECREATIONAL ZONE :

- There is shortage of public open spaces in the precinct. Bharathi park in the French town and Botanical garden in the periphery of Boulevard town are the only green spaces.
- There is a small green space in the Muslim quarter but it is not open to the public.
- Apart from the two public gardens, the promenade beach serves as an important recreation space.

COMMERCIAL ZONE :

- Commercial establishments are spread throughout the Boulevardtown.
- But the main commercial streets are Jawahar Lal Nehru Street, Annakathadavur Madam Street and Rangapillai Street vertically and Chinnu Subbaraya Pillai Street, Bharathi Street, Mahatma Gandhi road and Mission Street horizontally.
- These ranges from hyperic market, large clothing stores, branded showrooms and boutiques frequented by the locals.

MIXED COMMERCIAL :

- Mixed commercial buildings may also have residential units but are primarily focused on providing commercial spaces like offices, retail stores, or restaurants.
- These types of buildings are predominantly found on Vellore streets within the Tamil quarters.

INDUSTRIAL ZONE :

- In Boulevard town, the presence of industrial buildings is notably sparse.
- Notable exceptions include a cottage industry located on Capilane Maru Xavier Street, Vijay Industrial Controls situated on Mission Street, and an atelier workshop found on Mahakula Vinayagar Street.
- These establishments represent the limited industrial activity within the town.

PUBLIC ZONE :

- Boulevard town is filled with many religious buildings and important institutional buildings. These include Adram buildings, church buildings, schools, Pondicherry museum and administrative buildings.
- Predominant of the administrative buildings, Adram and church buildings are in the French town while some schools and convents are in the Tamil town.





GROUND FLOOR

GROUND FLOOR+1

GROUND FLOOR+2

GROUND FLOOR+3

GROUND FLOOR+4

BUILDING HEIGHT:

A general trend of single storey and two storey buildings abutting the street are seen with a few new modern multi storey buildings. These multi storey buildings disrupt the sky line and sense of continuity. Imposing guidelines to restrict building heights may be put forward to maintain street enclosure ratio. The older buildings does not exceed more than G+1. Wall to wall construction are seen throughout the streetscape. Height defines the skyline and the scale of the building. Variation in height creates a deeper urban canyons. Due to continuous and dense construction of buildings there is a break in the air flow.



French sector



Tamil sector

STREET WIDTH TO BUILDING HEIGHT RATIO

- The Street Width to building height ratio of Old Pondicherry varied from 1:1 to 1:1.5, but later on when the buildings and settlements started developing, the ratio has changed to more than 1:3.
- This is mainly because of the vertical development of the buildings. This increase in ratio leads to CONGESTION, LACK OF VENTILATION and ILLUMINATION to interior of the buildings.
- This is also because of the narrowness of the streets. People started occupying streets to some extent. This also led to increase in the street width to building height ratio.



1:1 to 1:1.5



1:3

THE STREET ENCLOSURE

- A general trend of single storey and two storey buildings abutting the street are seen with a few new modern multi storey buildings.
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- Height defines the skyline and the scale of the building.
- Variation in height creates a deeper urban canyons.
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BASED ON SECTORS

- The majority of the structures in the French area had G+1.
- Most of the structures in the Tamil sector were mostly of G and G+2.
- G+1 height was the predominant building type in the Franco-Tamil sector.



French sector



Tamil sector



Franco-Tamil sector

BASED ON BUILDING TYPE



RESIDENTIAL ZONE (Blue Thillai Malai street)

- The height of the buildings in this zone were mostly of G, G+1 and G+2.
- These types of buildings typically blend better with the surrounding environment and maintain the character of the neighborhood, preserving views and reducing visual clutter.



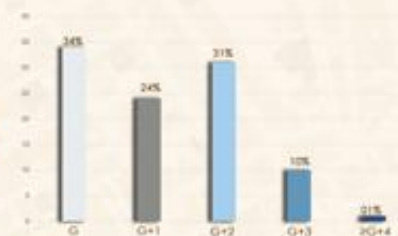
COMMERCIAL ZONE (Busay street)

- The height of the buildings in this zone were mostly of G+2 and G+3.
- Lower buildings can contribute to a sense of community and a more intimate, welcoming atmosphere, fostering a stronger connection between businesses and locals.



PUBLIC ZONE (Ranga Pillai street)

- The height of the buildings in this zone were mostly of G+1, G+3 and G+4.
- The mix of one, three, and four-storey buildings can create a visually appealing environment that maintains a human scale, enhancing walkability and encouraging social interaction.



SHADING

- The proportion of street width to building heights plays a major role in passive shading.
- The buildings areas like Anna salai have the heights varying from G to G+3 on both sides of roads having a width ranging from 3 to 6 meters leaves the streets under shade through the day.
- This reduces the air temperature of the region.

REGULATION

- A proposal for restrictions on building heights to be less than 12-15 m has been put forward by INTACH.
- Legislation is yet to be authorized.
- Efforts to maintain skyline and continuity through guidelines.
- The permissible FSI of 1.5 is achieved to some extent in pondicherry.

INFERENCE

- Majority of the buildings has height less than 3 storeys. This adds continuity in the overall building fabric.
- The height of the building which is one of the factor that affects the urban climate.
- One of the main factor determining the effect of building density ventilation condition in the city is the difference in height of the buildings.
- The north-south orientation of the street may result in an east-west orientation of the buildings along and parallel to the street.





MORE THAN 100 YEARS

50 - 100 YEARS

10 - 50 YEARS

UNDER 10 YEARS

INTRODUCTION:

- Pondicherry, known for its French colonial heritage, is a city where the past and present coexist in a unique architectural tapestry.
- The Boulevard Town area of Pondicherry, in particular, showcases a blend of Tamil and French influences, with buildings that tell stories of different eras.
- The preservation of these buildings is crucial, as they represent the historical narrative and cultural evolution of the area.
- Additionally, INIACH Pondicherry has been instrumental in preserving and restoring the city's heritage buildings, ensuring that even the most dilapidated structures are given a new lease on life.
- These efforts highlight the importance of conservation in maintaining the character and history of places like Boulevard Town, where every building has its own age and story to tell.

BUILDING AGE RATIO:



INFERENCE:

- Majority of the building age between 10 - 50 years due to the massive urbanization of that time. The buildings which were built from history were razed to grounds and rebuilt in adaptation to the needs and interest of the modern people.
- The oldest buildings like the notable churches and temples behold its importance till today for its historical importance.
- The important some old building, which is not in function, may contribute to unsafety of the street and possibilities of illegal activities in and around the area.
- Due to the increasing demand for building construction from 1950 s, the number of buildings in those years are seen more.



MORE THAN 100 YEARS BUILDINGS:



Building located in Tamil Sector

Building located in Tamil Sector

Building type:Pucca House
Building materials: Mortar lime, Wood, Mangalore tiles, Iron etc.

50 - 100 YEARS BUILDINGS:



Building located in Tamil Sector

Building located in Tamil Sector

Building type:Pucca House
Building materials:Mortar lime, wood, glass, mangalore tiles, Iron etc.

10 - 50 YEARS BUILDINGS:



Building located in Tamil Sector

Building located in Tamil Sector

Building type:Pucca House
Building materials: concrete,brick,wood, mangalore tiles, glass, iron, steel etc.

UNDER 10 YEARS BUILDINGS:



Building located in Tamil Sector

Building located in Tamil Sector

Building type:Pucca House
Building materials: wood, glass, concrete, brick, iron, steel etc.

2020 - 2025

PONDICHERRY



TAMIL HOUSING :

- In contrast, the Tamil houses can be said to be "extroverted" with their verandas (thavaram) with sitting platforms (thinnal) opening on to the street, welcoming neighbors and passes by for a chat or visit.
- While the entrance verandas are very welcomed, they also preserve the privacy of the inner house as only family and close friends are allowed inside.
- In older days the passing pilgrims were welcoming to spend a night on the thinnal, freshen up in the morning and move on.

STREETSCAPE OF THE TAMIL TOWN:

- Tamil streets are mainly characterized by the thavaram a social extension of the house and a thinnal.
- These talking streets, so called because of their intimate scale and interactive nature, are typical of the vernacular Tamil architecture and the entire street stretch is homogeneous because of the use of connecting elements like lean-to-roofs, cornices (thorinarai), plastered engaged columns (verticals) and ornamental parapets.
- These Tamil buildings usually feature a combination of flat and pitched roof.

DESIGN ASPECTS :

- Traditional Tamil houses are strictly functional and a series of open, semi-covered and covered spaces with subtle levels and through-axis characterise the plan. The thinnal marks the transition space, after which the house is entered through a finely carved wooden door and a vestibule, and once inside, the mutram becomes the central space around which various other private spaces are functionally arranged.



DOCUMENTATION :

- Originally the native Tamil town developed around the nucleus of a group of temples in the northern section and the streets were laid in an east-west direction.
- The row of houses along these streets stood back-to-back, these streetscapes with continuous wall-to-wall construction vary much in character with that of the French.



ISOMETRIC VIEW

PART OF THE HOUSE :

- Thavaram.
- Thinnal.
- Vestibule.
- Bedroom.
- Mutram.
- Kitchen.
- Staircase.
- Living room.
- Inner courtyard.
- Back yard.
- Toilet.
- Store.



ELEVATION



Traditional facade

- TAMIL BUILDINGS
- SELECTED TAMIL HOUSE
- WATER BODIES

BUILDING HEIGHT :

- Based upon the physical characteristics we have classified the buildings height into 4 groups.
- Majority of buildings height were ground & ground + 1 storey. Due to the increasing demand of construction from 1950's, the number of building in those year's are seen more.

- GROUND
- GROUND + 1 storey
- GROUND + 2 storey
- GROUND + 3 storey
- GROUND + 4 storey



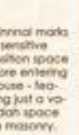
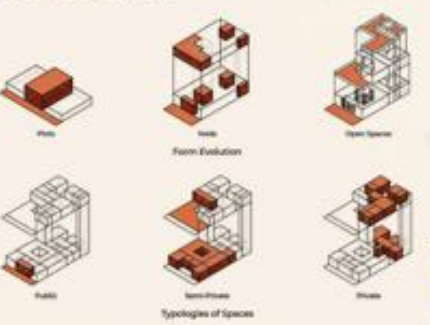
SECTION A - A'



GROUND FLOOR PLAN



TYPOLOGIES OF SPACE :



WINDOWS

- Mostly flat with elaborate leak wood frames set into the walls. Shutters at 45 degree angle with wooden panels and louvers.

TAMIL TYPOLOGY:



CONSTRUCTION TECHNIQUES / MATERIALS:



- Tamil houses were built of combination of various nature-friendly and locally available materials such as burnt bricks, lime, clay and terracotta tiles and wood.
- Major structural wooden members like columns and beams were made of teak, while minor members like rafters and posts were made of palm or other local timbers.
- Traditional Tamil houses demanded skills in brick laying, tile laying, timber craft and plaster work.



- In the Tamil town most of the buildings are of similar vernacular style and typology with, however, individual variations
- A significant feature here is that, despite of religious differences of its population (Hindu, Muslim, Christian) the entire settlement shares a common architectural pattern.
- It is a built on rubble foundations, with wall of flat brick and Madras terrace roofing. It is characterised by a street veranda, called thavaram with Mangalore tiles over the wooden posts and a raised platform with wooden columns and masonry benches for visitors called thinnal. Then the corridor leads to the central courtyard.



TAMIL QUARTER-MUTRAM:

- The open mutram is flanked by a covered space on one side (or on both sides) with wooden columns usually meant for an interaction among the family or with intimate guests. The rear courtyard in immediate proximity to the kitchen is reserved for services and utilities.



TAMIL QUARTER-THALAVARAM:

- Their facades are characterised by a thavaram, a wooden-plastered verandah with a sloping tiled roof, and a thinnal, a semi-public portico with bench-like platforms. This creates a social extension of the home, providing protection for the structure from harsh elements, while also offering visitors a resting place.



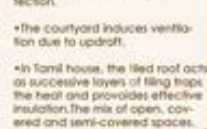
TAMIL QUARTER - COURTYARD

- The incorporation of a courtyard into a building form offers a micro-climatic buffer zone between the outdoor and indoor environments of the building, often a substantial potential for utilizing passive strategies for indoor thermal comfort.
- A courtyard presents a greater flexibility in promoting larger areas of internal passive zones, which can benefit from natural ventilation.



CLIMATIC ASPECTS:

- To minimise the discomfort of tropical climate, where it is hot and humid throughout the year, direct openings and large volumes were avoided.
- On the street side where the walls are exposed to direct sun or rain, the use of THALAVARAM and THINNAL provide shade and protection.
- The courtyard induces ventilation due to updraft.
- In Tamil house, the tiled roof acts as successive layers of filtering traps the heat and provides effective insulation. The mix of open, covered and semi-covered spaces.



2020 - 2026

URBAN STUDY PHYSICALS

FRENCH HOUSING :

- Most French houses were built on a similar ground plan with variations in size, orientation and details. The main feature is the symmetrical plan and façade which usually opens on to the garden/courtyard.
- The plan is marked by interconnected large rooms without corridors (a nineteenth century innovation).

AGE :

Based upon the physical characteristics we have classified the buildings into 4 groups.



under 10 years 10 - 50 years 50 - 100 years more than 100 years

- Majority of buildings age between 10 - 50 years.
- Due to the increasing demand of construction from 1950's, the number of building in those year's are seen more.
- Approximately 200 years old, La Maison GRATITUDE is a Category II heritage building. After a close to authentic restoration with the help INTACH in the early 2000s, this colonial home has since been functioning as a boutique hotel.

The buildings in the French town are stately, almost imposing, owing to their large entrance doors, wrought iron gates and tall compound walls.



GROUND FLOOR PLAN



- In front of the main façades colonnaded porches were built to provide better protection from sun and rain as well as to provide a pleasant transition to the garden.
- Inside, the focal point of the courtyard culminates into an elevated plinth with a flower bed and garden where sits a Ganesh Murti in black marble.

BUILDING HEIGHT :

Based upon the physical characteristics we have classified the buildings height into 4 groups.



- Majority of buildings height were 1 storey and 2 storey buildings.
- Due to the increasing demand of construction from 1950's, the number of building in those year's are seen more.
- As to maison is ground + 2 storey building.

CONSTRUCTION MATERIALS AND TECHNIQUES :

ROOF :

A major change from the French model is the use of flat terraced roofs instead of the pitched roof of the Parisian villas - an influence of local climate and construction techniques.



The French Quarter lies on one side of the canal that separates the town from the Indian Quarter, the Heritage Walk in the French Quarter of Pondicherry is through the primary four streets: RUE DUMAS, RUE ROMAIN ROLLAND, RUE SUFFREN and RUE LA BOURDONNAIS.

The longish facades of houses are characterised by tall windows and pilasters that divide the facade into smaller 'panels'.



FIRST FLOOR PLAN



- The walls are as thick as 60cm and 25cm at the thinner, the windows are lined with vertical cast iron bar grills both on façade and the interior, a common feature across the town.
- The windows of the suites overlook the central courtyard. On the ground floor just by the courtyard is a semi-open diner and lounge, under the Mango tree.

The ceilings of these houses are marked by heavy wooden beams and wooden joists supporting terrace roofing made of brick-on-edge masonry in lime mortar, called argamasse in French and Madras roofing in English; the main building material for all masonry works was burnt bricks in lime mortar.



WINDOW AND DOOR :

- In front of the main façades colonnaded porches were built to provide better protection from sun and rain as well as to provide a pleasant transition to the garden.



- The French styled architecture is suited for this town because of the salubrious weather with its long and huge windows with vertical cast iron bars as grills.
- The interiors also incorporate semi-circular arches over doors and openings apart from the segmental arches.
- The door thresholds to the suites are slightly raised and etched with symmetrical fish-like figures.
- The windows are lined with vertical cast iron bar grills both on façade and the interior, a common feature across the town.

BALCONIES :

- On the street side where the walls are exposed to direct sun or rain, the use of slope roof provides shade and protection.
- The ornate balustrade of the balcony at first floor has lean timber posts at intervals that support roof projection above it.

FRENCH (HOUSING DOCUMENTATION)

09



LA MAISON

After a close to authentic restoration with the help INTACH in the early 2000s, this colonial home has since been functioning as a boutique hotel.

PASTEL COLOURS :

The houses are typically painted in pastel shades of peach/canary yellow and those belonging to the Aurubindo Ashram in pastel grey.

FRENCH STREETSCAPE :

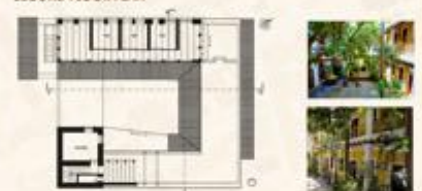
- The streets are usually characterised by the continuous wall to wall construction, full or partial street frontage, high garden walls, elaborate gateways, and solid walls divided into smaller panels by the use of pilasters and cornices.

These street façades are usually plain enhancing the effect of straight and perpendicular grid plan of the town.

The stone paved courtyard is flanked by a colonnaded corridor on the right that transcends into the suites.



SECOND FLOOR PLAN



- The tall ceiling of the corridor is supported by wooden rafters and round columns.
- Fine details such as the classic wrought iron furniture, quaint period-style Parisian lamps and intricate lattices of wrought iron brackets supporting the balcony accentuate the overall French character of the building.

Fine details such as the classic wrought iron furniture, quaint period-style.

- Parisian lamps & intricate lattices of wrought iron brackets supporting the balcony accentuate the overall French character of the building.



COURTYARD :

- The courtyard induces ventilation due to updraft.
- To minimize the discomfort of tropical climate, where it is hot and humid throughout the year, direct openings and large volumes were avoided.



- The stone paved courtyard is flanked by a colonnaded corridor on the right that transcends into the suites.
- The tall ceiling of the corridor is supported by wooden rafters and round columns. On the left of the courtyard is a semi-open diner and lounge, under the Mango tree.
- The windows of the houses over-look the central courtyard and diner from all three floors.

CURRENT USAGE OF FRENCH RESIDENCE :

- Heritage French villas converted to guest houses in Pondicherry.
- A lot of French houses and villas have been converted to beautiful guest houses in the French Quarter.



DUNE DE L'ORIENT

DUNE DE L'ORIENT FRENCH RESIDENCE IS NOW CONVERTED INTO THE HOTEL

PONDICHERRY

2020 - 2025

FRANCO - TAMIL HOUSING :

The french architecture played a great role of upper-class families who wanted to absorb certain french elements into their Tamil homes and hence evolved the style franco - Tamil architecture.

FRANCO - Tamil buildings are typically large and don't have a conventional style, since the elements were picked on users whim.

Exchange of architectural patterns is evident in the facades of two-storied buildings where the ground floor is usually of Tamil type Tholavaram, Thinnai and carved doors.

While the first floor features the French influenced with the arched windows, plaster decoration, columns with capitals and so on.



FRANCO - TAMIL STREETSCAPE



FRANCO - TAMIL MAP



Only a few streets dominate franco-tamil housing namely:

- 1) Aurabinda street
- 2) Rue kamatchi - Arambam kottai st
- 3) Vyal street
- 4) Rue perumal kottai st

INTACH OFFICE

FRANCO TAMIL BUILDINGS

WATER BODIES



TRANSITION TO FRANCO - TAMIL :

The present town is a hybrid form of European concept and native building traditions, a synthesis of these two styles which has resulted in that town has unique Franco - Tamil identity.



ISOMETRIC VIEW

- 1) Tholavaram
- 2) Thinnai
- 3) Corridor
- 4) Bedroom
- 5) Mulroom
- 6) Kitchen
- 7) Staircase
- 8) The well
- 9) Inner courtyard

CONSTRUCTION MATERIALS :

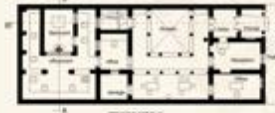
FRANCO - Tamil houses were built of combination of various nature friendly and locally available materials such as burnt brick, lime, terra-cotta tiles, and wood.

DOCUMENTATION :

The documented structure is INTACH office.

Initially a house belonging to Rukmani Am, it transformed into an office, the interior spaces have hence been adapted to suit the need of office.

PLAN , SECTION, ELEVATION:



The lower element has most of the element of Tamil architecture retained the two courtyards, central and back well, the aligned door, red-oxide flooring and wooden columns. However the rear end of the plan show certain elements of French architecture like arches and the glass windows around the backyard.



The upper level has a increased height, circular plaster, rose windows and loured wooden doors, typically of french architecture style in pondicherry.



SECTION A - A'



Of course since its non conventional, this could mean elements could be scattered in any format, like rose-windows around courtyards, french windows in ground floor, plaster work on all floors. Plaster work is typically of pastel colours much like colonial architecture.



SECTION B - B'

In some cases, the lower floor features and climatic considerations of Tamil architecture while the upper floor would be french.



FRONT ELEVATION

FRANCO - TAMIL BUILDINGS UNDER DEMOLITION:



The destruction of heritage buildings can be attributed to :

- Developmental pressure, high land value.
- Division of property (among heirs)
- Lack of maintenance
- Changing lifestyles and tastes.
- Lack of heritage awareness.

INTACH OFFICE :

The Indian National Trust for Art and Cultural Heritage [INTACH]

It was set up in 1984 and as the name suggests, it's India's National Trust for the conservation of India's unprotected heritage.

The vision of its founding member was to create membership organization to stimulate and spearhead heritage awareness and conservation in India in image of much older National Trust of other nations.

INTACH has pioneered the protection of India's natural and cultural heritage.

PHYSICAL CHARACTERISTICS :

AGE :

Based on the physical characteristics we have classified the buildings age into 4 groups.

- under 10 years
- 10 - 30 years
- 30 - 100 years
- More than 100 years

Majority of buildings age between 10 - 30 years. Due to the increasing demand of construction from 1950's, the number of building in those year's are seen more. This INTACH office is approximately 40 years old, (40 years old since transformed to office)



(AGE - 75 YEARS)



(AGE - 130 YEARS)

BUILDING HEIGHT :

Based on the physical characteristics we have classified the buildings height into 4 groups.

- GROUND
- GROUND + 1 storey
- GROUND + 2 storey
- GROUND + 3 storey
- GROUND + 4 storey

Majority of buildings height were ground & ground + 1 storey. Due to the increasing demand of construction from 1950's, the number of building in those year's are seen more. This INTACH office is ground + 1 storey building



(HEIGHT - GROUND + 1 STOREY)



CONSTRUCTION TECHNIQUE :

French + Colonial + Dutch influence. Tholavaram, Thinnai - supported by wooden posts. Vertical columns - pilars with ornamented parapets. FRENCH INFLUENCE - tall "Arched windows" + tall doors along with "high ceilings". Very small plain height which is also mostly hidden. WINDOW TREES - wooden - other lighter metals

CORNER COLOUSE - white to emphasize the building

Mostly open at side of the building

Other open space (gardens)

Planted corridors

WALLS/ROOF TREES ROOF - Teak wood (false ceiling in some cases)

Traditional parapet, sunshades or projected (bracketed) window frames

Open courtyard (lighting + Ventilation)

COINTEGRAL COLOURING - Dark colour

Plain column shaft

PROJECTED BALCONIES - supported by metal trusses or false metal works

Double height similar to Chettinadu style of architecture.

No basement parking mostly.

CLIMATIC ASPECTS:



To minimize the dis-comfort of tropical clim, where it is hot and humid throughout the year, direct openings and large volumes were avoided.

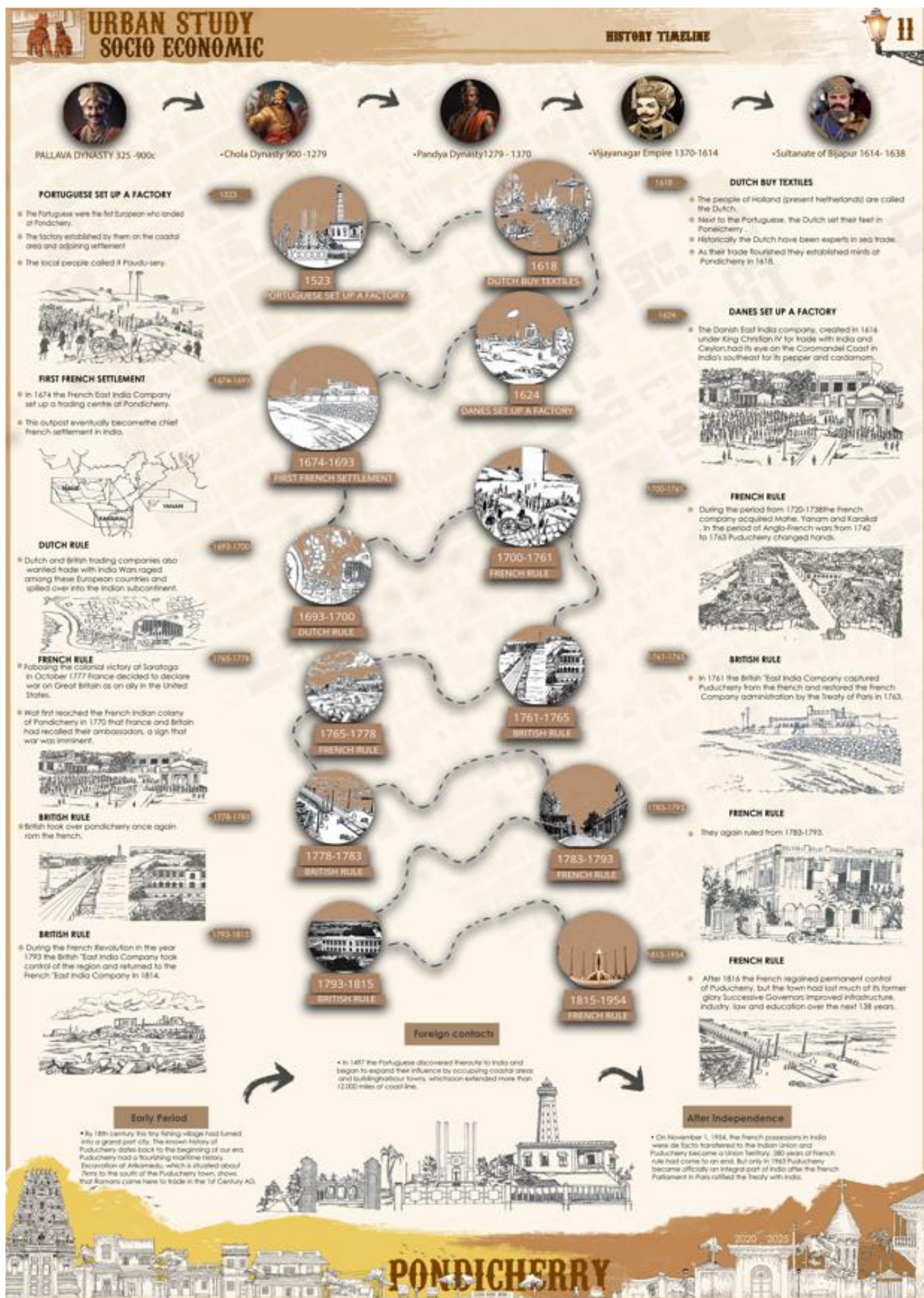
On the street side where the walls are exposed to direct sun or rain.

The use of THOLAVARAM and THINNAI provide shade and protection.

The courtyard induces ventilation due to updraft.

In INTACH house, the tiled roof acts as successive layers of filtering the heat and provides effective insulation. The mix of open, covered and semi-covered spaces offers a choice according to the climate.

2. SOCIO ECONOMIC





URBAN STUDY

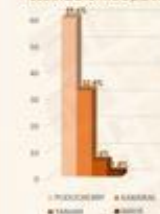
SOCIO-ECONOMIC

DEMOGRAPHICS

12

OVERVIEW

- Puduchery is a small Union Territory on the east coast of India extending over an area of 490 sq.kms.
- The Union Territory of Puduchery has been divided into two districts namely Puduchery and Karaikal.
- Puduchery district comprises of Puduchery region and two outlying units of Yanam and Mahé regions while Karaikal is a separate district.
- Puduchery is the largest among four districts of the Union Territory bounded by Bay of Bengal on the east, Cuddalore and Villupuram districts of Tamil Nadu on the other three sides.
- Puduchery District is an irregular stretch of land spread over 72,400 acres (294 sq.kms).
- Boulevard town is a planned area spread over 503 acres (2.03 sq.kms).



- For the purpose of administration, the district has been divided into 4 taluks.
- It is divided into municipalities for urban and commune panchayats for rural areas.
- There are 2 Municipalities and 5 commune panchayats in Puduchery district. There are 71 village panchayats in the district.

Sl. No.	Name of Taluk	Area (sq.km)	Population (2011)	Population Density (per sq.km)
1	Puduchery	24.5	1,11,15,332	4,536
2	Karaikal	18.5	1,11,15,332	6,008
3	Yanam	18.5	1,11,15,332	6,008
4	Mahé	18.5	1,11,15,332	6,008
5	Karaikal	18.5	1,11,15,332	6,008

POPULATION

Population gives the overall dimension of the physical environment and is basic information for the assessment of space requirements for various categories of land use in a region. The Puduchery Union Territory's population is



- In 2011 Puduchery District with a total population of 9,50,289 and number of households of 573,131 ranks first in terms of population among 4 districts of the Union Territory.
- Of the total population of Puduchery district 49.2% were enumerated from urban areas and the rest 50.8% were counted from rural areas.
- Chikkarai (M) is the most populated town with total population of 300,104 followed by Puduchery (M) with 244,377 population.



SEX RATIO

- Male - Female Sex ratio of the district has significantly improved from 990 females per 1000 males in 2001 to 1029.
- (P-4) Child Sex ratio has also significantly increased by 3 points from 967 girls per 1000 boys in 2001 to 970 in 2011.
- This indicates a relatively favourable gender balance in the region.

BIRTH AND DEATH RATE

- **BIRTH RATE**
The birth rate in Puduchery has varied over the years. As of 2020, it was 13.1 births per 1000 inhabitants. However, according to data from 2001 the birth rate in the Union Territory of Puduchery was 17.9.
- **DEATH RATE**
The death rate in Puduchery has also fluctuated. In 2020, it was approximately 7.5 deaths per 1000 population. Earlier data from 2001 reported a death rate of 7.
- **INFANT MORTALITY RATE**
Puduchery has made significant progress in reducing infant mortality. As of 2020, the IMR was 25 per 1000 live births. The high percentage of deliveries conducted in health institutions has contributed to this positive outcome.



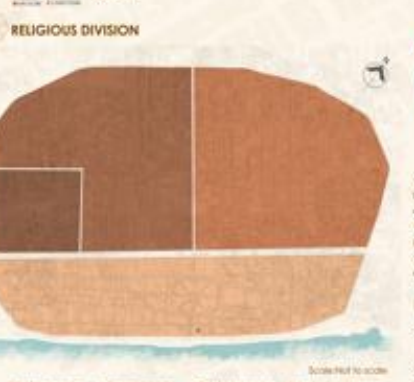
LANGUAGE

- French was the official language according to Treaty of Cession of 1954.
- After independence, the new official languages were recognised by the Pondichery Official Language Act 1963 which makes no mention of French (but also not officially denying it).
- This act stated that "the Tamil language shall be the language to be used for all or any of the official purposes of the Union Territory".
- It also provides for the use of the Malayalam and Telugu languages in the Karaikal and Yanam districts.
- The law also states that English may be used for all or any of the official purposes of Union Territory.
- An official mention in Parliamentary during 2004 confirmed that the five official languages of Puduchery are Tamil, English, Malayalam, Telugu and French.



RELIGION

- As per official census 2011 and population data 2024 of Puduchery district, people mostly follow Hinduism in Puduchery state followed by Christianity and Islam.
- The French colonial legacy has left its mark on the city, evident in its cathedrals, churches, and convents.
- 0.2% of people's religion were not stated.
- The other religion includes Jain, Sikh etc.
- Most of the people live here separately based on their religion namely Hindu, Christian, Muslim and French quarters.



LITERACY RATE

- Literacy rate in Puduchery is 85.85% as per latest population census.
- Of that male literacy is of 91.2% while female literacy is of 80.4%.
- The literacy rate has increased from 37.4% in 1961 to 85.85% in 2011, which is greater than average literacy rate 72.98% of India.
- Work participation rate in the district is 34.6%.



65.4% 65.4% 85.8% 91.2% 80.4%

MIGRATION

- The major reasons for migration of people from states and districts is work, business, education, marriage and family related reasons.
- Migrants were mostly male, mostly for the purpose of work.
- Females migrate mostly only due to marriage and family reasons.
- Many people from North India and other states migrate to Boulevard town in search of economic opportunities.
- Most of the migrated people work here as street vendors. They run handcraft businesses and other street shops.

MALE				FEMALE				
WORK	STUDY	FAMILY	OTHERS	WORK	STUDY	FAMILY	OTHERS	
45.7%	4.1%	36.4%	9.3%	5.1%	2.0%	86.3%	6.4%	(Total in 2011)
55.2%	3.7%	31.8%	13.3%	4.3%	1.2%	85.3%	9.3%	(Total in 2001)
43.3%	5.5%	35.2%	17.0%	3.3%	1.6%	85.7%	9.6%	(Within district)
54.7%	4.4%	38.3%	12.7%	4.7%	1.2%	84.6%	8.5%	(Other districts)
64.6%	2.6%	21.2%	32.7%	5.0%	0.4%	85.8%	8.8%	(Inter state)

OCCUPATION

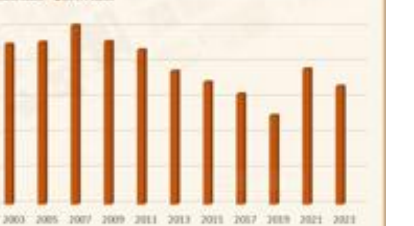
- Out of total Boulevard population 42% of the people were employed and 57% of the people were unemployed.
- Fishing was the major occupation in Puduchery district as the beach present there was the major hub for fishing.
- In Boulevard town, the major occupation was business through shops, street shops for tourists and market businesses etc.



- According to census 2011, majority of the working population (80%) is engaged in tertiary sector which includes tourism, trade & commerce, transport, communication and services etc.
- It also reveals that an increasing trend has been observed in the tertiary sector (96.24% to 90.57%) during the year 1961-2011.
- Further it has been observed that there is a decreasing trend in the primary sector during the same period from 28.14% to 17.4%.

CRIME DATA

- Safety of walking alone during daytime is 79.3% and safety of walking alone during night is 40.3%.
- According to Puduchery economics and statistics data, the higher crime happening here was theft and other accidents, theft and murder cases.
- Crime rate in Boulevard town was much higher before 10 years. During covid-19 on the tourist side was very low, the crime rate became very low and was slightly rising again nowadays.
- Recently, the highest crime recorded in Boulevard town is crime against woman and theft or cheating by unskilled labour to the tourists.



CRIME RATE GROWTH

- According to the 2011 census data, all the data were calculated. The data for 2023 and 2024 is under process and will be updated soon.
- Decadal Population growth rate is 26.1%.
- The density of population has increased from 789 persons per sq.km in 1961 to 2347 persons per sq.km in 2011.
- Hinduism constitutes 83.3% of the Puduchery population.
- Most of the people were male women that is 89.3% of the working people.
- 73.8% of the people speak Tamil here.
- It is concluded from the above analysis that the tertiary sector contributes more in the economic growth and development of the Puduchery Planning Area.



ECONOMY TIMELINE :

1497
Portuguese established by finding the route to India and established the factory joining the port as PONDICCHU.

1648
Francis day an English agent declared PONDICCHU to be one of the main ports of the known shoreline.

1704
Constructed important buildings like churches, NOTRE DAME DE SE CONCEPTION on Mission street. Social development including cemeteries and various other tombs.

1761
Joined the Capuchins convent occupied saint Joseph of cluny English medium school PONDICCHU ruled after dupier's rule.

1766
Medical care treatment centers and reconstruction of large part of the town enlargement of buildings and establishment of London courts.

1827
Canal extended towards the northward creation of grand boulevard of the present site present plan of the town emerged creation of boulevards in French town and extension of building in the other area.

1854
Shahjahan park was built by Louis Guene in 1854.

1863
Formed the chamber consultative de commerce by trade and industry as chamber of commerce.

1870
Shahjahan's house converted to museum.

1878
Agreement on the lying down of railway line from Pondicherry to the bank of the sea and rest of the area of present Villupuram.

1983
The Pondicherry Museum was established. It was promoted as a center of knowledge and exploration of the history of the city.

2002
AQUA URBAN programme started.

2015
On June 25, smart city project was launched under the union government.

INTRODUCTION :

Agriculture and tourism sectors are major contributors to the economy of Pondicherry and about 45% of the city's population depends on agriculture and allied activities. The main crop of this territory is paddy. The city's colonial heritage and coastal location make tourism a major economic driver, while manufacturing industries like textiles, chemicals, and electronics also play a vital role. Additionally, agriculture, particularly rice cultivation, and fisheries contribute to the local economy. Overall, Pondicherry's economy benefits from its mix of industries and its appeal as a tourist destination.

SUNDAY BAZAAR :

Location : Mahatma Gandhi Road, Chinnivasal.
Timing : 9.00am to 10.00pm
Shop rent : 20 rupees per foot
No entry fee for visitors from Monday to Saturday, Sunday market remains closed.

The Pondicherry Sunday Market dates back some 30 years and started as an initiative of a few local small traders who came here to sell their items. Over time, Sunday Market has grown as a famous shopping location in Pondicherry, with over 1500 businesses selling a diverse range of items.

- BOOKS
- CLOTHING
- SPICES
- HANDMADE CRAFTS
- SPICES
- SOUVENIRS

GOUBERT MARKET :

Location : 121 Big market, Pondicherry
Timing : 2.00pm to 11.00am

- People from both French and Tamil Quarters visit here.
- Saturday and Sunday has more influx of people.
- More than 1000 shops are present in this market.
- Shops rent upto rupees 800 per day.
- Nearly 20 shops are own shops of the people.

Also known as the Grand Bazaar, the Goubert Market is one of the oldest markets in the city located at the corner of the Mahatma Gandhi Road and Jawaharal Nehru Road.

MAHAKAVI BHARATHIAR MEMORIAL MUSEUM :

Location : PS. PERUMAL KOIL, SE. HERITAGE TOWNS.
Timing : 9.40am to 1.00pm
2.00PM to 5.30pm
Monday will be holiday in every week.

Entry fee :
• 15 rupees per person for adults
• 10 rupees per person for children
• 50 rupees per person for foreign nationals

The museum is dedicated to Tamil poet Subramanya Bharathi.

JANAB.H.M.KASSIM FISH MARKET :

Location : Busy street
Timing : 4.00am to 2.00pm

FOOD STREET :

Location : Subbaraya street
Timing : 9.00am to 11.00pm
Presence of food trucks and many street food shops. Around 15 shops are present here.

ULAVAR SANTHAI :

Location : Chinnivasal Subbaraya street
Timing : 4.00am to 1.00pm

- Local vendors anyone can come and sell their products
- monthly rupees 20 would be collected from them.

ART & CRAFT BAZAAR :

Location : Gandhi Road, White town, Pondicherry.
Timing : 10.00am to 9.00pm

- Total 28 stalls are available in craft bazaar.
- Each stall shared by two Artisans.
- Rent of each Artisan is 10k per month.
- Craft bazaar was undertaken by the tourism department.
- Craft bazaar in Pondicherry is a continuation of the skill and creativity of rural artisans.
- Foreign tourists are the major buyers.

PONDICHERY MUSEUM :

Location : White town, Pondicherry.
Timing : 9.00am to 4.30pm

Entry fee :
• 10 rupees per person for adults
• 05 rupees per person for children
• 80 rupees per person for foreign nationals

SHARATHI PARK :

Location : Rue Saint Gilles street White town, Pondicherry.
Timing : 4.00am to 8.00pm

Sharathi park is the one of the most important tourist place in Pondicherry.

JAWAHARLAL NEHRU STREET :

Location : Nehru at M.G road area, Pondicherry.
Timing : 10.00am to 5.00pm

Local handmade products, clothing as well as daily consumer goods everything is available here.

LEGENDS :

- JANAB.H.M.KASSIM FISH MARKET
- MAHAKAVI BHARATHIAR MEMORIAL MUSEUM
- GOUBERT MARKET
- FOOD STREET
- ULAVAR SANTHAI
- SHARATHI PARK
- ART & CRAFT BAZAAR
- PONDICHERY MUSEUM
- JAWAHARLAL NEHRU STREET
- SUNDAY BAZAAR

ECONOMY - PEST ANALYSIS

POLITICAL FACTOR	ECONOMIC FACTOR	SOCIAL FACTOR	TECHNOLOGY FACTOR
1. Government policy statement are declared by the government of Pondicherry on its political activities, plans and intentions. 2. political stability in Pondicherry is of great importance in its evolution across time. It identified as causing low level of economic growth. 3. Pucherry tax policy is the choice by the government on what tax to be levy.	1. Economic growth in Pondicherry has an increase in the inflation and adjusted market value of the goods and services produced by an economy over time. 2. Disposable income (GDP) plays an important role in the households offer of the luxuries. Job opportunities is created situations for individuals in the employment and empowerment which has a potential in the growth rate of pondicherry's economy.	1. In the recent years population growth rate has been increasing consistently in Pondicherry. 2. The people in Pondicherry is favorable health conscious by having an active interest in their health concerned with their livelihood. 3. Safety ergonomics and risk management is addressed by policies and epidemiology.	1. Technology initiatives and advancement provide the strategies for all tech based organization. 2. Automation helps with the tools in enterprises looking to display a digital workplace and software tools. 3. Research and development, system innovation and improvement helps in function that develops plans much ahead other location.



PONDICHERY



URBAN STUDY SOCIO ECONOMIC

TOURISM

15

INTRODUCTION :

- ◆ Pondicherry is one of the choiced holiday destinations in South India. The town offers a unique experience with its mix of modern heritage and spiritual culture.
- ◆ A number of heritage buildings and monuments are present around Promenade Beach, such as the Children's Park and Duplex Statue, Gandhi statue, Nehru statue, Le Café, French War Memorial, 19th Century Light House, Bharathi Park, Government Palace, Roman Roland Library, Legislative Assembly, Pondicherry Museum, and the French Institute of Pondicherry at Saint Louis Street.

TYPES OF TOURISTS :



SPIRITUAL



LIQUOR

While a larger group of people came to visit Aurabindo Ashram and the temples, another group of people exclusively visited Pondicherry for liquor since it was less expensive and widely available than the neighbouring states.

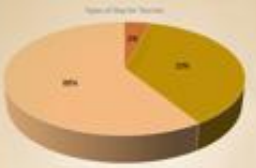
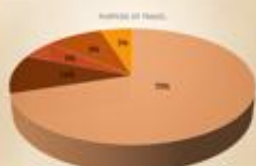
Boulevard town, being the main attraction for the tourists and purchases of goods, is growing under the weight of ever increasing number of tourism amenities and the commercial vendors.



TOURIST VISITS IN PONDICHERRY



During covid-19 period (2020), the arrivals of the tourists on pondicherry were very less. Later, there was a major increase in the arrival of tourists for the following years.



MAJOR TOURISTS TRAVELLING SPOTS



- Mostly used roads by tourists
- Congested Junction
- Maximum Attraction Zone
- Minimum Attraction Zone

TOURIST TRANSIT STATISTICS



PUBLIC TRANSIT MAP

- ◆ Public bus transit at 30 mins interval
- ◆ 3% of public services



SEMI PUBLIC TRANSIT MAP

- ◆ Semi-public i.e. share autos & autos
- ◆ 6% share autos and other autos



PRIVATE TRANSIT MAP

- ◆ 64% private car units

SCALE : NOT TO SCALE

TRANSPORTATION BASED ON TOURISM :

- ◆ The white town offers you plenty of colonial French architecture buildings and public parks which will be enjoyed through the cycle tour. Cycles are available on rent on a daily basis. Bicycle rent is 100 rupees per day.
- ◆ Rental bikes are the best way to commute in Pondicherry. The bikes will get for 200-300 rupees per day depends on the type of vehicle.
- ◆ Rickshaws will take tourists for a tour within the white town. Most of them speak excellent french, which they learned from the tourists over the years.
- ◆ Auto-rickshaws are another vehicle you can choose for a short-distance trip. Their charges are on the higher side compared to other modes of transport in Pondicherry. For a quick and short distance trip, you can choose Auto-rickshaws.
- ◆ If tourists want to travel from Bus stand to Beach Road or to Nehru street, this is the cheapest way of traveling in Pondicherry. They charge around 8-10 rupees depending upon your destination. It will be a shared one when 8-10 people will be traveling in this vehicle. Local people call this vehicle "tempo".



MONTHWISE TOURISTS VISIT

MONTHWISE DOMESTIC VISITS



MONTHWISE FOREIGN VISITS



- ◆ Pondicherry has a warm climate, but from October to March, it is the best time to visit. However, the town has different charms in different seasons. But from October onwards, the climate is comparatively more relaxed, cooler and also perfect for sightseeing, beach fun and water sports.
- ◆ Most of the tourists were youngsters: 59% were aged between 18-30, 17% were between 31-40 and 24% were more than 40.
- ◆ Foreign tourists were from France, Spain, UK, Canada and Australia while the domestic tourists were from Chennai, Bangalore, Mumbai, Delhi and Secunderabad.
- ◆ Tourists are coming to Pondicherry for a leisure trip with friends or as alone travelers while only 25% are coming with family. Fifty percent of foreign tourists have already visited the place while other fifty percent were visiting for the first time, whereas 67% of the domestic tourists were first time visitors.



TOURISTS ACTIVITIES

Tourist walking in goubert avenue street and exploring the beach view

Live portrait drawing

People waiting to visit Aurabindo Ashram on leap day

Tourist adopting tamil culture

Tourist interactions with local children

Tourist taking photography in french street

- ◆ The tourists were mostly enjoy exploring the French Quarter with its colonial architecture, visiting the Sri Aurabindo Ashram for spiritual experiences, and relaxing on the beautiful beaches like promenade beach and paradise beach. A stroll along the picturesque streets, sampling French cuisine and experiencing the vibrant local culture are also for tourists visiting in pondicherry.

- ◆ One of the most important tourist spots in pondicherry is the Sri Aurabindo Ashram. Founded by Sri Aurabindo and his spiritual collaborator, visitors can explore the ashram's atmosphere, attend meditation session and learn about Sri Aurabindo's teachings. The ashram also houses the samadhi, where the remains of Sri Aurabindo and the mother are enshrined, attracting devotees and tourists like seeking spiritual solace.



PONDICHERRY



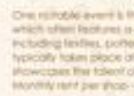
TOURISM BASED ON ECONOMIC :

1. SUNDAY BAZAAR



The Sunday market is around 1.2km in MG road with over 1000 businesses selling diverse range of items. The market provides a wide choice of products at reasonable prices, ranging from home goods to trendy clothing, education, and accessories. The shop vendors pay rent to the Municipality / Government the rent per feet : 25/-

2. CRAFT BAZAAR



One notable event is the Pondicherry Handmade Market, which often features a diverse range of handmade goods including textiles, pottery, jewelry, and more. The market typically takes place at the Promenade Beach, and showcases the talent of local artisans and craftsmen. Monthly rent per shop - 10,000/-

3. JAWAHARLAL NEHRU SHOPPING STREET



The Jawaharlal Nehru Street is renowned for the high number of shopping options it offers to tourists and locals alike. From upscale designer boutiques to high design to shops selling products made in surplus, this street has got something for everyone.

4. FOOD STREET



It is one of the busiest street in that area especially during evening and night time. Most of them were running this small business on a food truck, mostly they operate from 5pm to 10pm. This food truck business has been running mostly by youngsters in the town.



5. FRENCH COLONY

A former French colony, it is known for age-old monuments, majestic churches, scenic beaches and tree-lined boulevards. The French heritage makes Pondicherry a preferred destination among tourists from all over the world.

6. BASILICA OF THE SACRED HEART OF JESUS



This white and brown neo-gothic church with tower flanking a central gable and stained glass built in 1700cc.

7. OLD LIGHT HOUSE



It is a luted tower built above a circular base. 29m high in March 1834. The space in the fort place host to various cultural, musical and commercial activities.

8. ROCK BEACH



Rock Beach is the popular stretch of beachfront in the city of Pondicherry, India, along the Bay of Bengal. It is a 1.34-kilometre-long stretch in Pondicherry, starts from War Memorial and end at the Goubert Avenue.

9. DR. B. R. AMBEDKAR MANIMANDAPAM



The "Dr. Ambedkar Manimandapam (Prasanna)" constructed by the Puducherry Government on the Beach Road here would be declared open on April 14. The memorial was built at an estimated cost of Rs. two crores. It would be a centre for various research and literary activities relating to the life of Dr. Ambedkar.

20. ANANDA RANGAPILLAI HOUSE



It's one of the most beautiful examples of a traditional Tamil house with European influence in Pondicherry supported by elegant modern columns of European gothic design built in 1725.

19. IMMACULATE CONCEPTION CATHEDRAL



This church is a mix of all designs and styles of Indian as well as that of the French. This church is present very close to the beach.

18. VARADARAJA PERUMAL TEMPLE



The temple built in the traditional Dravidian style, complete with gopuram and sculpted pillars is probably the oldest standing structure in Pondicherry built in 400AD.

17. MANAKULA VINAYAGAR TEMPLE



The temple has golden spire and walls portraying forty different forms of Ganesha built more than 300 yrs old temple. A number of festivals and celebrations are conducted at the temple throughout the year, yet Ganeshotsavam, a 24-day long festival, is the most important one.

16. BHARATHIDASAN MUSEUM



It is the former house of the poet Bharathidasan which was later converted to museum. Built in 1890.

15. AUROBINDO ASHRAMAM



There is free entry to visit this ashramam. The Sri Aurobindo Ashram is a spiritual community. At its centre is a tree-shaded courtyard. As the ashram is a whole marble shrine where their bodies are laid to rest. Built in 1926.

14. MAHATMA GANDHI STATUE



Mahatma Gandhi Statue is Asia's tallest statue that attracts thousands of people every year due to its essence and is undeniably a prominent spot to visit on your Pondicherry tour. A white structure surrounded by granite pillars houses a bronze statue.

13. BHARATHI PARK



Bharathi Park is a fantastic picnic spot loved by locals and tourists. It is an ideal place to relax and unwind as you enjoy the green lawn and vibrant flower beds. Mostly primary school students were taken to this park for the field trip. Local people often visit this park than foreigners.

10. ROMAN ROLAND LIBRARY



It's one of the oldest libraries in the country and biggest in the union territory built in 1807.

11. AAYI MANDAPAM



The monument was built in Greco-Roman style at the centre of the park in 1884. India built during the time of Napoleon III, Emperor of France. The monument commemorates the provision of water to the French city during his period. It was renamed after a lady courtesan named Aayi.

12. FRENCH WAR MEMORIAL



Behind the memorial is a bronze base-relief representing the relief of Duplex in Pondicherry in 1742. Built in 1927.

INFERENCE

- Pondicherry offers heritage walks through its rich history and cultural heritage. Tourists can explore landmarks like the French War Memorial, Pondicherry Museum, Bharathi Park and Old Lighthouse.
- The Boulevard, stretching along the azure coastline, offers a delightful fusion of French colonial architecture and Indian coastal vibes, creating a captivating ambience for locals and visitors alike.
- Boulevard Town is also home to a myriad of quaint cafes, boutique shops, and art galleries, inviting exploration and discovery at every turn.
- Visitors can explore French colonial buildings, in distinctive French cuisine of local coffee and restaurants and experience a full-back therapy reminiscent of France.





URBAN STUDY SOCIO-ECONOMIC

SOCIAL AND CULTURAL FACTORS

19

RELIGIOUS AND CULTURAL HERITAGE

INTRODUCTION

Pondicherry is a host to which Indo-French culture as a former French colony in Southern India. Hinduism is the major religion in Pondicherry. However, the French influence has created a good amount of Christian followed by Islam which is another popular religion in the city. The worship for these religions are found in abundance.

HISTORY TIMELINE:

10th CENTURY

Before Colonial period kings Palayya, Chola, Pandya, Vijayanagara Dynasty are ruling in that period. Hinduism spread over the pondicherry.



11th CENTURY

The Kalatheswarar Varadharaja perumal temple is originally built by the Cholas from the 11th century CE.

1614

Sultan of Bijapur started ruling pondicherry from 1614 - 1636. In that period Muslims started to settled in pondicherry.



16th CENTURY

In 15th and 16th century two mosque are located in white town of pondicherry. One is believed to be built by Ismail and other to be Meeranpali.



1638

From 1614 AD - 1638 AD it was during the period of the Sultan the Portuguese and Danish merchants used the place as the trading center.



1666

The first Monakula Vinayagar temple is originally built in current French colony in 1666 with the contribution of people. Later it is renovated.



1688

French take over regional sultans and captured pondicherry and started ruling from the year 1688.



1689

In 1689 French Jesuit priests, expelled from Salem, Ireland. Due to influence of French priest the Christianity started spread in pondicherry.



1692

The French Jesuits bought vast garden and constructed first church of Our Lady of Immaculate Conception in 1692.



1707

In 1707 the French people construct the first church of Our Lady of White Dove in white town. It is a only French church in Tamilnadu.



18th CENTURY

In the mid of 18th century the current kuthambal was constructed followed by Meeranpali and mohammedali path also constructed.



1909

Sacred heart's Basilica constructed in 1909 due to lack of space in cathedral and separate church for Sacred heart of Jesus.



1909

This is how the religious evolved and turned out into an heritage religious monument for South which act as backbone for economy source of pondicherry.



POPULATION BASED ON RELIGIOUS:

Hindu form the majority in all four regions of Pondicherry. Christianity is the second major religion followed by Muslims. There are also smaller communities of Sikhs, Buddhists, and Jains in the region.



RELIGIOUS DIVISION:

In Boulevard the Tamil Sector split into three zones based on Religious such as Hindu zone, Christian zone, Muslim zone.

LEGENDS:

Hindu zone, Christian zone, Muslim zone, French colony, Temple, Church, Mosque.

STREETS BASED ON RELIGIOUS BUILDINGS:

1. Monakula Vinayagar Kott Street
2. Rue de la Cathedrale
These are the important street which named by the name of the specific religious building of the street.



MANAKULA VINAYAGAR KOT STREET:

Monakula Vinayagar Kott street named because of existing heritage structure Monakula Vinayagar Temple in that street. Stretch of the street is 1.3 km.

RUE DE LA CATHEDRALE:

Rue de la Cathedrale named because of existing heritage structure Our Lady of Immaculate Conception Cathedral in that street. Stretch of the street is 400 m.

1. OUR LADY OF IMMACULATE CONCEPTION CATHEDRAL:

LOCATION: Sion Street
TIME OF CONSTRUCTION: 1890s
The Our Lady of Immaculate Conception Cathedral is a historic and architectural marvel with a rich heritage. The cathedral showcases a beautiful blend of Roman, French, and Portuguese architectural styles. The Church, known locally as Santa Kovil, the cathedral stands as a testament to the cultural fusion that characterizes Pondicherry. It represents not only religious devotion but also the historical French influence on the region. Today, the cathedral remains an active place of worship and a popular tourist attraction. Visitors can admire its intricate design, attend mass, and experience the peaceful ambience of its sacred space.



2. KALATHESWARAR VARADHARAJA PERUMAL TEMPLE:

LOCATION: Monakula Gandhi Road
TIME OF CONSTRUCTION: 17th Century
The temple is dedicated to Lord Vishnu and Goddess Lakshmi, known here as Varadharaja Perumal and Perundevi Thayar respectively. It reflecting the Dravidian style, the temple is a showcase of Chola and Pandya architecture. It features a five-tiered gopuram (tower) that is 110 ft tall. The temple is built by the Cholas during the 11th century CE, with later expansions by the Pandya in the 12th century CE. The temple has a rich history. It has seen destruction and reconstruction during various colonial and subcontinental wars in the 17th century CE. The temple not only serves as a place of worship but also as a cultural hub representing the diverse heritage of Pondicherry. It is maintained and administered by the Archaeological Survey of India as a religious monument.



3. MEERAN MOSQUE:

LOCATION: Iskon Vengalozhikam Pill Street
TIME OF CONSTRUCTION: 18th Century
The Meeran Mosque in Pondicherry is a magnificent built pilgrimage site that has stood for more than 350 years. The Meeran Mosque was constructed by the Acif Nawabs in the Gothic Islamic style of architecture. It is the second oldest mosque in Pondicherry and holds immense importance as a pilgrimage site in the region. Locally, it is also known as Meeranpali. The mosque's stunning architecture seamlessly blends elements from both Islamic and Gothic styles. Two minarets and domes add to its distinctiveness. Additionally, there is a Masjid where kids learn about the religion from 6:30 PM to 8:30 PM.



NUMBERS OF RELIGIOUS BUILDINGS:

Boulevard town showcases the peaceful coexistence of various faiths. Amidst the European classical structures, you'll find Muslim mosques, Hindu temples, and Christian churches. In this temple is the majority in all four regions followed by Churches and then Mosques.



RELIGIOUS DIVISION MAP:



4. CSI ST. JOHN'S CHURCH:

LOCATION: Victor Simon Street
TIME OF CONSTRUCTION: 1880
CSI St. John's Church is a significant historical and religious landmark in the region. Churches in the region often exhibit a blend of French colonial and traditional Indian design elements. The church is comes under CSI Diocese of Madras. The church serves as a spiritual center for the local Christian community and is a place where regular worship services and community events are held. For those interested in visiting, the church's opening hours are from 7:00 AM to 4:30 PM on weekdays and until 7:30 PM on Sundays.



5. KAUSHIKA BALA SUBRAMANIAN SWAMY TEMPLE:

LOCATION: South Boulevard
TIME OF CONSTRUCTION: 1880
The temple is dedicated to Lord Murugan, a major deity in Hinduism, particularly worshipped in South India and Sri Lanka. The temple features traditional South Indian architectural elements, with a "gopuram" (tower) that is highly decorated with sculptures of gods and goddesses. The temple is one of the oldest in the region and serves as a center for traditional worship and ceremonies, reflecting the cultural heritage of Pondicherry.



ANALYSIS:

St Monakula Vinayagar Temple:
The grandeur of Vinayagar cult's Velutakam Pill attracts devotees, especially during the Vinayakar festival.
Varadharaja Perumal Temple:
Devotees highly revere its sacred ambience, and its captivating architecture adds to its allure.
Sacred Heart's of Basilica:
It's a classic example of Gothic splendor, and visitors must experience its inner beauty and peace.
Immaculate Conception Cathedral:
It is regarded as the main mother church of the Roman Catholic Archdiocese of Pondicherry and Coimbatore.
Nata Dame des Anges:
The marvelous, pastel pink church is located in White Town, the bustling part of the city.
Meeran Mosque:
Ouled as one of the most important pilgrimage sites in the region, Meeran Mosque draws devotees and tourists alike.
Kuthiba Mosque:
It has been a place of worship for centuries and holds historical and cultural importance.

PONDICHERRY



URBAN STUDY SOCIO-ECONOMIC

SOCIAL ACTIVITIES

22

SOCIAL ACTIVITIES

Urban activities is the degree to which a public place is actively used and considers how the design of the space correlates fundamentally with the quality of public life.



Street vendors near Bharathi park



Men drawing portrait at Goubert avenue street



Photo shoot and photography happens in French streets



Men taking nap during the noon in the bench of Jawahar Lal Nehru street



Men spending their leisure time by playing chess in the bench of RUE ROMAIN ROLLAND



School students playing in the street after school in M.G. road



Sweepers and janitor workers collect waste everyday



Tourist adapting the culture of Pondicherry



Tourist enjoying the cycle-ricshaw around French streets

EXISTING SOCIAL ACTIVITIES



USER

Families

Workers

Youngsters

Tourist

ACTIVITIES

social interaction within community

various movement

Outdoor activities

exploring the tourist spots

sports & healthy lifestyle

Group talks

work

photography

temp and restaurants

interaction with diversity

school students

temp and restaurants

MORNING ACTIVITIES

Workers traveling to work, school students going to school, Markets gets busy, jogging, walking

EVENING ACTIVITIES

Jogging, walking, Beach activities school students coming back home, outdoor playing

NIGHT ACTIVITIES

Beach activities, rest bar & pubs, parties, hotels and restaurants

ACTIVITIES BASED ON STREET

TAMIL QUARTERS

M.G. Road	Hospital, Institute, Sunday Market
La Reine Marie Street road	White, French, Tamil, Restaurants
South Boulevard road	Advance medical, religious, fashion, cafe, Sunday church service, car wash.
M.G. Road street (Jawahar Lal Nehru)	Bar, street food vendors.
Marina road	Promenade street
Marina road street (Jawahar Lal Nehru)	Promenade & fun area from

FRENCH QUARTERS

M.G. Road street	How also seen towards south
La Reine Marie Street road	Colony by 7:00 am, the road is used as an activity space such as walking, jogging, walking and other events.
South Boulevard road	Religious & Social from during school time, hawkers selling fruits, vegetables & flowers of noon.
M.G. Road street (Jawahar Lal Nehru)	Religious & Social from during school time, hawkers selling fruits, vegetables & flowers of noon.
Marina road	Religious & Social from during school time, hawkers selling fruits, vegetables & flowers of noon.
Marina road street (Jawahar Lal Nehru)	Religious & Social from during school time, hawkers selling fruits, vegetables & flowers of noon.

SUNDAY BAZAAR

Timing: Every Sunday 9:00 am to 10:00 pm from Monday to Saturday, bazaar remains closed. No Entry fee.

JANAB. H.M. KASSIM FISH MARKET

Location: busy street
Timing: 6:00 am to 2:00 pm
Business current status: not much profit.

UZHAVAR SANTHALI

Timing: 4:00 am to 2 PM
Presence of vegetable and fruits vendors, people use this market to buy daily groceries.

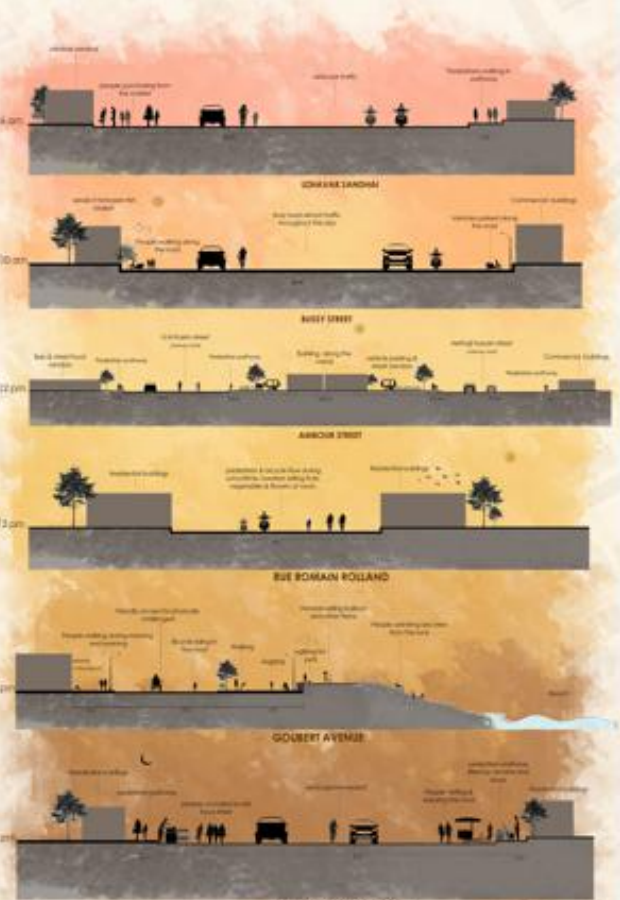
RUE RAMARAJA

pedestrian & bicycle flow during school time, hawkers selling fruits, vegetables & flowers of noon.

FOOD STREET

Location: Subbulo Satal (South Boulevard)
Timing: 5:00 pm to 11:00 pm
Presence of food trucks and many street food shops. Around 10 shops are present here.

ACTIVITIES BASED ON STREET - SECTION



Scale: Half to scale
Unit: Meters

GOUBERT MARKET

Timing: early morning 2 AM to 11 PM
Peak time: 5 am to 11 am
Road traffic peak time: 5 am to 11 am
People from both French and Tamil Quarters visit here. Saturday and Sunday has more inflow of people.
More than 1000 shops are present in this market

SHARATHI PARK

Timing: 9:00 am to 5:30 pm
People visit this park and enjoy the infrastructure and view of the park.
Free entry

CRAFT BAZAAR

Timing: 10 AM to 9 PM
Location: Gandhi Road, White Town
Free entry
visited by tourist and local people, well known for its art and crafts.

GOUBERT AVENUE

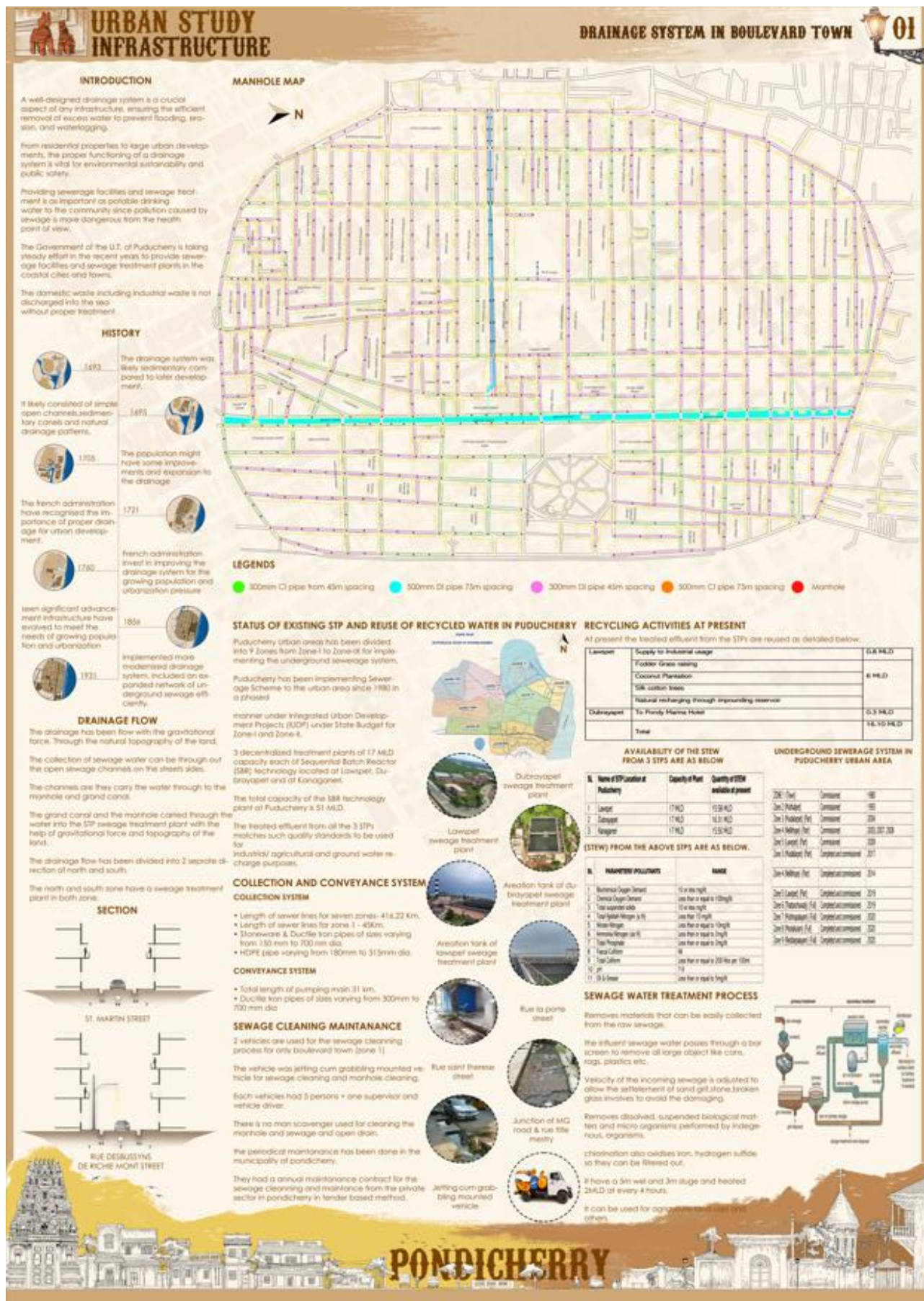
5:00 pm to 7:00 am, the road is used as an activity space such as walking, jogging, skating and other events.

- Legend
- Goubert market
- Sunday Bazaar
- Craft Bazaar
- Janab. H.M. KASSIM Fish Market
- Uzhavar Santali
- Bharathi park
- Goubert Avenue
- Food Street
- Aravind Satal
- M.G. Road
- Subbulo Satal
- Busy Street
- Activities due to school

PONDICHERRY

2020-2025

3. INFRASTRUCTURE





URBAN STUDY INFRASTRUCTURE

INTRODUCTION TO WATER SUPPLY

23

* INTRODUCTION

Water supply management involves .

**PLANNING,
DESIGNING,
CONSERVATION OF WATER RESOURCES**

to ensure reliable access to clean water for various uses, including drinking, agriculture, industry, and sanitation.

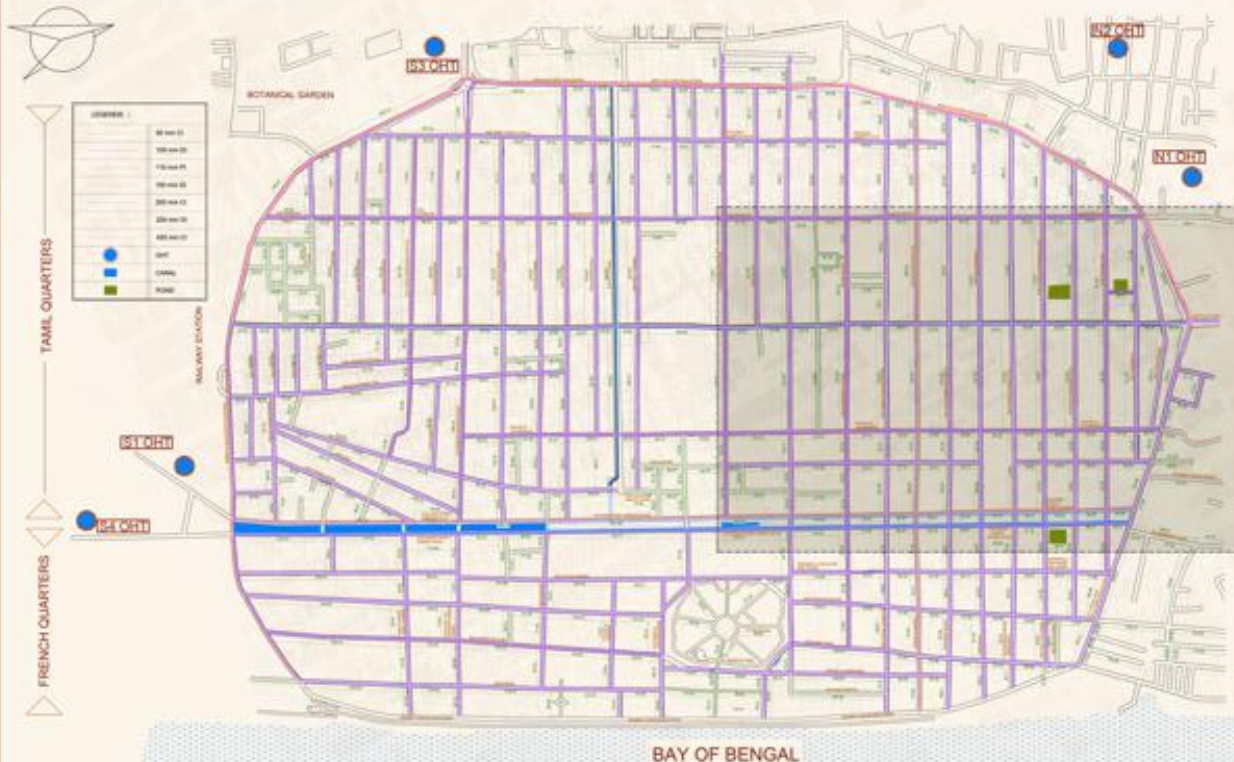
* PROGRAMS:

It includes activities such as, sourcing water, treating it to make it safe for consumption, building infrastructure like pipelines and reservoirs, monitoring water quality and implementing policies to promote efficient use and conservation.

* PURPOSE:

Water supply maps play a crucial role in urban design by providing essential information about the distribution, availability, and infrastructure of water resources within an urban area. These maps help urban planners and designers make informed decisions regarding:

1. Infrastructure Planning
2. Resource Management
3. Emergency Preparedness
4. Land Use Planning
5. Environmental Protection



* MAIN SOURCE:

Ground water is the primary source of water for Boulevard Town, sourced from Uthrapalayam, which is located 7.5 km from the site. French people in 1800 discovered Uthrapalayam due to red soil and freshwater availability.

Public Health Division, PWD, Puducherry, manages water supply for 8.50 Lakhs urban and peripheral areas.



* HOW IT WORKS:

French people discovered Uthrapalayam due to its red soil and fresh water.

In 1800, water was directed from Ayai Kulam with the help of centrifugal motion to Melkupalayam (higher elevation) an underground tank located 3 km away from Boulevard Town covered with vegetation as of now.

Due to its elevated location, gravity lines were used, which flows daily for three shifts.



* CHANGE DONE AFTER INDEPENDENCE:

Before independence the water was directed via brick masonry channels and after independence the channels had been converted to 21 inch pipelines.

After independence, construction of reservoir were implemented and were named as North Zone Reservoir and South Zone Reservoir.

Only the pipes have been changed till date with the same process being followed. Use of 14 inch pipelines were also there in between in case of distribution of water from the main pipelines.

* HISTORY OF WATER SUPPLY SYSTEM

1800 - The first water source was discovered.

1810 - Also discovered from North to South.

1820 - Water directed to Melkupalayam (higher elevation) an underground tank located 3 km away from Boulevard Town covered with vegetation as of now.

1830 - Canal constructed from North to South.

1840 - Canal constructed from North to South.

1850 - Canal constructed from North to South.

1860 - Canal constructed from North to South.

1870 - Canal constructed from North to South.

1880 - Canal constructed from North to South.

1890 - Canal constructed from North to South.

1900 - Canal constructed from North to South.

1910 - Canal constructed from North to South.

1920 - Canal constructed from North to South.

1930 - Canal constructed from North to South.

1940 - Canal constructed from North to South.

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2000 - Canal constructed from North to South.

2010 - Canal constructed from North to South.

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2360 - Canal constructed from North to South.

2370 - Canal constructed from North to South.

2380 - Canal constructed from North to South.

2390 - Canal constructed from North to South.

2400 - Canal constructed from North to South.

* DISTRIBUTION OF WATER INTO BOUTELEVARD TOWN

1. Water supply from North to South.

2. Water supply from North to South.

3. Water supply from North to South.

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37. Water supply from North to South.

38. Water supply from North to South.

39. Water supply from North to South.

40. Water supply from North to South.

41. Water supply from North to South.

42. Water supply from North to South.

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61. Water supply from North to South.

62. Water supply from North to South.

* SEAWATER PURIFICATION:

Desalination of Sea Water:

Sea water source is inexhaustible, and groundwater extraction is depleting underground aquifers.

To minimize groundwater dependency, a sea water desalination plant in Puducherry is proposed, with a 0.5 MLD plant under DBOMT (Design Build Operate Maintain and Transfer) basis.

* TREATMENT PLANT:

Under AFD Scheme -

Proposed AFD Scheme to construct 84 tubewells near coastal boundary to reduce high TDS, Nitrate, Iron, and Fluoride, replacing urban Puducherry tubewells and removing declining water quality.

* NEARBY WATER BODIES IN PUDUCHERRY

Outer lake, Bahor lake, Karasur lake, Thondamandham lake, Oshandai lake, Vaidhanor lake, Pandiyakuppam lake, etc.

Previous figure is 23 Tanks. Now less than about 20 Tanks and related Ponds are available.

Average annual rainfall in the Region is 1250 mm received from North - East and South West Monsoon.

Annual utilisable runoff 49.5 mcm stored in 85 tanks.

Feeder channel convey the water from the river and tributaries to the tank.

Apart from the tank there are 500 ponds that can store rainwater.

*** Rainwater Harvesting Tank:**

Rainwater harvesting tanks were provided for specific buildings such as church, municipality building and other public buildings etc.

*** SYSTEM OF DISTRIBUTION:**

Water is being extracted continuously for about 16 to 20 hrs per day to meet the per capita demand of the people living in the urban limits.

Due to continuous extraction of the ground water to balance the demand and supply of water, the quality of water started deteriorating over a period of time.

Presently a various physical and chemical qualities such as TDS, PH, Nitrate, Iron, Chloride are over shooting the permissible limit as mentioned in the Indian Standards IS 10500 - 2012.

*** ISSUES:**

Due to over extraction of ground water to meet the demand of public, the quality of water is constantly declining.

Due to the lack of water, the quality of water has exceeded the permissible limit and must comply with IS 10500 - 2012 standards.

It is proposed to explore the other possibilities like sinking 84 no.s of tubewells under AFD scheme and Desalination of Sea Water.

*** PORTABLE WATER SUPPLY:**

In order to provide safe portable drinking water to the people of Puducherry a entire urban and sub urban areas of Puducherry have been divided into 18 water supply zones.

*** ISSUES:**

Due to over extraction of ground water to meet the demand of public, the quality of water is constantly declining.

PONDICHERRY



URBAN STUDY INFRASTRUCTURE

DISTRIBUTION OF WATER SUPPLY



* OHT (OVER HEAD TANK) :

380 deep tube wells extract water from confined aquifers in urban and peripheral areas.

The water is pumped to the nearest sump and overhead tank, providing 220ml daily through 70 overhead reservoirs.

Major water supply head works in Muthirapalayam and Thirukani meet urban needs.

Total of 4 OHT tanks supports the Boulevard Town. Two of them supporting the water requirement activities of the north end and two of the south end with capacities of the tank and the sump mentioned.

Capacity of OHT :

Sno	OHT No.	Over Head Tank	Capacity Sump
South Section			
111	South Zone OHT	200000	50000
253	Bharathipuram	400000	100000
North Section			
1N1	North Zone	200000	340000
2N2	Reservoir	1100000	400000
	Rainbow		
	Nagar OHT		

* DRINKING WATER SUPPLY :

The ground water is supplied to the sump, and from there the water is transferred to the residential units for domestic purposes and for drinking water.

* SUPPLY TIMING :

Urban water supply is provided in three shifts.
Morning : > 5.30 A.M. to 8.30 A.M.
Afternoon : > 12.30 P.M. to 1.30 P.M.
Evening : > 5.30 P.M. to 8.30 P.M.

* TYPE LINE NETWORK :

There are totally 1,06,375 domestic house service water supply connection and 7,054 commercial water supply connection and 4,278 flat rate connections have already been given.

All the houses are provided with the individual piped water supply connection in the urban and peripheral area of Pondicherry and no houses were left unconnected.

* TYPES OF PIPELINE USED IN BOULEVARD TOWN :

- 63 mm - PVC pipe
- 75mm - PVC pipe
- 80mm - CI pipe
- 90mm - PVC pipe
- 100mm - CI pipe

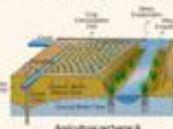


* AGRICULTURE :

In Pondicherry, water is primarily transferred to agricultural lands through irrigation channels and pipelines connected to water sources such as rivers, lakes, ponds, and groundwater wells.

The source of water for agriculture can vary depending on the location and availability, but common sources include surface water from rivers and lakes, as well as groundwater from wells.

Additionally, rainwater harvesting and storage in reservoirs or tanks are also utilized to supplement irrigation needs.



Name of the Revenue

Village : Pondicherry

Name of Hamlet : Uppalam (S-OHT 4)

OHT capacity : 20 lakhs - single

SUMP capacity : 10 lakhs

Year of construction : 2007

Motor pumpset for OHT (Capacity) : 75 HP (Centrifugalmotor 3no.)

No. of Borewells : 2

Source to the OHT : Odiampet Sump / Abdulkalam Nagar Sump

Name of Revenue

Village : Pondicherry

Name of Hamlet : Bharathipuram (S-OHT 3)

OHT capacity : 6 lakhs - single

Sump capacity : 2 lakhs

Year of construction : 2003

Motor Pumpset for OHT (Capacity) : 40HP (2NOS , Centrifugal)

No of borewells : 1 nos



Name of the Revenue

Village : Muthialpet

Name of Hamlet : North Zone Reservoir

OHT(N-OHT 1)

OHT capacity : 20 lakhs litres / Double (10 litres + 10 litres)

Sump Capacity : 3.50 lakh litres

Year of Construction : 1985

Motor pumpset for OHT (Capacity) : 1.50HP / Centrifugalmotor (3 no.)

2.60 HP/Centrifugal motor (1 no.)

No. of Borewells : 3

Name of Revenue

Village : Pudupalayam

Name of Hamlet : Sonampalayam (S-OHT 1)

(South Zone Reservoir)

OHT capacity : 20 lakhs litres

Sump capacity : 4.60 lakhs litres

Year of construction : 1983

Motor Pumpset for OHT (Capacity) : 50 HP(4 no.centrifugal)

No of borewells : 1

source of water : Muthirapalayam sump water



Name of Revenue

Village : Saram

Name of hamlet : Rainbow nagar

OHT(N-OHT 2)

OHT Capacity : 11lakhs litres

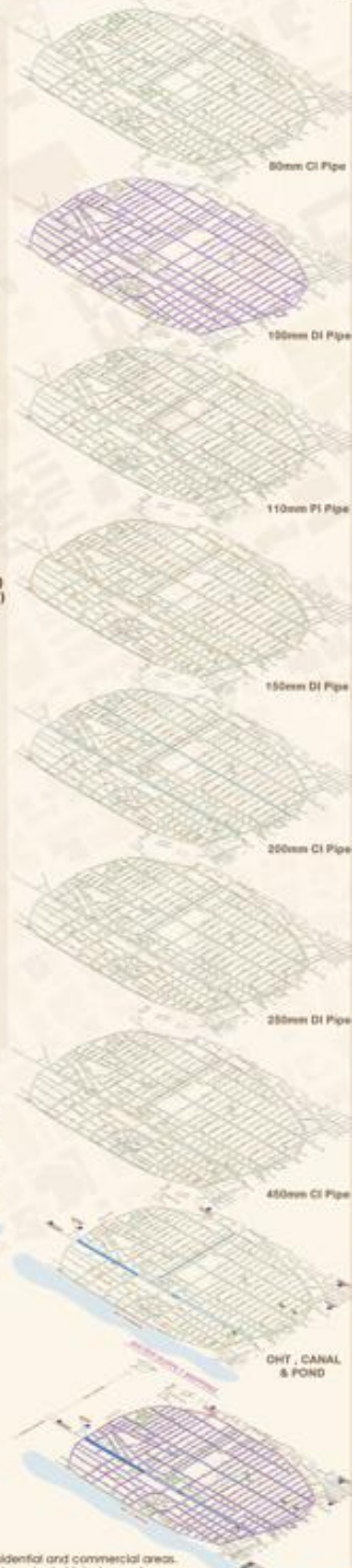
Sump Capacity : 4.50 lakhs litres

Year of construction : 1998

Motor Pumpset for OHT (capacity) : 60 HP/Centrifugal

Motor (3 no.)

No. of Borewells : 3



* INFERENCE :

- Pondicherry's pipeline network and overhead tank (OHT) infrastructure efficiently distributes water from various sources to residential and commercial areas.
- The extensive and interconnected network ensures consistent supply, while strategically located OHT tanks store and distribute water to high-demand areas.
- Pondicherry relies on various sources such as groundwater, surface water, and possibly imported water. The pipeline network would likely be extensive and interconnected to ensure consistent supply to different parts of the region.
- The infrastructure may also incorporate water conservation measures for sustainability.

PONDICHERRY



INTRODUCTION:

Pondicherry is a prosperous Union Territory with 100% electrification. Power sector is a critical infrastructure element required for the smooth functioning of the economy. An efficient, resilient and financially sustainable power sector is essential to stimulate growth and prosperity in the state. The availability of reliable, quality and affordable power can ensure growth of all sectors of economy including agricultural, industrial and others.

Government of Puducherry (GoP), to comply with the Act, has initiated reform and restructuring of power sector and conversion of functions of transmission and distribution into corporate bodies.

Restructuring has brought overall improvement in the operations of the power utilities.

Organizational Structure of Puducherry Electricity Department



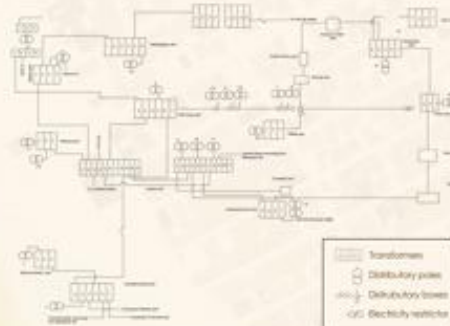
In 1993, the Pondicherry Power Corporation Limited, an undertaking of the Government of Pondicherry, was set up. This undertaking is the generating company and has established a 32.5 MW gas based power plant in the Karaikal region of the Union Territory. The entire funds for this undertaking have been provided by the Union Territory government in the form of share capital received from the Planning Commission. Since this entity is already operating as a separate corporate entity this is not included in the study.



RESIDENTIAL (11kv) **MIXED RESIDENTIAL (22kv)** **COMMERCIAL (110kv)** **MIXED COMMERCIAL (130kv)**
INDUSTRY (220kv) **PUBLIC (22/110kv)** **PARKS AND RECREATION (11/22kv)**

PROJECT INFRASTRUCTURE:

Puducherry 3G pilot project has been developed in division-1 of Puducherry that has 100% electrification with 7 nos. of 22kV feeders and 5 nos. of 11kV feeders. Pilot project covers around 1400 consumers connected to 9 distribution transformers of a 22kV feeder. The feeder comprises sections of overhead lines and underground cables whose lengths are 8.11 km and 3.83 km respectively.



EXISTING INTRASTATE TRANSMISSION LINES (in CKT.KM)

S. No.	Name of the Project	Cap.	Length in CKT.KM
1	220 KV		
2	Karaimangalam-Bharu	Single circuit	34.25
3	Karaimangalam-Bharu	Single circuit	2.1
4	Karaimangalam-Pondicherry	Single circuit	4.31
5	Karaimangalam-Pondicherry	Single circuit	3.44
6	110 KV		
7	Karaimangalam-Pondicherry	Single circuit	5.104
8	Karaimangalam-Pondicherry	Single circuit	5.591
9	Karaimangalam-Pondicherry	Single circuit	1.89
10	Karaimangalam-Pondicherry	Single circuit	7.44
11	Karaimangalam-Pondicherry	Single circuit	9.74
12	Karaimangalam-Pondicherry	Single circuit	1.8
13	Karaimangalam-Pondicherry	Single circuit	6.13
14	Karaimangalam-Pondicherry	Single circuit	11.45
15	Karaimangalam-Pondicherry	Single circuit	8.42
16	Karaimangalam-Pondicherry	Single circuit	17.14
17	Karaimangalam-Pondicherry	Single circuit	0.13
18	Karaimangalam-Pondicherry	Single circuit	2.29
19	Karaimangalam-Pondicherry	Single circuit	14
20	Karaimangalam-Pondicherry	Single circuit	8.48
21	Karaimangalam-Pondicherry	Double circuit	3.3
22	Karaimangalam-Pondicherry	Single circuit	28.95
23	Karaimangalam-Pondicherry	Single circuit	24.34
24	Karaimangalam-Pondicherry	Single circuit	1.3
25	Karaimangalam-Pondicherry	Single circuit	1.3
26	Karaimangalam-Pondicherry	Single circuit	0.201
27	Karaimangalam-Pondicherry	Double circuit	4.554
28	Karaimangalam-Pondicherry	Single circuit	4.14
29	Karaimangalam-Pondicherry	Single circuit	24.34
30	Karaimangalam-Pondicherry	Single circuit	30.1
31	Karaimangalam-Pondicherry	Single circuit	3.2
32	Karaimangalam-Pondicherry	Single circuit	8.1
33	Karaimangalam-Pondicherry	Single circuit	8.1
	TOTAL		387.12

EXISTING INTRASTATE SUBSTATION CAPACITY

S. No.	Name of the station	Voltage level (kV)	No. of existing transformers	Capacity in MVA
1	Mangalam	110/22	2 x 16	32
		110/22	1 x 25	25
		110/11	2 x 16	32
2	Villanur	110/22	3 x 10	30
3	Kollapet	110/22	2 x 10	20
4	Villanur	110/11	2 x 10	20
5	Bharu	110/22	2 x 16	32
6	Villanur	110/22	2 x 16	32
7	Kollapet	110/22	3 x 16	48
8	Kollapet	110/22	2 x 16	32
9	Kollapet	110/22	3 x 16	48
10	Kollapet	110/22	3 x 16	48
11	Kollapet	110/22	2 x 10	20
12	Kollapet	110/11	3 x 16	48
13	Kollapet	110/11	2 x 16	32
14	Kollapet (PGL)	110/11	2 x 10	20
15	Kollapet (Market)	110/11	2 x 10	20
16	Kollapet (Pondicherry)	110/11	2 x 10	20
	Total Capacity Available (in MVA)			420

EXISTING INTERSTATE TRANSMISSION LINES (in CKT.KM)

S. No.	Name of the Project	Cap.	Length in CKT.KM	End use
1	220 KV			
2	Karaimangalam-Bharu	Single circuit	34.25	Industrial
3	Karaimangalam-Bharu	Single circuit	2.1	Industrial
4	110 KV			
5	Karaimangalam-Pondicherry	Single circuit	5.104	Industrial
6	Karaimangalam-Pondicherry	Single circuit	5.591	Industrial
7	Karaimangalam-Pondicherry	Single circuit	1.89	Industrial
8	Karaimangalam-Pondicherry	Single circuit	7.44	Industrial
9	Karaimangalam-Pondicherry	Single circuit	9.74	Industrial
10	Karaimangalam-Pondicherry	Single circuit	1.8	Industrial
11	Karaimangalam-Pondicherry	Single circuit	6.13	Industrial
12	Karaimangalam-Pondicherry	Single circuit	11.45	Industrial
13	Karaimangalam-Pondicherry	Single circuit	8.42	Industrial
14	Karaimangalam-Pondicherry	Single circuit	17.14	Industrial
15	Karaimangalam-Pondicherry	Single circuit	0.13	Industrial
16	Karaimangalam-Pondicherry	Single circuit	2.29	Industrial
17	Karaimangalam-Pondicherry	Single circuit	14	Industrial
18	Karaimangalam-Pondicherry	Single circuit	8.48	Industrial
19	Karaimangalam-Pondicherry	Double circuit	3.3	Industrial
20	Karaimangalam-Pondicherry	Single circuit	28.95	Industrial
21	Karaimangalam-Pondicherry	Single circuit	24.34	Industrial
22	Karaimangalam-Pondicherry	Single circuit	1.3	Industrial
23	Karaimangalam-Pondicherry	Single circuit	1.3	Industrial
24	Karaimangalam-Pondicherry	Single circuit	0.201	Industrial
25	Karaimangalam-Pondicherry	Double circuit	4.554	Industrial
26	Karaimangalam-Pondicherry	Single circuit	4.14	Industrial
27	Karaimangalam-Pondicherry	Single circuit	24.34	Industrial
28	Karaimangalam-Pondicherry	Single circuit	30.1	Industrial
29	Karaimangalam-Pondicherry	Single circuit	3.2	Industrial
30	Karaimangalam-Pondicherry	Single circuit	8.1	Industrial
31	Karaimangalam-Pondicherry	Single circuit	8.1	Industrial
	TOTAL		387.12	

INFERENCE

Absolute necessity to include alternate energy sources in case of redevelopment because present demand is half met lights.

Increasing consumption in certain areas especially in commercial zones.

Existing traditional buildings are still consuming energy.

Energy efficient and climate responsive guidelines has to be implemented in new buildings.

16th CENTURY : PONDICHERY WITHOUT ELECTRICITY



17th CENTURY : INTRODUCTION OF FRENCH PEOPLE



18th CENTURY : PONDICHERY WITH ELECTRICITY



PONDICHERY

2020 - 2025



GRAND CANAL

HISTORY OF GRAND CANAL



- Grand canal was built around 1765 and divided the French and Tamil town.
- the Grand Canal served as a storm water drain for evacuation of water into the sea.
- The Grand Canal starts from S.V. Patel Salai (North Boulevard) and continues till the sewage treatment plant which connects the Upper canal to the sea near the New Light House.
- The length of the canal is about 3.8 km till conference point.
- The length of the Petit Canal is 860 meters length.

BACKGROUND OF THE CANAL :

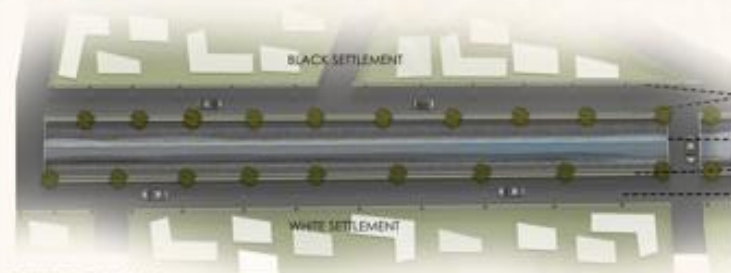


- The Grand Canal constructed by the French around 1765, regulated the flow of rain water.
- The UGD system is 30 years old and was designed for a population of 117,000 (As per City Development Plan - Puducherry).
- Towards the north-end it flowed into the Upper drainage and to the south into the sea, near the New Light House.
- Over a period of time, the Grand Canal has become a sewage line the heart of the Town. Houses and illegal shops have connected their grey water into the Grand Canal.
- Towards the north the Canal goes underground from Aurabindo street junction, but gets blocked before it reaches the Upper drain and the waste water visibly stagnating.

EXISTING CONDITION OF THE CANAL :

- An underground drainage system (UGD) was constructed in 1979. Majority of the houses have connected their water closets (WC) to the underground drainage system (UGD). However many let their waste water from kitchen and bath rooms flowing to the road side drains and later into the Grand Canal.
- The UGD system is 30 years old and was designed for a population of 117,000 (As per City Development Plan - Puducherry). The present population is about 140,000. Due to the insufficient carrying capacity of the sewer, the UGD manholes are over-flowing onto the roads before reaching the Grand Canal through road side drains.
- A long stretch of the Grand Canal was covered about 15 years ago. Public toilets, covering parking and shops have been constructed along the Grand Canal.
- It has been covered in few stretches of the total 2km length used
- dump-yard parking, squatters and shelters as a space for local market

CANAL PLAN



PROBLEMS :

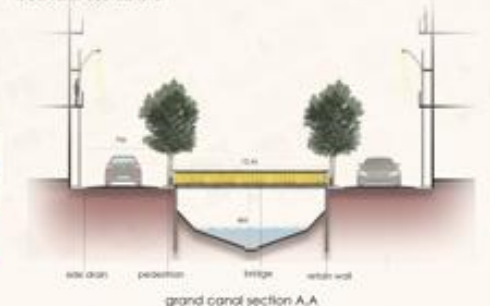
- Within the Boulevard Town the issue of Grand Canal is closely related to the largely dysfunctional drainage and sewage system both leading to a major public health issue. To sort out the problems a close coordination between PWD and the Municipality is a must.
- Any long term solution should be preceded with fixing the main problems in a time bound manner by connecting waste water from houses establishments to the Underground Sewage, thus ensuring that the entire surface drainage is cleared of obstructions.

PETIT CANAL :

PLAN :



DETAILED VIEW B :



grand canal section A.A



petit canal section B.B





SACRED HEARTS BASILICA



SOUTH ELEVATION

WEST ELEVATION

The total height of the church : 30m
middle tower : 18m
width : 46m
length : 50m

SECTION AA'

DETAILING



ARCHED WINDOW

CENTRAL TOWER

ADJACENT TOWER

DESCRIPTION

LOCATION : South Boulevard Town
near railway station
MD Road area ,
Puducherry.

TYPOLOGY : Religious



BELL TOWER ROOFING IS LEFT UNPLASTERED IN ORDER TO AVOID THE ECHOING OF THE BELL SOUND

PARABOLIC ARCHES ARE USED IN ROOFING IN ORDER TO PROTECT THE STRUCTURE FROM DETRIORATION DUE TO RAIN.



POINTED ARCH WINDOW
(BUILT MATERIALS - BRICK
STRUCTURE WITH WOODEN
FRAME AND IRON)

LIVE BROADCASTING
CENTER (LOUDES TV -
PONDICHERY)

VIEWS



INFRASTRUCTURAL SERVICES:

Electricity:

The main source of electricity for the church is from Neyveli power plant.
The electricity is supplied through the underground cable layings.

The church requires a total of 70 kw of electricity, as of now only uses 30 kw is being used.

The church is provided with a generator with a capacity of 92.5 KVA.

Around 8000 units of electricity is being used every month.

Storm Water Management:

Stormwater management is not in progress. The roof-top water is collected through the pipes and flushed into the drainage sewage systems that are provided in that area.

Fresh water Supply:

The major fresh water supply is from the Puducherry revenue village's OHT (1), by the Pondicherry municipality, through underground pipelines.

Solid Waste Management:

A temporary dumpyard is placed on the backside of the church. Also a solid waste box was placed outside the church, which is cleaned by the Swachhata Corporation members on a daily basis.

VIEWS



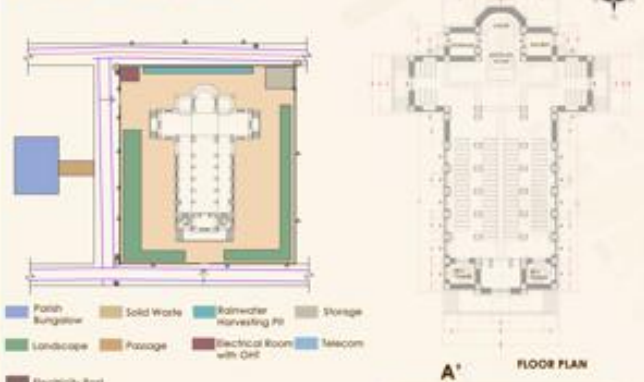
STRUCTURAL DETAILS :

Basic wall Thickness : 1m
Column Dimensions : 1m x 1m
Number of Entries : 9
Number of doors : 13
Number of windows : 12
Flooring : Terrazzo Tile : 0.25m x 0.25m

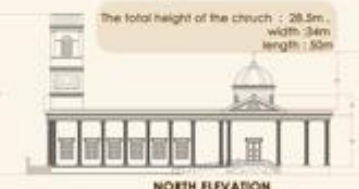
KEY PLAN



NOTRE DAM DES ANGES



EAST ELEVATION



NORTH ELEVATION

The total height of the church : 28.5m,
width : 34m
length : 30m



ENTRANCE ARCH, PORCH

CENTRAL DOME

CORINTHIAN COLUMN

SECTION AA'

DESCRIPTION

LOCATION : White Town ,
Puducherry.

TYPOLOGY : Religious

INTERSECTION OF ARCHES WITH THE
CENTRAL DOME OF 7M



DECORATIVE CORINTHIAN
COLUMN USED FOR AESTHETIC
PURPOSE

DECORATIVE STAINED GLASS
WINDOW
(BUILT MATERIALS - BRICK
STRUCTURE WITH WOODEN
FRAME AND IRON)



PARABOLIC ARCHES IN THE OTHER
SIDE OF THE CENTRAL HALLWAY

FALSE CEILING EXTENSIVELY USED
BY THE METHOD OF CASTING LIME
MORTAR, TOG ALUMINUM.



RAINWATER HARVESTING PIT AND STORMWATER
RUNOFF FROM THE ROOF

■ SACRED HEARTS BASILICA ■ NOTRE DAM DES ANGES

INFRASTRUCTURAL SERVICES:

Electricity:

The main source of electricity for the church is from Neyveli power plant.
The electricity is supplied through the underground cable layings.

The church is provided with a generator with a capacity of 92.5 KVA.

Rain Water Harvesting and Storm Water Management:

Rainwater harvesting was implemented in this church with four harvesting pits.

Here the rain water is collected through the pits and the ground water table is recharged and the excess saturated water is sent to the stormwater drainage in the surface.

Stormwater drainage is placed in either sides of the church into the ground and used to promote the ground water table recharge.

Fresh water Supply:

The major fresh water supply is from the Uppalam OHT (5 OHT 4L) by the Pondicherry municipality through underground pipelines.

Solid Waste Management:

The Church is cleaned by the the maintenance workers of the church and the wastes are disposed by the Swachhata Municipal Corporation members on a daily basis.

VIEWS



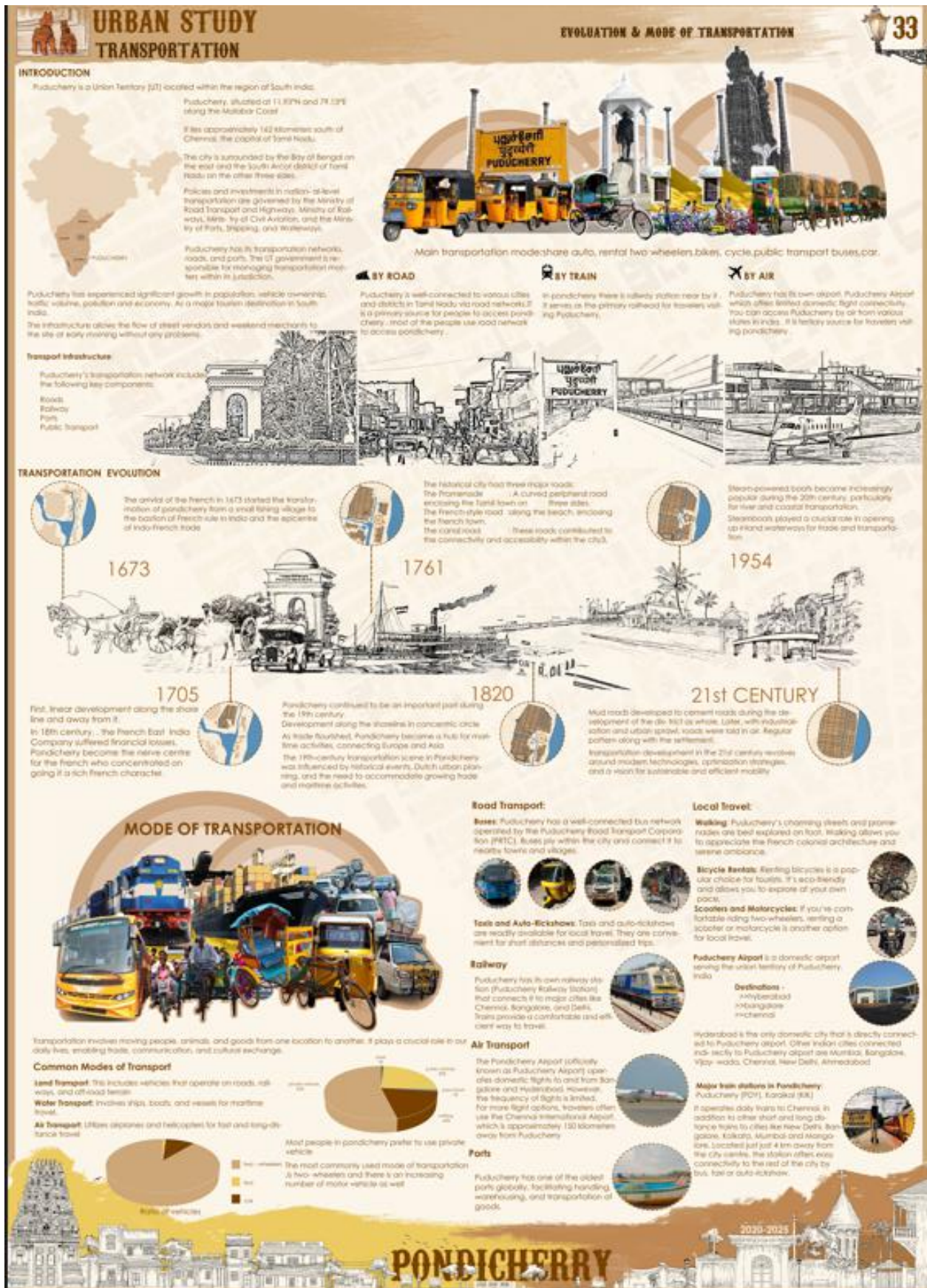
STRUCTURAL DETAILS :

Basic wall thickness : 1m
Column Dimensions : 1m x 1.2m
Number of Entries : 3
Number of doors : 9
Number of windows : 18
Flooring : Marble

INFERENCE :

Examining the church documents reveals insights into its physical layout , maintenance history , and historical alterations offering clues to energy efficiency , inspection reports assess structural integrity and safety.

4. TRANSPORTATION



MODE OF TRANSPORTATION

Road transport:

Buses: Puducherry has a well-connected bus network operated by the Puducherry Road Transport Corporation (PRTC). Buses ply within the city and connect it to nearby towns and villages.

Taxis and Auto-Rickshaws: Taxis and auto-rickshaws are readily available for local travel. They are convenient for short distances and personalized trips.

Railway

Puducherry has its own railway station (Puducherry Railway Station) that connects it to major cities like Chennai, Bangalore, and Delhi. Trains provide a comfortable and efficient way to travel.

Air Transport

The Pondicherry Airport (officially known as Puducherry Airport) operates domestic flights to and from Bangalore and Hyderabad. However, the frequency of flights is limited. For more flight options, travelers often use the Chennai International Airport, which is approximately 150 kilometers away from Puducherry.

Ports

Puducherry has one of the oldest ports globally, facilitating handling, warehousing, and transportation of goods.

Local travel:

Walking: Puducherry's charming streets and promenades are best explored on foot. Walking allows you to appreciate the French colonial architecture and serene ambience.

Bicycle Rentals: Renting bicycles is a popular choice for tourists. It's eco-friendly and allows you to explore at your own pace.

Scooters and Motorcycles: If you're comfortable riding two-wheelers, renting a scooter or motorcycle is another option for local travel.

Puducherry Airport is a domestic airport serving the Union Territory of Puducherry, India.

Destinations: Hyderabad, Bangalore, Chennai, New Delhi, Ahmedabad.

Hyderabad is the only domestic city that is directly connected to Puducherry airport. Other Indian cities connected indirectly to Puducherry airport are Mumbai, Bangalore, Vijaywada, Chennai, New Delhi, Ahmedabad.

Major train stations in Puducherry: Puducherry (PRT), Karaikal (SK).

It operates daily trains to Chennai. In addition to other short and long distance trains to cities like New Delhi, Bangalore, Kolkata, Mumbai and Mangalore. Located just 4 km away from the city centre, the station offers easy connectivity to the rest of the city by bus, taxi or auto-rickshaw.



MAJOR ENTRY POINT:

There were five major entry points for the Boulevard town, which connects in the one of the major arterial road called Anna Salai, Chennai - Nagapattinam and ECR road serves as a primary entry point. Puducherry Bypass is the often busiest road due to its numerous intersections of different roads like National Highway (NH) and State Highway (SH) and also new sub-arterial roads were also created for decongesting the existing road network and they are:

New sub-arterial road along Annambalapuram Road, Vadamangalam Main Road, Reddyapalayam road, Vathudavur Road and Thiruvananth Road.

LEGENDS:

- Major entry points routes to the Boulevard Town
- Connecting roads which connect entry points and zone
- Boulevard Town
- 01 Cuddalore Road towards Thiruvananth
- 02 Puducherry - Villupuram Road towards Villupuram
- 03 Vathudavur Road towards Villupuram
- 04 Chennai - Nagapattinam Road towards Thiruvananth
- 05 East Coast Road towards Chennai
- Pondicherry Bus Station, 1st Main Road, Banga Nagar
- Pondicherry Airport, Lawpet, Narkutara Colony
- Puducherry Railway Station, subaltah Salai, Ambedkar Nagar
- Old Port, Marina, POH Road, Duppypet
- Major entry points to the Boulevard Town

ROAD CONNECTION:

- 01 Entry Point 01 - Which connects Puducherry Bypass Road, Puducherry Villupuram Highway and Cuddalore Road through Puducherry Villupuram Road.
- 02 Entry Point 02 - Which connects Puducherry Bypass Road, Chennai-Nagapattinam Road, Vathudavur Road and ECR through Karaikal Salai and it also connects Puducherry Villupuram Highway, Puducherry Bypass Road, and Cuddalore Road through Karaikal-Thiruvalluvar Salai.
- 03 Entry Point 03 - Which connects Puducherry Bypass through MG-Kanuvakkuppam Main Road and East Coast Road through Mahatma Gandhi Road.

ACCESSIBILITY:

- 01 Bus Station
- 02 Airport
- 03 Railway Station
- 04 Bus Station
- 05 Airport

MAJOR NODES AND ROAD:

Selected nodes are the specific locations or areas are in and around Boulevard Town in Pondicherry that are known for their high traffic volume and congestion. These nodes are typically characterized by a significant influx of vehicles, pedestrians, or both, leading to traffic jams and potential transportation challenges.

There were three major nodes which connect in the National Highway of Pondicherry. It took crucial role on the distribution of vehicular movement without any congestion and discomfort.

1-Akrapattinam Junction, 2-Indira Gandhi Junction, 3-Rajiv Gandhi Junction



Highways are important components of a country's transportation which are designed to connect cities, towns, and regions, facilitating the movement of people and goods. A State Highway is a type of road which typically managed and maintained by the state government within a specific state or region. State Highways often connect to National highways, which are managed by the central government. This allows for seamless transportation between regions within the state and beyond state borders.



LEGENDS:

- National Highways (NH 32, NH 332, NH 332 A)
- State Highways (SH 203)
- Arterial Roads (Connecting Roads)
- Boulevard Town (Taken zone)
- Major Nodes
- 01 Marapattinam Junction
- 02 Indira Gandhi Junction
- 03 Rajiv Gandhi Junction
- 04 Akrapattinam Junction
- 05 Anna Square
- 06 Jawaharal Nehru Junction
- 07 Ajanta Junction

NH-44 runs along the eastern coast of India and connects Chennai in Tamil Nadu to Kanyakumari in the southernmost part of Tamil Nadu, passing through Pondicherry.



East Coast Road, Chennai-Nagapattinam and Puducherry Bypass road were highly accessed road by foreign and domestic people which connects the off three entry points in it. These road has comparatively high entry movement than other entry roads because it has both roadways and always as a primary movement of transportation, which connects the several arterial roads like MG road, Thiruvalluvar Salai etc...

DIRECTIONAL ENTRY:

LEGENDS:

- Pondicherry Zone
- Boulevard Town
- Chennai (North)
- Nilgiri (West)
- Kanyakumari (South)

Chennai the north most district of Tamil Nadu with 140 km from Boulevard Town. Ajanta Junction act as a secondary entry point.

Jawaharal Nehru Junction Which act as a primary entry point Nilgiri the west most district of Tamil Nadu with 440 km from Boulevard Town, where Anna Square act as a primary and JN Junction as a secondary entry point.

Kanyakumari the south most district of Tamil Nadu with 574 km Boulevard Town. Here also Anna Square act as a primary and JN Junction act as secondary entry point.



WATERWAYS:

Pondicherry has a minor port called Old Port that handles cargo and minimum local passenger vessels. While it is not a primary mode for tourists, it contributes to overall connectivity.

AIRWAYS:

Major Entry through always is also plays a vital role other than road ways transportation in supporting jobs, trade, and tourism in the region. Airways transportation in Pondicherry contributes significantly to economic growth, connectivity, and efficient movement of people and goods. It is located of Lawpet, it is approximately 7.1 km from Boulevard town and 8.1 km from the international community of Aurville.



Primary airway entry from Charles de Gaulle Airport, Paris to Chennai International Airport

Secondary airway entry from Charles de Gaulle airport, Paris to Trichy International Airport

By road ways from Chennai International Airport to Boulevard Town is 221km, through NH 32 ECR, Puducherry Bypass and Venkatasubba Reddai Salai. Primarily it connects Anna Square as a entry point.

From Trichy International Airport to Boulevard Town is 149 km, through NH 32 Chennai-Nagapattinam Road, Puducherry Bypass and Karaikal Salai. Primarily it connects Ajanta Junction as a entry point.

RAILWAYS:

The well-connected Puducherry Railway Station plays a crucial role in facilitating transportation aspect. It serves as a railway terminus for the Villupuram-Pondicherry branch line, connecting the city of Pondicherry.



Daily Trains which connects Pondicherry Railway Station with primary cities like Chennai, Villupuram, Cuddalore and Tiruchi on daily or regular basis. Here Pondicherry Railway Station act as a major entry point which is very close to the Boulevard Town.

Non-Daily Trains which connects Pondicherry Railway Station with primary cities like Kanyakumari, Trunelveli, Madurai, Dindigul, Sivagangai, Pudukottai and Tiruvallur. Here Villupuram Railway Station act as a major entry point.

From Villupuram Railway Station, People used to take public vehicle like bus or a private vehicle like car or taxi to the zone which covers 40 km from railway station to Boulevard Town.

Here the non daily train creates a negative impact among the railway users because it took more time and it make people to feel uncomfortable.

LEGENDS:

- Daily Train Connecting Pondicherry
- Non-Daily Train Connecting Pondicherry

INFERENCE:

Anna Square and JN Junction has a Primary entry points for road ways transportation, with proper vehicular movement these were the highly preferable chosen road.

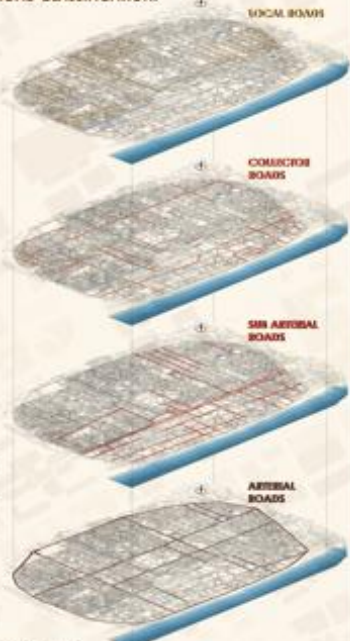
JN Junction and Ajanta Junction has a primary entry points for airways transportation, with regular movement on JN Junction and irregular movement on Ajanta Junction due to the low of extended MG Road.



ROAD WIDTH MAP:



ROAD CLASSIFICATION:



ARTERIAL ROAD:

An arterial road is a high-capacity urban road that sits below freeways (highways) on the road hierarchy in terms of traffic flow and speed, on arterial road delivers traffic between collector roads and highways.

The primary Arterial Roads are Anna Salai and MG road. These roads are mostly filled with commercial buildings and working as a major entry points which connects Highways.

Anna Salai 1.8 KM stretch of road which connects Puducherry Villupuram Road, Puducherry Bypass road, Chennai-Nagapattinam Highway (NH32), East Coast Road and Vasthuvadar Road (NH323), Mahatma Gandhi Road 1.86 KM stretch road which also connects Puducherry Bypass and East Coast Road (NH323A).

Anna Salai Mahatma Gandhi Road

SUB-ARTERIAL ROAD:

A sub-arterial road is a road that connects arterial roads to areas of development, and carries traffic directly from one part of a region to another. Urban sub-arterial streets provide intra-community travel. The one of the major sub-arterial road is Grand Canal Road which consist of H.M Kasim and Netaji Subash Chandra Bose road.

Both the road are in the stretch of 1.74 KM length. These roads are mixed with residential, commercial, mixed residential, public and semi public areas.

H.M Kasim Road Netaji Subash Chandra Bose Road

COLLECTOR ROAD:

A collector road or distributor road is a low-to-moderate-capacity road which serves to move traffic from local roads or streets to arterial roads.

Collector provide average mobility than arterials of lower speeds and for limited distances.

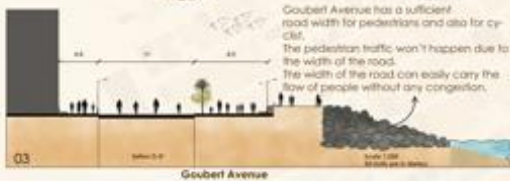
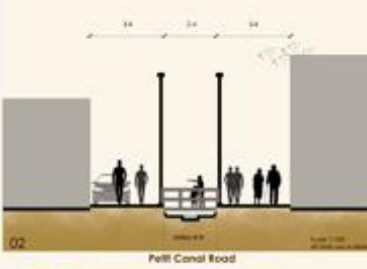
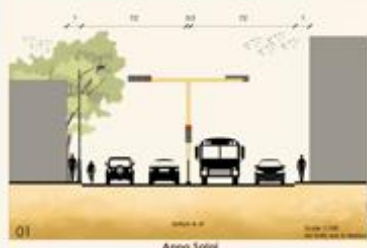
Broach Street is the longest stretch of collector road which consist of length 1.7 KM.

It mostly consist of residential, commercial and mixed use buildings with regular flow of vehicles in it.

LOCAL ROAD:

A local road or street primarily used to provide direct access to adjacent land uses, slow speeds, and low volumes of vehicular movements offers a high level of accessibility to people and discharge them onto collector.

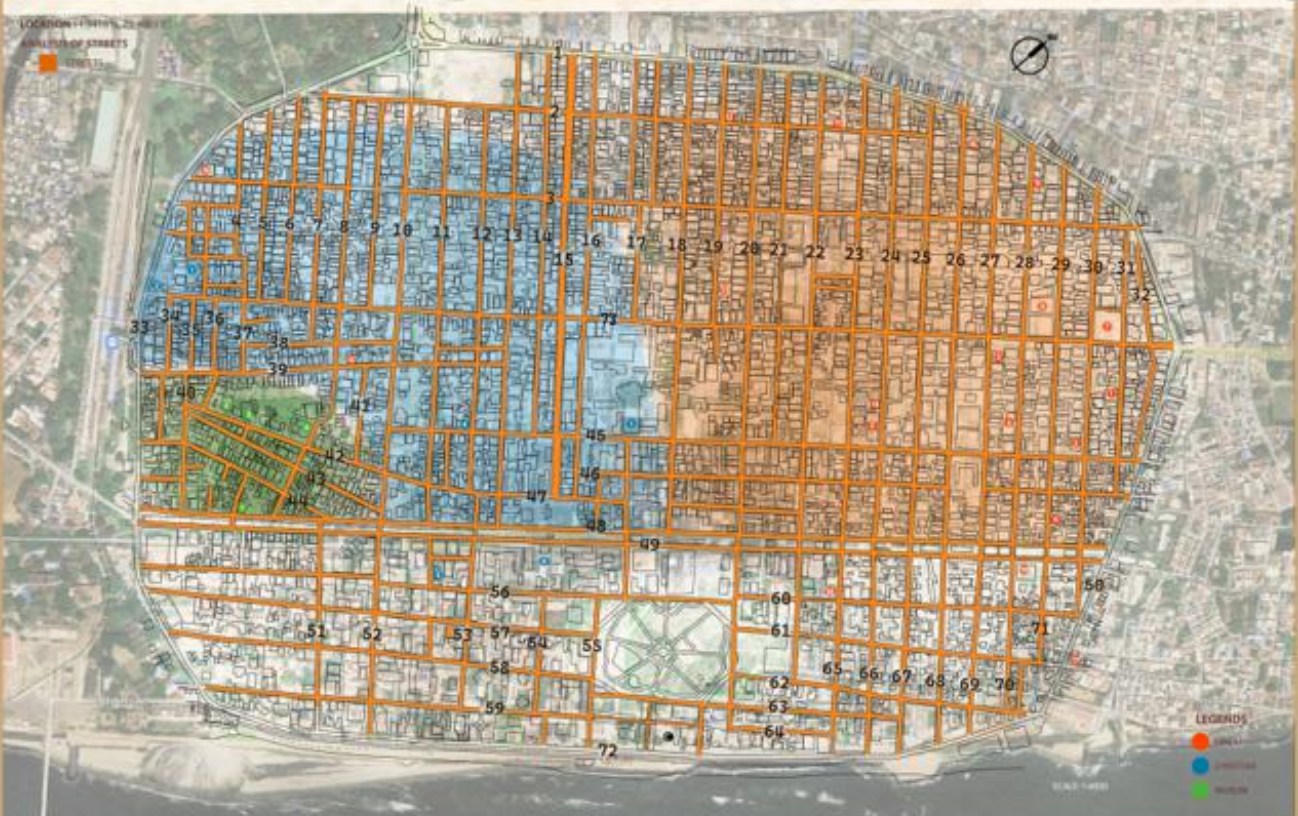
Pettit Canal Road one of the major Local road with 0.78 KM length and majority filled with residence and mixed use buildings.



PRIMARY MOVEMENT ROUTES:

In Pondicherry, the primary arterial roads include Anna Salai, Mahatma Gandhi Road, and Cuddalore Road. These routes play a crucial role in facilitating transportation and connecting different parts of the city. Which has high concentrated movements of vehicle and pedestrians.

Goubert Avenue road were also as primary movement routes which have only accessibility for people as well as bicycle movement. It is a vehicle restricted zone and highly concentrated with people.



STREET NAMES

1. ANNA SALAI (WEST BOULEVARD)
2. SINNA SUBBAYYA PILLAI STREET
3. BHARATHA STREET
4. BADER SHAH STREET
5. VEC STREET
6. SUBBAYYAN STREET
7. THILLAI MAISTRY STREET
8. ANNA VENKATESALAM PILLAI STREET
9. NAGACE MAISTRY STREET
10. LAL BAHADUR SHASTRI STREET
11. KANDAPPA MUGALIAN STREET

12. MONTORGER STREET
13. LAPORE STREET
14. SUBBAYYAN STREET
15. PETIT CANAL STREET
16. ST. THOMAS STREET
17. THAMBU NAGAR STREET
18. NICHOLAPPA STREET
19. VILLALAI STREET
20. ANANDHA BANGA PILLAI STREET
21. GRAND BAZAR STREET
22. JAGANNATHA MURUGU STREET

23. AMBALATHADIVAR MAIDAN STREET
24. CALATHESWARAN KOIL STREET
25. CALVE SUBBAYYA CHETTY STREET
26. UR. ANANDHO STREET
27. KAMATCHI ANNAH KOIL STREET
28. SUBBAYYAN (DHARMANALAI) KOIL STREET
29. MUTHUJAMMAN KOIL STREET
30. PERUMAL KOIL STREET
31. THIAGARAJA STREET
32. SANGARADAS STREET
33. SUBBAYYA SALAIS-BOULEVARD

34. RAJANAJA STREET
35. RAJA SINGH STREET
36. SHAGY STREET
37. PPU SAHIB STREET
38. NAJAPPA PILLAI STREET
39. LAL ANNAH KOIL STREET
40. MILAD STREET
41. POKKALUTTY STREET
42. MULLA STREET
43. CAZY STREET
44. CHANDRA SAHIB STREET

45. MISSION STREET
46. CANTINE STREET
47. CANTINE MARUS KAVIR STREET
48. HAKKASHI STREET (AMBOUR SALAI)
49. ROSE STREET (GANGE SALAI)
50. S. V. HOTEL ROAD (NORTH BOULEVARD)
51. BAZAR SAINT LAURENT STREET
52. BUSBY STREET
53. SUNDOLF STREET
54. CASERN STREET
55. MAHE DE LABOURDONNAYS STREET

56. VICTOR SIMON STREET
57. SUFRON STREET
58. ROMAN ROLLAND STREET
59. DUNAS STREET
60. ANNAKILA VENKATARAM KOIL STREET
61. FRANCIS MARTIN STREET
62. SAINT LOUIS STREET
63. CAMPAGNE STREET
64. SAINT MARTIN STREET
65. LAW DE LAURENCE STREET
66. MARINE STREET

67. SAINT GILES STREET
68. DUPUR STREET
69. DESBASSY DE ROCHE
70. MONT STREET
71. LALLY TOLLAND STREET
72. BELLE COMBE STREET
73. ROBERT AVENUE BEACH ROAD
74. MG ROAD

EVOLUTION OF STREETS



HERE, FROM THESE ILLUSTRATIONS WE CAN UNDERSTAND THE EVOLUTION OF THE STREET PATTERN AND THE SETTLEMENT OF PEOPLE IN THE STUDY AREA. WE CAN ALSO BE ABLE TO SEE HOW THEY HAVE CONSUMED THE USE OF WATER BODY AND REDIRECTED IT IN SUCH A WAY ITS ACCESSIBLE AND RELIABLE THROUGHOUT THE LIFE TIME.

SETTLEMENT WRT CASTE AND RELIGION

FEW STREETS ARE GIVEN WITH THE NAMES OF THE CASTE OF PEOPLE SETTLED AROUND IT.

STREET 11 - MUDALIYAR
STREET 19 - VELLALA
STREET 1, 2, 3, 4 - PILLAI
STREET 25 - CHETTY
STREET 26 - POKKALUTTY



OTHER FEW STREETS ARE GIVEN WITH THE NAMES OF THE RELIGIOUS BUILDINGS PRESENT IN THE STREET.

STREET 24, 30, 31 - TEMPLES
STREET 42-47 - CHURCHES
STREET 42-44 - MOSQUES



STREET QUALITY



STREET SECTIONS



CHARACTERISTICS



TYPOLOGY WRT MATERIAL



ANALYSIS AND INFERENCE

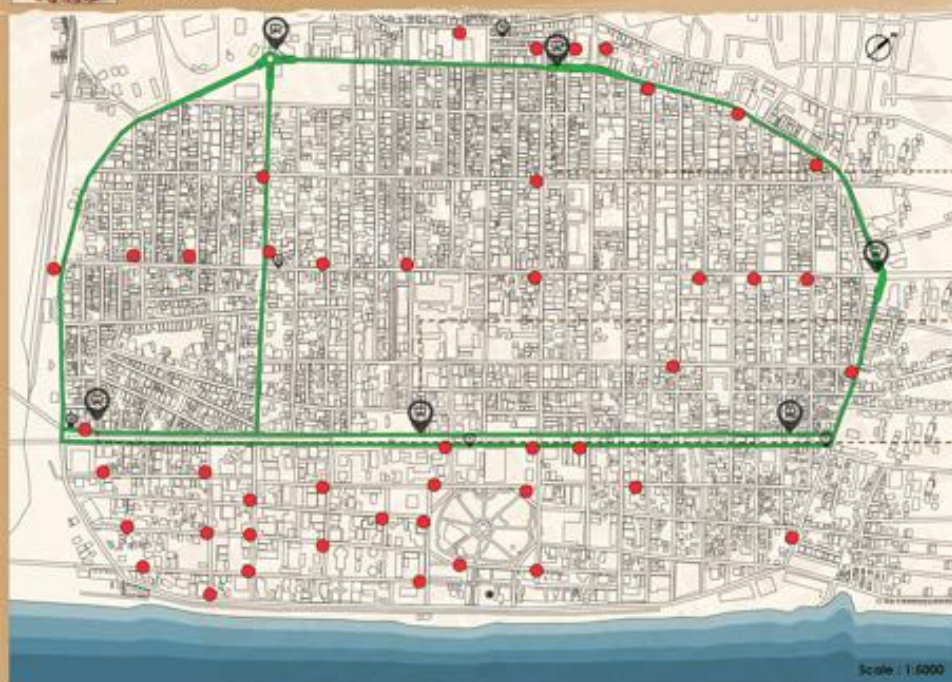
WE COULD SEE THAT THE STREETS HAVE A PATTERN OF LOOSE GRID PATTERN FROM THE WAY PEOPLE HAVE SETTLED DOWN IN TIME. THE EVOLUTION OF STREET PATTERN WRT THE SETTLE ALSO REFLECTS THE SAME AS WELL.



THERE IS A HUGE DIFFERENCE IN THE STREET CONSTRUCTION TYPOLOGY WHICH CAN BE SEEN IN THE MATERIAL OF ROAD, THE TYPE OF DRAINAGE, THE WIDTH, THE TYPE OF SETTLEMENT BETWEEN THE TAMIL QUARTERS AND FRENCH QUARTERS. THERE ARE MARKET STREETS WHICH PLAYS A MAJOR ROLE IN THE ECONOMY OF THE REGION.

WE COULD SEE STREETS CLASSIFIED ON THE BASIS OF USAGE FOR RESIDENTIAL AND COMMERCIAL PURPOSES, AND FURTHER CLASSIFICATION FROM THE PAST CAN BE SEEN BASED ON RELIGION AND CASTE AS WELL.

DIRAMBODUR ROAD



Pondicherry has well connected bus routes to Chennai, Vilupuram, Vellore, Karaikal, Chidambaram, Mayiladuthurai, Tirunelveli, Nagapattinam and Cuddalore. The main bus stand of pondicherry is the New Bus Stand which is located at M.S. Road.



Intermediate or informal public transport, or paratransit as is commonly recognised worldwide, is a component of the transit system which provides mobility services to meet the demand gap between the private and the formal public transportation systems.



Intermediate Public Transport: In Pondicherry region, there are two main types of intermediate transport systems prevailing. The first one is cycle auto rickshaw or rick to collect the passengers from door to door.

The other one is feed route or informal public transport systems such as share autos, tempo & mini buses from prominent locations like bus stands, commercial streets, public institutes etc.



LEGENDS
● IPT stops
● Bus stops
■ Bus routes

BUS ROUTES

Total Number of PRTC Buses - 141. There are 20 Night Service Buses run by Puducherry Road Transport Corporation (PRTC).



Buses in Pondicherry

The PRTC operates bus services in Pondicherry with some popular routes which covered by PRTC buses include: Bangalore to Pondicherry, Pondicherry to Bangalore, Chennai to Pondicherry, Pondicherry to Chennai, Hyderabad to Pondicherry, Madurai to Pondicherry.

BUS BAY:

At present the bus bays in the major roads are provided in such a way that it obstructs the smooth traffic movement. Hence, recessed bus bays are to be provided on all the major roads so that the other vehicles move along the road without any delay.



PRTC Depot:

The Puducherry Road Transport Corporation is the government transport corporation in the union territory of puducherry, namely Pondicherry, Karaikal, Mahe and Yanam.

LEGENDS

● Pondicherry Central Bus Stand
● Pondicherry Old Bus Stand
● Bussy Street
● Karaikal government transport
● SECT bus depot
● Marapalam Bus Stop
● PRTC depot
● New Bus Stand
● Pondicherry Bus Stand
● Ambekkar Nagar
● Indira Gandhi Square Bus Stop
● Indira Gandhi
● Mookkum Bus Stop



Hip Hop Buses:

Recently, PRTC inducted 12 new buses to improve the public transport system in Pondicherry. Additionally, they introduced five hop-on, hop-off services buses which are aimed at improving connectivity and convenience for both residents and tourists.



INFERENCE:

Checking the local transportation authority, contacting local bus operators or using transportation facilities tailored for pondicherry. These are the sources typically provide detailed information about routes, schedules and stops. Additionally enquiring with the locals or visit bus terminals to follow the information. There is a struggle for local users for the insufficient of bus route on our zone, people were forced to access bus stops on a specific area. There is a need for mini bus or some other public transportation which can access all over the over the Boudhwar town other than private transportation which is high in cost compare to public transportation.



Bussy Street road where the main share auto routes :



Grand canal road where main bus routes within white town :

Grand canal road is one of the main bus route in White Town. There are totally 4 bus stops in this road. Heavy vehicular movement happens in this road without any congestion.

Due to the random parking bus movement also gets affected but it comparatively less than other main roads like Bussy street.



There is no well designed footpath on both sides and the presence of shops to the road side obstructs pedestrian movement. We can clearly see that, there is no parking zone provided but the vehicles were parked there, which disturbs the vehicular movement.





CURRENT PARKING FACILITIES:

The parking areas are an important component in the urban transportation network. The parking areas become very important in the central business district areas (CBD) and public activity area where the traffic movement will be heavy. At present the old jail complex in JN Street within CBD is temporarily used for two-wheeler parking area. And the paved surface above the Grand Canal is used for both four-wheeler and two-wheeler parking area. This two parking lots are coming under the urban local body control. There are 3 two-wheelers paid parking around the puducherry central bus terminus and at railway station.



SHORT TERM MANAGEMENT MEASURES:

Shift parking from MG Road, Mission Street, Jawaharal Nehru Street, and Karamajal Street to other streets, introduction of premium parking on major roads. One-side parking on Karamajal Street, Thiruvalluvar Street, and Maraimalai Adiga Street. Identify off-street parking locations: Old jail, SEPC Depot near Venkateswara Subbaraj Reddy's house, Old distillery.

MEDIUM TERM MANAGEMENT MEASURES:

Enhance off-street parking to multi-level car parking. Convert existing off-street parking areas into multi-level car parking. Central bus stand, and proposed off-street parking locations.

LONG TERM MANAGEMENT MEASURES:

Designate French Town as a parking-free zone. Provide parking for non-motorized transport on HM Kasim Road. Remove on street parking on major roads and introduce paid parking on minor roads. Emphasize off-street parking facilities, limiting on-street parking to non-motorized transport.

NEED FOR ADDITIONAL PARKING:

Keerily felt in CBD, recreation, tourism, school, and government buildings. Road parking reduces road width, leading to parking on one side only. No scope for increasing on-street parking in CBD during peak hours. Proposal for off-street parking in potential commercial areas.

ORGANIZED PARKING:

The stretch on the Grand Canal can be developed as dedicated parking. Additionally, the street beside hotel promenade and Mahadevi Labourdonna's street can be developed as a dedicated parking area. JN Street and MG Roads are amongst the busiest and congested roads of the boulevard town.

Parking within Puducherry area	
NO	Location
1	Old jail
2	Above Grand Canal



The two parking lots are coming under the urban local body control. There are 3 two-wheelers paid parking around the puducherry central bus terminus and at railway station.

ONE SIDE PARKING

Practiced in Anna Salai, South Boulevard, MG Road, Mission Street, HM Kasim Salai, Karamajal Street, Karamajal Street, Dupuy Street and Tolly Tollenal Street.



- One side parking
- Parking on both sides
- Dedicated parking

TWO-WHEELER PARKING:

Two-wheeler parking was practiced in the Anna Salai, Mission Street, MG Road and Grand Canal stretch. Old jail complex in JN Street is temporarily used for two-wheeler parking area.



TRAFFIC SIGNAL:



If it is located on a primary junction called Anna Square with major vehicular movement.



If it is located on a secondary junction called Jawaharal Nehru junction with moderate vehicular movement.



If it is located on a secondary junction called Agastya junction with moderate vehicular movement.



- One side parking-Free
- One side parking-Paid
- Premium parking zones
- Off-street parking

- One side parking-Free
- One side parking-Paid
- Premium parking zones
- Multi-level car parking

- One side parking-Free
- One side parking-Paid
- Premium parking zones
- Multi-level car parking

INFERENCE:

Comparatively dedicated parking is less than On-street parking. Due to random on-street parking random minor congestions happens regularly. Parking on no parking areas disturbs both pedestrian as well as vehicular movement. Against traffic guidelines on one way roads make difficulties for vehicular movement due to lack of proper signage.



URBAN STUDY TRANSPORTATION

INTENSITY MAPPING FOR VEHICULAR MOVEMENT

39

INTRODUCTION:

In Puducherry, due to lack of defined regulations, the characteristics of traffic varies vastly making it heterogeneous in character.



A large number of vehicles move into and out of Puducherry Planning Area indicating the strong interrelationship between the Puducherry Region and its immediate region i.e. Urban centres of Tamil Nadu.

Two wheelers accounted for a large share (40 to 45 %) and the share of cars was reasonably high on Chennai road.

JAWAHARLAL NEHRU ROAD:

Along the junction of Jawaharlal road and M.G. Road, you'll find various street vendors, shops, and attractions that attract both pedestrians and vehicles.



These points of interest add to the vibrancy of the area but may also contribute to congestion, especially if parking spaces are limited.

The road layout, width, and infrastructure on Jawaharlal Street may influence traffic flow. Narrow roads, lack of alternative routes, or poorly designed intersections can contribute to congestion and traffic buildup.

Traffic levels on Jawaharlal Street may vary throughout the day, with peak hours experiencing heavier congestion due to rush hour traffic, school pickups, or other time-specific activities.



7AM - 11AM

MAJOR TRAFFIC ROADS:

Anna Salai road, M.G. Road, H.M. Kaim road has a high intensity vehicular road.

Understanding these vehicular intensity helps in identifying accident-prone areas.

By focusing on these locations, we can implement safety measures such as improved signage, traffic calming measures, or even redesigning intersections to reduce the risk of accidents.

These areas indicate high commercial centres and high economic activity area.

During rush hours and peak times, traffic congestion may occur as commuters travel to and from work or tourist explore the area.

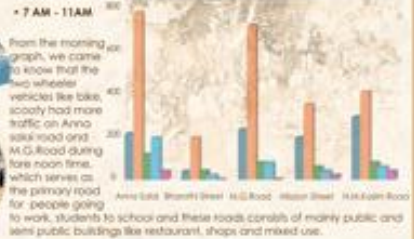
Jawaharlal Street is located near transportation hubs such as bus terminals, and municipal central parking place. It may experience increased traffic from commuters and travelers accessing these facilities.

This includes cars, motorcycles, bicycles, and occasional auto-rickshaws navigating the thoroughfare.

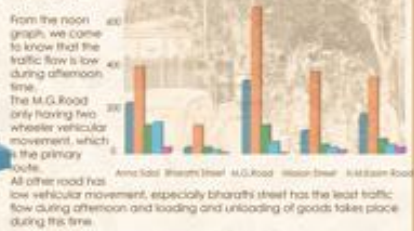


TRAFFIC ANALYSIS BASED ON TYPES OF VEHICLES

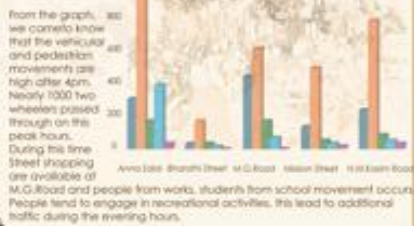
7 AM - 11 AM



11 AM - 4 PM



4 PM - 11 PM



ANALYSIS:

- Traffic volume on internal city roads are high.
- Turning movements at intersections were high resulting in delays and queues.
- Parking of vehicles is emerging as a major demand and critical problem.
- The limited capacities of narrow roads of the city are further eroded by parking of vehicles on both sides, all along the road stretches.

RED HIGH ORANGE MODERATE YELLOW LOW

PONDICHERRY

AISHWARYA.R | AJAY.V | ARIJAN.M | BHARATH.S.K | JYO SAM.S.B | SHAUN SIDDHARTH.P.S

2020 - 2025

PONDICHERRY



AMENITIES

- HOSPITALS
- SCHOOLS & COLLEGE
- GOVERNMENT BUILDINGS
- OTHER AMENITIES
- BANKS AND ATM
- TEMPLES
- CHURCH
- MOSQUE

ACCIDENT ZONES

Accident zones were formed mostly due to the intersection of four roads meeting at one junction. There was no proper speedbreaker or signal or traffic guidance in these places. Hence minor traffic issues were created in these intersection zones.



ACCIDENT ZONES

MAJOR ACCIDENT ZONES

four roads meeting at one junction.



MAJOR ACCIDENT ZONES

Motorist and/or local and busy street were considered as major accident zones in Boulevard town.



Violation of traffic rules by tourists who doesn't know the rules create minor traffic issues & minor Accident.

PUBLIC AND SEMI-PUBLIC ZONES

In public and semi-public zones, ATM, bank, post office etc. were considered as public and some of the government buildings were considered as semi-public zones. Only minor traffic issues were created by the activities happening here.



INDUSTRIAL ZONE
In industrial zone traffic issues were created by the labour working here and due to loading and unloading happening in industries. Only minor traffic issues were created rarely in these zones.



RECREATIONAL ZONES

In recreational zones like parks, playgrounds etc. these places were accessed by the local people as well as tourists. Major traffic issues were created here during weekends than weekday based on the peak time of crowd.



TRAFFIC ANALYSIS BASED ON AMENITIES:

SCHOOL/ COLLEGE:

Heavy traffic were formed only of morning and evening time. Traffic timing: School/College (8-9 am-3-4:30 pm)



CHURCH:

In church there will be major traffic issues during Sunday's because of Sunday service. Traffic time: 8 am-12 pm, 4 pm-10 pm



TEA SHOPS:

Morning: 8-10 am, 10:30-11:30 am, Afternoon: 3-4 pm, Evening: 6 pm-9 pm



MOSQUE:

Prayer timing: 5:30 am - 6 am, 12:45 pm - 1:15 pm, 3:30 pm - 5 pm, 6:30 pm - 8:45 pm, 7:30 pm - 8:30 pm



MARKET:

Major level traffic time: 9 am-12 pm.



TOURIST PLACES (PARKS, RESTAURANTS, CAFES):

During weekdays there will be only a minor level traffic due to the local people activities. During weekends, local people activities as well as tourists people activities happens hence there will be major traffic issues during weekends (Friday, Saturday, Sunday).



TEMPLE:

Major traffic time: 6-8 am, 5:30-7 pm in temples during festivals there will be a high level of traffic issues. During temple festivals the roads around the temple gets blocked totally due to major traffic. People wait for hours to go from place to place during those days.



HOSPITAL/CLINIC:

In hospitals, traffic issues come by people who come for OP treatment. Doctors and labours who come to work in hospitals also create minor traffic issues. Other people who get treatment in general ward doesn't create traffic issues. Morning: 10 am-12 pm, Afternoon: 3-5 pm, Night: 7-9 pm



TRAFFIC ANALYSIS BASED ON LANDUSE:

RESIDENTIAL ZONE

In residential zone mostly minor traffic issues only occur. Major traffic issues occur only when residential people park their vehicles in no parking on their street due to lack of space.



COMMERCIAL ZONE

In commercial zone, traffic issues were created due to several reasons like loading and unloading of commercial goods and services and like shopping activities done by people with their families.



MIXED RESIDENTIAL ZONE

In mixed residential zone, major traffic issues occur because of the residential and commercial activities happening in the same. Residential people park their vehicles in streets due to lack of space and also for commercial activities. People park their vehicles on the same street. Thus major traffic issues were created.



MIXED COMMERCIAL ZONE

In mixed commercial zone there will be commercial as well as business activities such as restaurant, tourist bars etc. Major and minor traffic issues were created by these activities.





Truck loading and unloading



Loading and unloading of goods in big trucks in the Boulevard town.

This has resulted in:

1. Traffic congestion and pollution.
2. Discouraged the growth of town in the street.



Loading and unloading construction materials nearby pathways and road sides lead to minor & major traffic issues for the people around there.



There was no specific place for loading and unloading construction materials.



Loading and unloading construction materials nearby pathways and road sides lead to minor traffic issues for the people around. Also major traffic issues sometimes.



There was no specific place for loading and unloading construction materials.



Government also does this due to lack of space for loading and unloading in government construction works or projects like road works and drainage maintenance works.



Minor traffic issues were found in importing and exporting goods and services like construction materials.



Loading and unloading of materials in commercial shops or stores were done in bulk or in small quantities. Loading and unloading from heavy vehicles is not done during daytime. It is done only during early morning and night time but small vehicles loading and unloading is done during day time which cause traffic issues to people around there.



Loading and unloading for commercial purpose is done using different types of vehicles based on their work and activity.



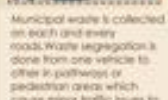
Municipal waste is collected on each and every road. Waste segregation is done from one vehicle to other in pathways or pedestrian areas which cause minor traffic issues to the people around there.



Loading and unloading of goods in big trucks in the Boulevard town.



This has resulted in:



Loading and unloading construction materials nearby pathways and road sides lead to minor & major traffic issues for the people around there.



There was no specific place for loading and unloading construction materials.



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Traffic based on loading and unloading:

- *Traffic based on loading and unloading is formed where commercial activities happens often.
- *Commercial loading and unloading happens mostly during night 10 pm till morning 7 am.
- *Major commercial activities happens on land settlement areas from white town.
- *On daytime traffic based on loading and unloading happens very rarely.
- *Primarily market and its nearby road roads were play a crucial role on loading and unloading process.
- *Commercial buildings like textile and household items shops were take place.



M. G. ROAD

MGRoad and Jawahar Lal Nehru steel cross road has steel markets on every Sunday. This market is quite famous and perfect for cheaper products.

Comments, second-hand books, toys, house holds, CD's DVD, audio, tapes and used products are generally sold here.

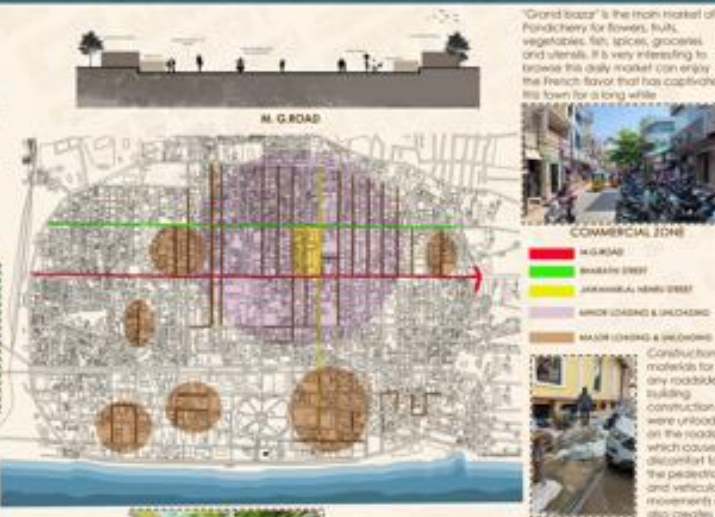
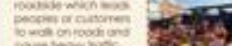
This is a permanent market located between M.G road and Bharathi street.

On Sundays the streets are mostly pedestrianised. Small scale regular shops remain closed on Sundays. However branded shops remain open.

The crowd flow is three times the general crowd that visits MG Road on a normal day. The whole ground street become growing even on Sunday because of this Sunday bazaar where you will find a variety of items, from fresh exotic fruits to handicrafts and innumerable other items.

Pondicherry is famous for highly creative and beautiful souvenirs. Textiles, handmade papers, wooden handicrafts, ornaments, leather products, brass and garments are unique items of it.

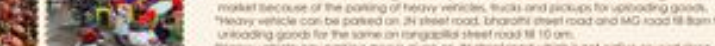
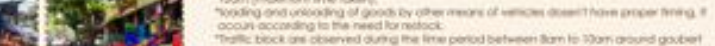
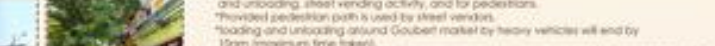
MG road and busy street contains more street shops on roadside which leads peoples or customers to walk on road and cause heavy traffic.



COMMERCIAL ZONE

- MG ROAD
- BHARATHI STREET
- JAWAHAR LAL NEHRU STREET
- MINOR LOADING & UNLOADING
- MAJOR LOADING & UNLOADING

Construction materials for any roadside building construction were unloaded on the roadside which causes discomfort for the pedestrians and vehicle movement and also creates traffic.



PONDICHERRY

URBAN STUDY TRANSPORTATION

KEVIN LYNCH PRINCIPLES (ANALYSIS WRT TRANSPORTATION)

43



KEVIN LYNCH'S IMAGE OF THE CITY

THE URBAN SPACE IS ONE OF THE QUALITIES CONCERNED, IT GENERATES THE OPPORTUNITY TO EASE THE PEOPLE TO USE AND UNDERSTAND THE BUILT ENVIRONMENT AND EXTENSIVELY ADAPTED TO FINDING A WAY TO GO THROUGH THE URBAN SPACE CAN BE ENHANCED THROUGH THE IMPLEMENTATION OF TOPOLITICAL ELEMENTS AND LANDSCAPES. THE SENSE OF THE URBAN DESIGN ELEMENTS FROM WHICH DESCRIBES FIVE PHYSICAL ELEMENTS TO FORM A CITY IMAGE: THE CATEGORIES OF EDGES, NODES, PATHS, DISTRICTS, AND LANDMARKS. APPEALING VALUE, PURPOSEFUL, AND STRUCTURAL IS VITAL FOR THE LEADING URBAN DESIGN PRINCIPAL FOR PLANNING A CITY.



PATH



THE PATH IS THE MOST IMPORTANT URBAN DESIGN ELEMENT AS IT FORMS A COHESIVE NETWORK, ARRANGEMENT OF PEOPLE AND A CITY'S ENVIRONMENT. IT INCLUDES THE CONNECTION OF ARTERIAL ROADS, HIGHWAYS, AND COLLECTOR ROADS THAT MAY CONSIST OF FEW ACCESS OR ENTRANCES WITHIN THE STREETS. IN PLACE, THEY FORMED THE URBAN FLEXIBILITY FOR PEOPLE TO TRANSPORT.

LANDMARK



THE SENSE OF THE PLACE IN AN AREA POSSIBLY WILL BE ENHANCED THROUGH LANDMARKS. THE DEFINITION OF UNDERSTANDING OF THE SITE ALSO HAS BELONGING SENSE THAT WITHIN A PARTICULAR ENVIRONMENT OR LOCATION, CONCEIVABLE DUE TO SOCIAL RELATIONSHIPS. A POINT FOR REFERENCE WHILE PHYSICAL ELEMENTS GUIDE AND ORIENT PEOPLE, IS KNOWN AS LANDMARKS.

DISTRICTS



DISTRICT CHARACTERISTICS ARE SIMILAR TO DISCRETE VISUAL IDENTITIES FROM URBAN DESIGN COMPONENTS: MATERIAL, TEXTURE, AND BUILDING FORM. THE OBSERVERS ON THE PARTS OF DISTRICTS CAN ENJOY THEMATIC CONTINUITY. NUMEROUS REGIONS ARE CONNECTED BY THE EDGES, SUCH AS SHORELINE, ROADS, OR SEAMLESS BOUNDARIES BETWEEN VARIOUS REGIONS BY PUBLIC USERS ABOUT THE CONTINUITY, IMPROVING THE URBAN DESIGN CITY IMAGE.

MAJOR ROADS

MINOR ROADS

LANDMARKS WITH CULTURAL AND SOCIAL IMPORTANCE

DISTRICT 1 - FRENCH DISTRICT 2 - TAMILHINDU MUSLIM, CHRISTIAN



LEGENDS

1. SRI VEDATHARAJA PERIYAL TEMPLE
2. VITAC PY
3. SRI AUROBINDO ASHRAM
4. MANAKULA VINAYAGAR TEMPLE
5. IMMACULATE CONCEPTION CATHEDRAL
6. SHARATHI PARK
7. FRENCH SOLDIER WAR MEMORIAL
8. KEEPERAN FALLS
9. GANESH STATUE
10. THE SACRED HEART OF JESUS BASILICA
11. LIGHT HOUSE

NODE



IT IS IDENTIFIED AS THE GATHERING POINT OR ATTENTION POINT IN A TOWN. NODES ARE SEPARATED INTO TWO PHYSICAL ELEMENTS. JUNCTIONS OF A PATH OR PLAZA AND POINT TO THE TOWN PEOPLE WITH PLANNED FOOT. NODES ON THE MAIN ROADS CREATE BETTER EFFICIENCY MOVEMENT COMPARED TO THE NODES LOCATED AWAY FROM MAIN ROADS.

MAJOR NODES

MINOR NODES

ANALYSIS OF NODES

MAJOR NODE: ANNA SQUARE



PARKING NEAR THE NODE STREET VENDORS AROUND NODE

WALKWAYS

BUS ROUTES

EDGE



THE EDGES AS AN ELEMENT IN THE TOPOLOGICAL BOUNDARIES ALLOW A SPECTATOR TO LOCATE THEMSELVES IN THIS AREA. THE SEPARATION OF BOUNDARY IS SEGREGATED INTO TWO ZONES OR DISTRICTS BY A SHARP DISTINCTION IN A LINEAR WAY. THE CATEGORY OF EDGES IS IN NATURAL FORMS AND PHYSICALLY.

NATURAL EDGE

MAN-MADE EDGE

INFERENCE

PATH - THE ANNA SALAI IS A CONTINUOUS ROAD WHICH PROVIDES DIRECTIONAL QUALITY TO MOVE IN AND OUT OF BOULEVARD TOWN. THE GRAND CANAL HOLDS ITS IMPORTANCE AS IT SEPARATES THE WHITE TOWN FROM THE BLACK TOWN.

NODE - ARE THE IMPORTANT JUNCTIONS AND STREET INTERSECTIONS AREAS OF HIGH TRAFFIC CONGESTION AND AREAS OF HIGH COMMERCIALIZATION ACTIVITIES.

DISTRICT - THE WHOLE GROUP OF TAMIL, FRENCH, MUSLIM AND CHRISTIAN QUARTER ARE THE DIFFERENT DISTRICTS IN THE AREA OF STUDY. THESE FOUR QUARTERS ARE IN RELATION WITH EACH OTHER & WELL CONNECTED TOGETHER.

EDGE - THE ELEVATED PORTION IN THE BEACH IS AN EDGE AS IT ACTS AS A VISUAL BARRIER. THE ANNA SALAI STREET IS AN EDGE TO THE BOULEVARD TOWN AS THERE IS A DIFFERENCE IN THE STREET LAYOUT BEYOND THE BOULEVARD AREA.

LANDMARKS - THEY ARE IMPORTANT POINTS FOR ANY FINDING PROCESS IN THE CITY. THE TYPOLOGY OF THESE LANDMARKS INCLUDE RELIGIOUS, MONUMENTAL, ADMINISTRATIVE, PUBLIC SPACES AND HOSPITALS. THESE LANDMARKS ARE ALSO MEMORABLE FOR ITS PROMINENT POSITION IN THE CITY CONTEXT.



MG ROAD - JN ST

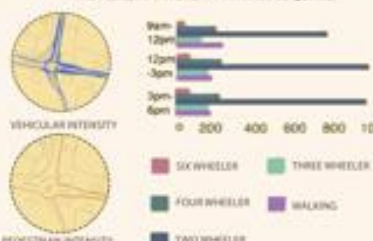
HA KASIM - JN ST

BUSY - HA KASIM STREET

MG - BUDY STREET

HA KASIM - BEACH ROAD

MOVEMENT INTENSITY AT ANNA SQUARE



PONDICHERRY

5. VISUALS





STREET ELEVATION :

The street elevation in Pondicherry varies depending on the area, with some parts showcasing colonial-era architecture and others reflecting a more traditional Tamil architectural style.

The elevation of Pondicherry is 1390 ft / 424 m. Area around Pondicherry has an elevation range from 1390 ft to 1671 ft.

Average elevation of 30 ft, with a minimum elevation of -13 ft and a maximum elevation of 207 ft. The region is mostly flat, with an average elevation of about 13 inches above sea level. The city is protected from the sea by an 8.5 m high seawall that is 2 km long.



French Quarter (Ville Blanche)

The streets in the French Quarter are characterized by colonial-era buildings with two or three stories. These buildings often feature colorful facades, arched windows, and wrought-iron balconies. Many of the buildings have distinct architectural elements such as pilasters, cornices, and decorative moldings.

The street elevation in this area tends to be relatively uniform, with buildings lining the streets in a consistent manner, creating a cohesive and picturesque streetscape.



Tamil Quarter (Ville Noire)

In the Tamil Quarter, the street elevation is typically lower compared to the French Quarter, with buildings often consisting of one or two stories. Traditional Tamil architecture is characterized by smaller, more modest structures with sloping tiled roofs, wooden pillars, and intricate woodwork.

The street elevation in this area may be more varied, with buildings of different heights and styles interspersed along narrow lanes and alleys.



SKYLINE

The skyline of Pondicherry, also known as Puducherry, is a blend of colonial and Indian architectural styles, reflecting its rich cultural heritage and history. The key elements you might find in the skyline of Pondicherry include French Colonial influence. The buildings with distinct French architectural features such as tall, slender columns, arched windows, and pastel-colored facades. Prominent landmarks: The skyline of Pondicherry is dominated by several prominent landmarks, including the Sacred Heart Basilica, which features a towering neo-Gothic facade and intricate stained glass windows.



skyline features a charming mix of colonial-era architecture, vibrant colors, and serene coastal views. Here's a brief overview of the skyline



- Skyline
- Seawater level
- Building level
- Vegetation level

French Colonial Architecture: One of the most striking features of Pondicherry's skyline is its well-preserved French colonial architecture. The town was once a French colonial settlement and many buildings still reflect this heritage with their distinctively French style, including colorful facades, wrought-iron balconies, and arched windows.

Promenade Beach: The town's skyline is dominated by the picturesque Promenade Beach, a popular waterfront area lined with palm trees and colonial buildings. Visitors can enjoy leisurely strolls along the promenade, taking in views of the Bay of Bengal and the iconic Gandhi Statue.

Auroville: While technically located just outside Pondicherry, the futuristic township of Auroville is an integral part of the region's skyline. Auroville Matamandir, a golden spherical structure surrounded by lush greenery, stands out as a symbol of human unity and spiritual aspiration.

French Quarters: Within Pondicherry, the French Quarters are characterized by their narrow streets, colorful buildings, and unique architectural details. The skyline here is defined by colonial-era houses, boutique hotels, cafes, and art galleries, creating a charming and atmospheric ambience.



INFERENCE

The street facades in Pondicherry are often characterized by continuous construction. High garden walls, and elaborate gates. The facades are divided into smaller panels by horizontal cornices and vertical pilasters. The French part of the town was built on sand dunes along the sea. The Tamil quarters have rows of houses on the streets that meet at right angles. The facades of these houses have Greek columns and arched windows, while the interior planning is traditional.





INTRODUCTION:

Pondicherry's identity through the lens of architecture and design in this individual sheet, we delve into the intricate interplay of history, tradition, and community that shape the vibrant soul of Pondicherry. Through meticulously crafted visuals and insightful analyses, we aim to capture the essence of this multicultural haven, celebrating its diversity, heritage, and urban fabric. Join me on a visual journey as we unravel the layers of Pondicherry's social dynamics, cultural vibrancy, and geographical charm, showcasing how these elements intertwine to inspire innovative design solutions and foster a sense of place and belonging.



Social Factors:

Multicultural Society: Pondicherry, also known as Puducherry, has a diverse population consisting of Tamil, French, and other ethnic groups. This multicultural aspect should be reflected in your design to create spaces that are inclusive and accommodating to various cultural practices and lifestyles.

Community Engagement: Pondicherry has a strong sense of community, with people often gathering in public spaces such as parks, beaches, and temples. Designing communal areas that encourage social interaction and engagement will be essential.

Urbanization and Modernization: Pondicherry is experiencing rapid urbanization and modernization, leading to changes in lifestyle and architecture. Balancing modern amenities with traditional values will be crucial in your design.

Traditional Festivals and Traditional Practices:

* The city's rich cultural heritage and traditions. The city has rich traditions and customs that are deeply rooted in its history. Incorporating elements of traditional architecture and design can help create a sense of identity and belonging among residents.

Religious Diversity:

* Temples, churches, mosques, and synagogues, highlighting the city's religious harmony and cultural diversity.

Below image shows the sketches of temple, church and mosque

Colonial Architecture:

* The unique blend of French and Tamil cultures in Pondicherry's urban landscape.

Residential Zones:

* Traditional Tamil houses to colonial-era villas, reflecting the city's socio-economic diversity and housing patterns.



Economic Activities:

The economy of Pondicherry is driven by tourism, agriculture, fisheries, and small-scale industries. Economic factors influence social dynamics, including employment opportunities, income distribution, and access to resources.

Natural beauty:

* Coastal areas, backwaters, and lush greenery, emphasizing the city's geographical charm and its integration with nature.

Urban Infrastructure:

* Roads, transportation hubs, and public amenities, providing context for the design integration with the existing urban fabric.

Community Engagement:

* Community gatherings, street shops, or cultural events in public spaces.

Multicultural Gathering:

* Market * Beach

INFERENCE

In the artistic realm of Pondicherry, envision the play of light and shadow on the pastel facades of colonial buildings. The rhythmic dance of palm fronds against the azure sky, and the reflection of vibrant street life in the shimmering waters of the Promenade Beach. Each corner of the city is a canvas, painted with a palette of culture, history, and natural beauty.



PONDICHERRY

2020-2024