

SMART TECHNOLOGIES INTEGRATION:

The digital ticketing system replaces manual counters with a smart, automated, and integrated ticketing experience. It simplifies passenger movement, reduces crowding, and supports contactless transactions — crucial for a coastal transit hub like Fort Kochi, where tourists and daily commuters coexist.

- Digital Ticket Vending Machines: Automated kiosks with multilingual options and cashless payment.
- 2. Integrated Kochi Mobility Card System: Enables unified travel across ferry, metro, and bus networks. This can lead to more connected networks.
- 3. Solar Roof Panels: Generate clean energy to power lighting and kiosks.
- 4. Tide Monitoring Sensors: Track water levels for safety alerts and boarding ramp adjustment.

CCTV & Motion Sensors: Enhances security and manages user movement during peak hours.



The digital ticketing system integrates QR code-based and NFC (Near Field Communication) ticketing, allowing passengers to purchase tickets using mobile apps, smart cards, or at digital kiosks placed within the terminal. This reduces waiting time, eliminates paper use, and ensures transparency in fare management.

- 2. Users can buy tickets via a dedicated ferry app or through integration with the Kochi Metro app or Kochi One card. A rechargeable card valid across ferry, metro, and bus networks, enabling seamless inter-modal connectivity.
- 4. Real-time data from scanners is transmitted to a central control system, helping manage ferry occupancy, timing, and security. The solar integration system aims to transform the Fort Kochi Ferry Terminal into a self-reliant and energy-efficient public space, harnessing renewable energy to power all essential operations while maintaining harmony with the region's coastal and heritage character.

- To enhance the efficiency and connectivity of the Fort Kochi Ferry Terminal, the proposal integrates smart mobility technologies through existing and adaptable digital platforms.
- By linking ferry operations with established systems such as Kochi One, SWTD E-Ticketing, and Smart City Kochi, the design envisions a seamless, user-friendly, and data-driven mobility experience.
- These applications enable digital ticketing, real-time tracking, and integrated payment systems, ensuring accessibility and convenience while supporting the heritage and tourism character of Fort Kochi.
- Kochi one app, namma yatri, Kerala State Water Transport Department (SWTD) E-Ticketing, these are some of these websites we can propose for the e ticketing



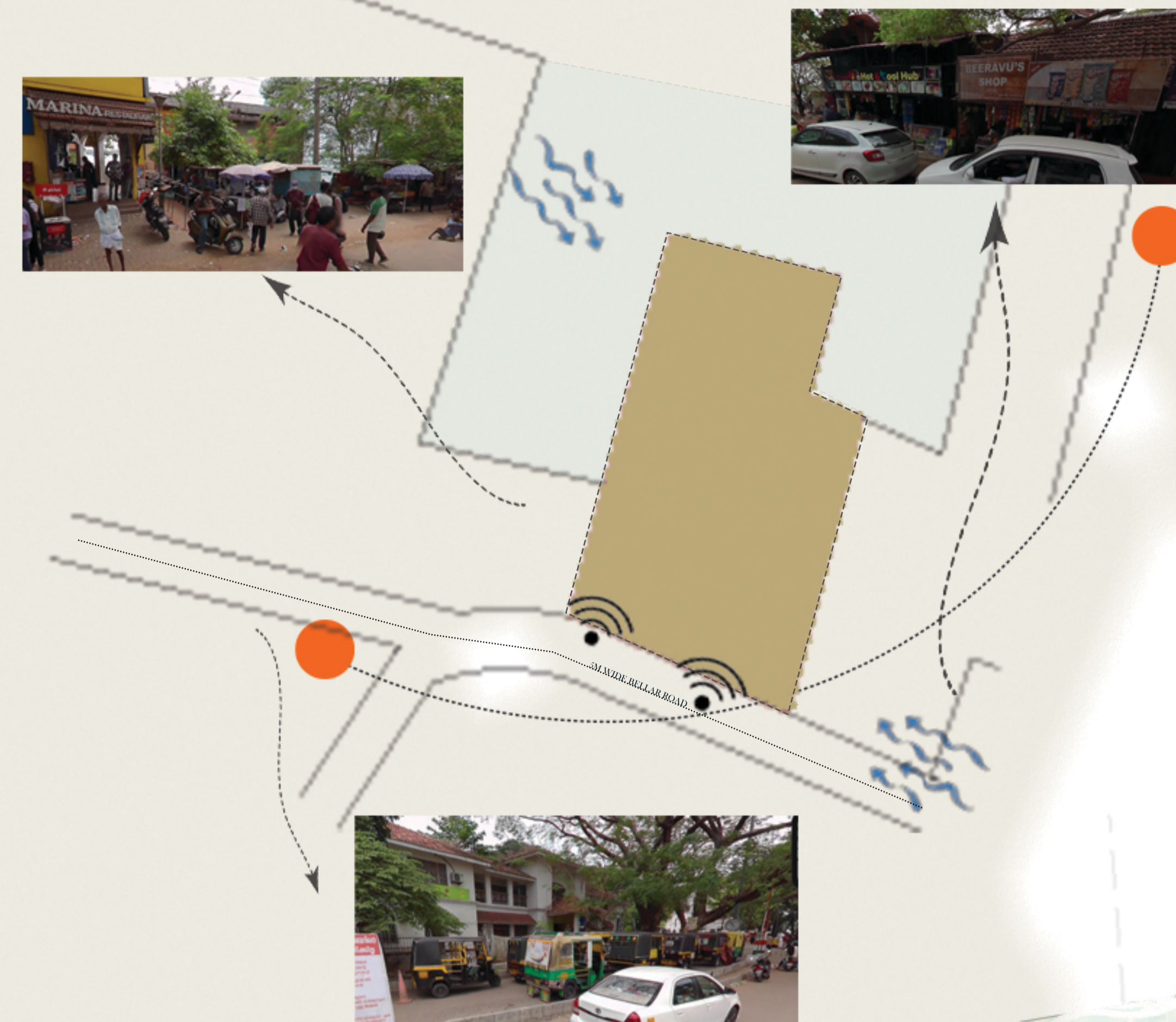
CONCEPT DEVELOPMENT :

In respect to the rich heritage character of Fort Kochi, the design concept for the ferry terminal draws inspiration from its traditional architectural language and cultural identity. The structure incorporates sloping tiled roofs, wooden detailing, and open verandah-like spaces that blend seamlessly with the historic surroundings. Modern elements such as solar panels, digital systems are integrated thoughtfully without disturbing the visual harmony of the area. The design aims to create a balance between heritage aesthetics and contemporary func-

user-friendly urban mobility.



SITE ANALYSIS :



SWOT ANALYSIS :

- S** Existing ferry movement and connectivity make it a viable transport hub. waterfront location with direct river access suitable for ferry operations. Proximity to tourist attractions
- W** Limited land width along the river edge restricts large-scale expansion. flooding and tidal variations may affect accessibility. Traffic congestion along River Road limits vehicle parking and circula-
- O** Integration with Kochi Water Metro and eco-mobility systems terminal can become a cultural gateway highlighting Fort Kochi's heritage.
- T** Sea-level rise can cause risks. Strict heritage and CRZ regulations may restrict new construction or expansion.

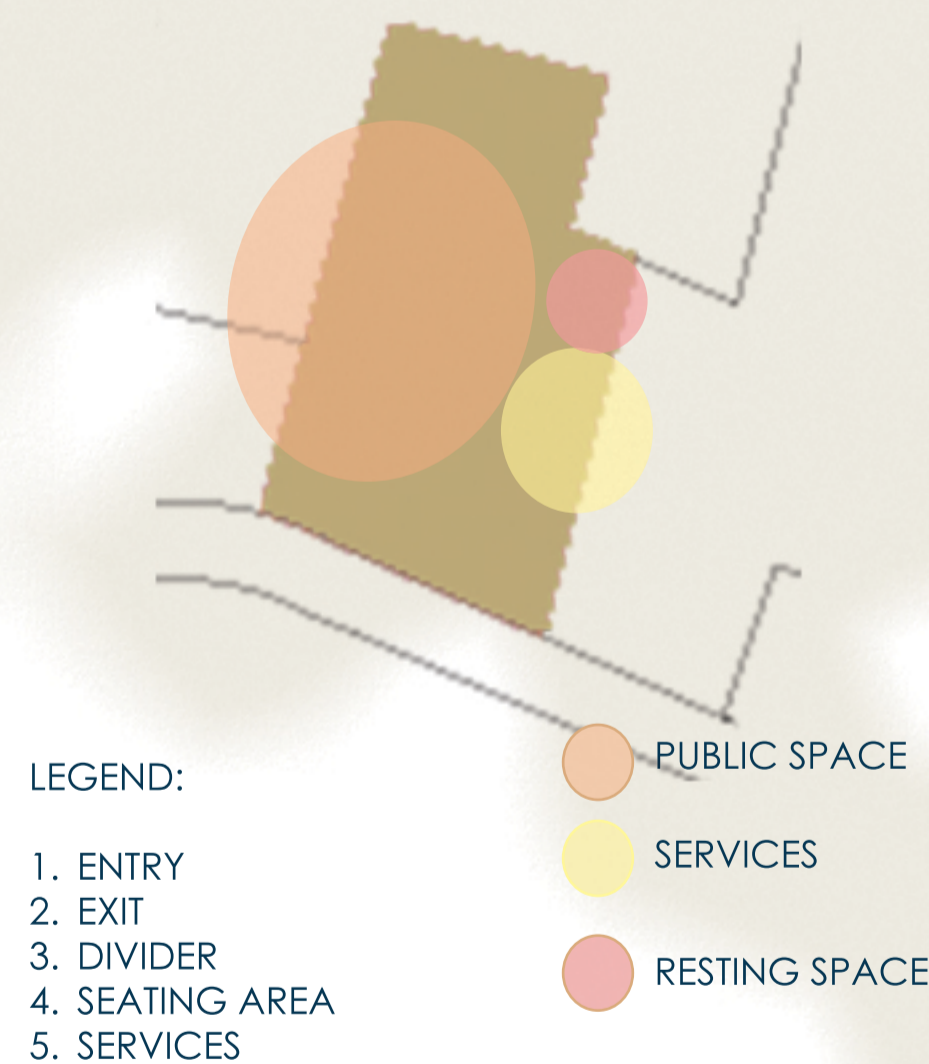
Heritage and CRZ regulations further restrict large-scale development, requiring context-sensitive design interventions. Despite these constraints, its existing ferry connectivity and waterfront character make it a strong potential hub for smart and sustainable mobility. Integration with the Kochi Water Metro can transform it into a cultural gateway celebrating Fort Kochi's identity.

Fort Kochi Beach — about 0.5 km away. Jew Town, Mattancherry (spice market & synagogue area) — about 2.7 km away. Ernakulam Junction Railway Station — approximately 9.7 km away.

No vegetations or obstructions over the site. Soil type is mostly of Coastal Alluvium with hydromorphic saline soils.

MASTER PLAN:

ZONING :



The master plan of the proposed Fort Kochi Ferry Terminal is designed to create a smooth flow of movement while respecting the site's compact and heritage-sensitive context. The layout includes a clearly defined entry and exit along Bellar-River Road, reducing traffic conflicts and easing pedestrian access. A central waiting and seating area overlooks the waterfront, shaded by solar canopies to enhance comfort and sustainability. Service zones, including ticket counters, restrooms, and retail kiosks, are strate-

plan integrates landscape buffers and smart mobility access, transforming the terminal into an efficient, people-friendly cultural gateway to Fort Kochi.

