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FERRY TERMINAL PLANNING FOR THE REVITALIZATION OF NIGERIAN WATERFRONTS

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Abstract

Ferry terminals are a necessary resource for persons who often travel between islands or communities ashore. As a result, ensuring a smooth and efficient flow of people and vehicles while ensuring safety and convenience at the ferry port is critical. The goal of this research was to look at urban revitalization in port regions in Nigeria that are no longer used for port activities for a variety of reasons, notably in Port Harcourt, Yenagoa and Calabar. Because boat services have grown substantially in Nigeria, now is an excellent moment to build ferry systems that would aid in the regeneration of city waterfronts. Although there is no perfect formula for waterfront rehabilitation, certain principles may be developed. This study presents a framework of organizational, yet customizable, human well-being indicators for the administration and development of ferry terminals. Through the review of two terminals in the Puget Sound area of the United States, identifying many essential variables required to construct project-specific human well-being indicator frameworks for urban waterfront redevelopment projects. These factors include: defining the goals and objectives of a given project at the outset, acknowledging contextual conditions such as prospective land uses and projected users, identifying the stage of development or management to use appropriate indicators for that stage, and developing and utilizing data sources on a similar scale to the project's size.

Keywords*: crowd control, extreme events. passive strategies, emergencies*

1.0 Introduction

This study investigates how the design of ferry ports' industrial zones and terminals might be enhanced in order to strengthen links and partnerships between ports and their waterfronts. No ferry terminal has ever existed in Yenagoa, the capital of Bayelsa state, since it was established in 1996 by Nigeria's then military authority (Ikporukpo, 1994). The jetties and quays, which were in ruins with just a handful given a face-lift, were known or existed and still exist. Because most of Nigerian villages and settlements are surrounded by water, the state is classified as a riverine state. It is worth noting that water covers three-quarters of the state, and water transportation accounts for seventy-five percent (75%) of all travel between the capital Yenagoa and most of the state's

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rural communities and Local Government Areas, including the movement of goods and services, making it the state's primary mode of transportation. Nigeria has a 3,000-kilometer navigable waterway network that connects 28 states. The country of Nigeria is reported to contain around 10,000 kilometers of waterways (Ogundara, 1972).

Senator Idris Umar, President Jonathan's Minister of Transport, promised investors of the government's commitment to upgrading inland waterways during an international conference conducted by the National Inland Waterways Authority (NIWA) in 2014. According to the minister, transportation is the engine that drives a country's economic progress; hence the national transportation policy's goal was to remove any hindrance to that growth. Hence, the importance of providing a contemporary and standard ferry terminal infrastructure within southern Nigeria.

2. Literature Review

Port Terminals Activities in Nigeria

During the fifteenth century, port operations were also recorded in Nigeria (Ogundana, 1970). "Scientific data was carried out on the relevance of changing port in Nigeria as a consequence of six eras of alternating dispersal and concentration, as explained by noted (Ogundana, 1970). The Europeans' activity all along Nigerian coast was limited." The arrival of the first Europeans, the Portuguese ship, on the Nigerian beaches in Benin, was considered as an exciting beginning in the history of water travel in Nigeria. Until around 1520, the Portuguese had substantial commercial links with the Benin people. Also, the locals were active in many sorts of commerce with the British and Dutch who landed along the shore at this time. By the 18th century, the people of Nigeria's coastal area had made trade and transportation a way of life.

Many locals in the Delta area dealt with Europeans and carried their commodities using river navigation when the British authorities established the Royal Niger Company in 1886. Prior to the full colonization of Nigeria in the 1900s, the Royal Niger Company, which was employed to transport troops up to the north, was finally changed into a passenger and commerce ferry boat. Nonetheless, maritime transport rose in popularity in the country's coastal areas. It was traditionally associated with the expansion of fishing operations, particularly among the Ijaws of Rivers and Lagos State. During the closure of the Atlantic trade routes and the trans-Sahara, local fisherman assisted in the operation of the dug-out canoe, which was primarily employed for riverine travel and fishing. Gwato was the most important economic sector.

The Warri Kingdom was also involved in trading, most likely through Ode Itsekiri. Bonny was a significant port, but European relations with other rivers, like as the ancient Calabar, were limited. Since the country's independence in 1960, the transportation sector has been a major economic force. To this goal, a transport ministry was established to coordinate and offer the many kinds of transportation available to the general public. This ministry is divided into sub-sectors known as parastatals. In 1955, the Nigerian Ports Authority (NPA) was

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established, paving the way for organized port development of a country. All external trade navigations into the nation are handled by it.

Waterfront Development

Waterfront development can encompass any mix of land uses, and shoreline projects might be new or redevelopments of existing waterfronts into new destinations. Some waterfront developments are geared toward industrial applications, such as industrial ports, while others are geared toward recreational and tourism-oriented uses. It is crucial that a variety of uses occur along a waterfront, bringing in as many interests as possible, but it is not required that a variety of uses occur inside each project. For example, it may not be suitable to situate a public park and residential neighborhood inside the same zone as an industrial port for environmental, public safety, and security concerns.

Original waterfront developments concentrated on commercial and urban waterfronts, and they began as commerce hubs (Breen & Rigby, 1996, 1994; Ryckbost, 2005). That is, the municipality located on an inner river or body of water relied heavily on water for transportation of the goods. Waterfront communities arose after sailors and traders moved along the water's edge, although the majority of residents in these commercial or industrial waterfront neighborhoods are from the middle and lower classes. As a result, industrial buildings and warehousing were constructed along the waterfronts to accommodate commerce, eventually becoming a central focus for the city.

Waterfront Revitalization

Waterfront revitalization has been the world's most amazing urban development effort during the previous two decades. Waterfront revitalization, according to Bruttomesso, is a "true urban revolution." Bruttomesso (Bruttomesso, 1993, p. 10) Waterfronts had seen the most drastic urban regeneration of twentieth-century cities, with changes in their physical structure, function, usage, and social pattern. Because the majority of the world's major cities are located on the water's edge, rehabilitation of waterfronts is referred to as downtown development. Waterfronts, as new potential urban sites, provide excellent opportunity for creating modern urban sculptures. As a result, integrating such areas into the existing urban fabric became a critical challenge for urban design and planning disciplines.

The waterfront rehabilitation phenomena of our time started in the 1960s, flourished in the 1970s, intensified in the 1980s, and will proceed (Breen & Rigby, 1994). Waterfront projects have consistently gone through periods of transition from water-dependent business (industrial, shipping, and transportation uses) to more community engagement. According to Hoyle (2001a), waterfront rehabilitation is mostly, but not entirely, connected with coastal regions.

This shift has already been accomplished in a number of cities. Baltimore, Boston, and Toronto are the major cities in America that the media and academia have recognized as leaders in waterfront rehabilitation. The well-publicized success and growing number of waterfront

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rehabilitation projects in all other nations has sparked a surge in demand in this proposal (Breen & Rigby, 1994). Even though the scope and form of waterfront redevelopment vary from city to city owing to original development patterns, the core concept of development remains the same. To date, the modern concept of waterfront developments must continue to adapt to new and evolving needs while seeking to conserve the history and natural qualities of the area (Zhang, 2002).

3. Research Methodology

The descriptive research technique was employed in this study, with case studies serving as the major kind of descriptive research. To obtain information for this study, the researcher took many field excursions to several established local jetties around the country. Consequently, no international excursions were taken, but data was gathered through their websites. A comprehensive analysis of the study's books, journals, and other recorded research was conducted. The primary and secondary data employed in the study came from these sources. Ferry system planners must examine elements other than typical market analysis to optimize the advantages of ferry systems. Clearly, with an increase in the number of passengers, routes, boats, and innovations, ferries have the potential to play major roles in increasing the quality of life and economic viability of cities and their surrounding regions. Simultaneously, this seemingly harmless mode of transportation might have detrimental implications. It all comes down to planning—seek out a number of planning factors that we will outline in this study. To investigate models of ferry systems and ways they might benefit their urban regions, the researcher made site made reviews on two ferry systems: Vertaterminalen ferry terminal, Stockholm, Sweden and 5 Cowries Creek, Falomo, Ikoyi, Lagos

3.1 Vertaterminalen Ferry Terminal, Sweden

Introduction

The new port for Stockholm's permanent ferry connections to Finland and the Baltics will be an architectural and environmental highlight for the Norra Djursgrdsstaden development. The terminal's firsthand experience exhibits a confident realization and immediate detailing, demonstrating an original new typology in the area.

Combining a city park with infrastructure

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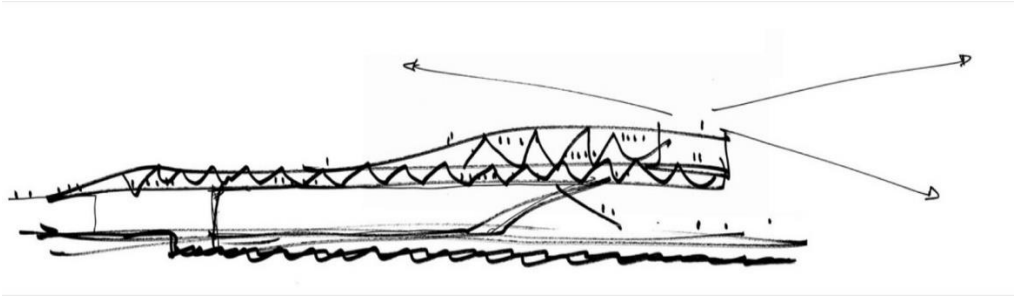
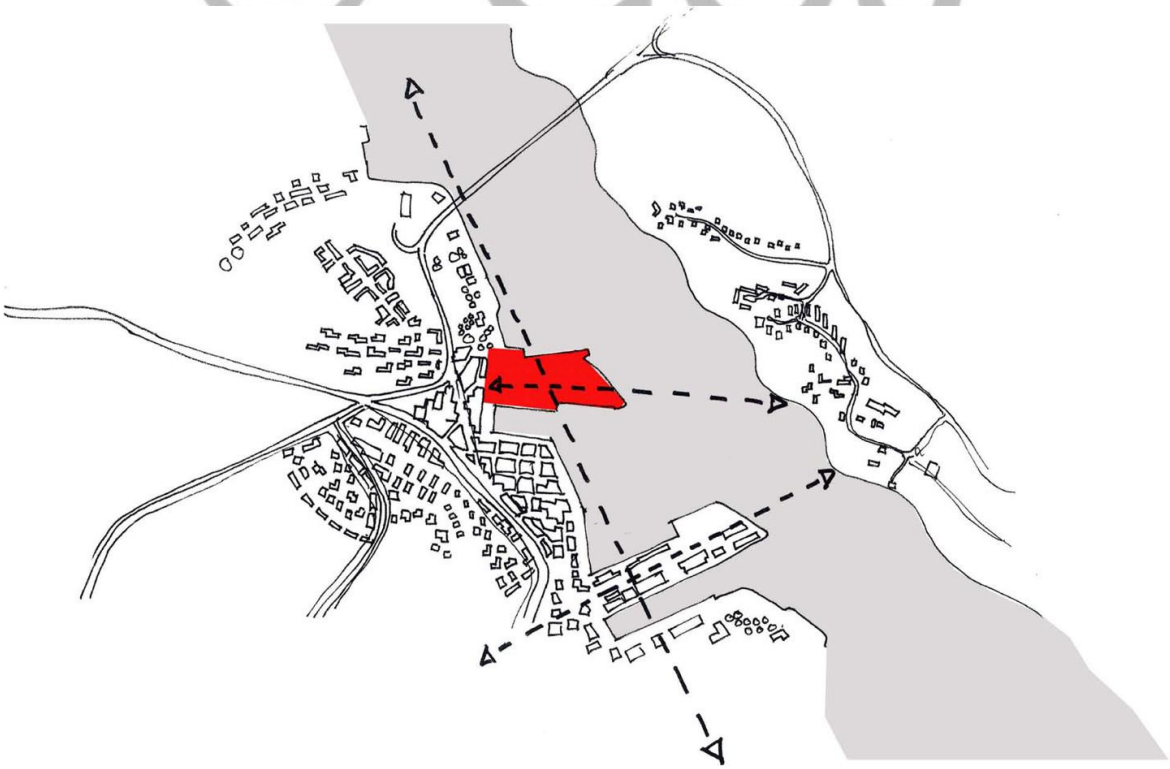


Figure 4.5: Conceptual sketch (Source:www.archdaily.com)

The terminal's design is inspired by the shape of a moving ship and the architecture of previous ports, which had massive cranes and warehouses. At the same time, the terminal has a forward-thinking, long-term sustainability profile that is representative of the overall development. The major concept was to establish natural links between central Stockholm and the new urban region, which would allow city activity to naturally flow into the area. As a result, the terminal has been raised to be level with the urban zone, making it accessible to both pedestrians and traffic. At the same time, the terminal building's roof is built as a diversified green landscape with stairs, ramps, niches, and cozy corners, encouraging both Stockholmers and travelers for a stroll or peaceful moments while admiring the ships, archipelago, and city skyline. In this approach, the border between building, port, and rooftop landscape is drastically blurred, tying the terminal to its marine surroundings in a direct manner, both in size, tectonics, and materiality - as well as back to the city through its accessible public park on top.



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Site plan of terminal

Figure 4.8: (Source:www.archdaily.com)

Assessment

Traveling to and from Finland and the Baltic countries, an estimated four million people will transit through the Värtan Ferry Terminal each year. The terminal's firsthand experience indicates a confident implementation of a design goal, as well as an inventive new typology capable of integrating fluid traffic and passenger areas. The enormous, continuous surfaces of the terminal, which weave inside and outside together, add to this effect. Since their debut in 2016, the terraces have been used for a variety of impromptu events. The fact that yoga is included in these activities should come as no surprise: the park is a quiet space, and the meadows were already distinguished by soft grasses and bright flowers in its first season. The plants will be mowed once a year in the early spring and treated as a meadow. The terminal's interaction and harmony with its surroundings, as well as the long-term durability of this big-picture solution, have all been considered in the design. The ferry terminal acts as a public attraction and a different form of park in this expanding city district because of its unique location and special environment—it is thus an innovative and new typology. Residents, employees, and travelers congregate here, and the public area simultaneously acts as a local node and an international transit hub.

3.2 Five Cowries Terminal, Lagos

Figure 4.14 : Exxterior View of terminal (Source: Arch Daily)

The Lagos State Waterways Authority Act, adopted by the Lagos State Government (LASG) in 2008, established the Lagos Waterways Authority (LASWA). LASWA is in charge of coordinating and administering the reforms needed to ensure the long-term growth and development of water transportation in Lagos State, including the awarding of ferry licenses and concessions for terminal operation to the private sector. These reforms encompass the

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construction of a long-term regulatory environment that encourages the private sector to participate in the supply of water transportation services. The LASG has begun on policy reforms through LASWA that promote and enable investments in water transportation in order to realize its potential as a viable mode of transportation. LASWA's primary job is to manage, improve, and expand inland waterway navigation options in Lagos State.

About the project

The LASWA headquarters are situated on the banks of the 5 Cowries Creek in Falomo, Ikoyi, Lagos. It is bordered on the east by the Falomo bridge and on the north by the 7-story Multi-Storey Car Park. The structure is a three-story Jetty Terminal building (LASWA Head Office) with a GIA of 2,010 m. sq. and 20 berthing spaces.The development is planned to take full advantage of the water's edge views. The entire curtain wall on the building's south façade, as well as the circular perforated window holes on the cladding wall on the east and west sides, convey this notion. The roof merges with the north side façade, shielding the service zone from direct view.

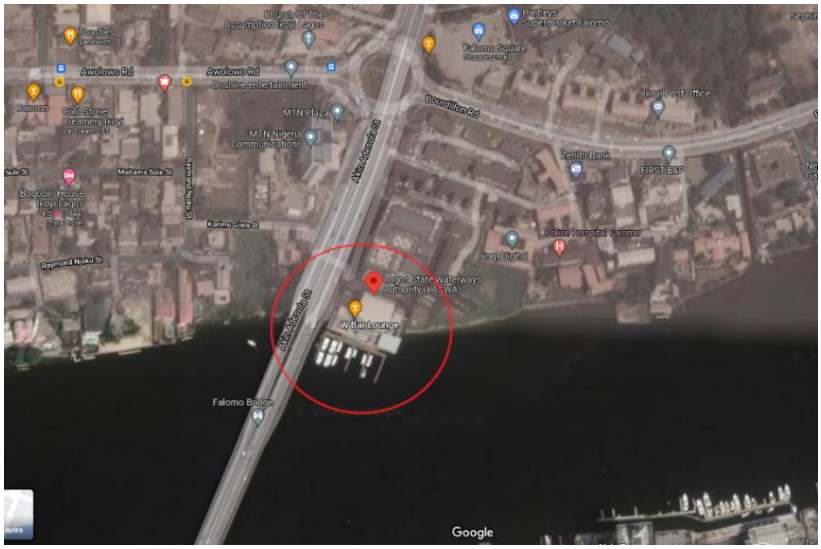

Figure 4.15 : Site plan of the Terminal (Source: Arch Daily)

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Figure 4.16 : Exterior view of the Boat Terminal (Source: Arch Daily)

4. Analysis: Ferry Terminal Planning for area revitalization

Ferry systems may assist cities both economically and in terms of quality of life. The use of ferries for pedestrian transportation; seamlessness and attractiveness to residents and tourists; and as links to engines of economic growth, whether commercial, waterfront residential, or tourist, are all success criteria. Whether the ferry systems are public or private, municipal policymakers should consider the planning concerns highlighted in this article. Even if there is no direct support, private systems are the consequence of public investments; private systems frequently rely on public-sector landings and always on public-sector waterways, which are regulated by governmental regulatory and navigational bodies. We believe that there are crucial elements that enable ferry systems to assist their communities. These characteristics lead us to six concepts that planners should keep in mind while constructing urban ferry networks. The systems must:

- be considered in transportation planning.
- be connected with land-side connectivity in a seamless manner.
- be planned in such a way that the economic growth potential of their landings and terminals is maximized.
- be planned to maximize environmental advantages while minimizing negative environmental consequences
- be created with the goal of maximizing safety and security
- be designed to handle freight wherever possible.

Including Ferry Services in Transportation Planning of a city

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Waterborne transit and waterborne freight must be integrated with other surface transportation modes, and urban transportation planners must combine waterborne and surface transportation planning. This kind of integration is uncommon. Regional planning groups, known as Metropolitan Planning Organizations (MPO)s, are currently focused on surface transportation modes such as roadway/highway, rail, and, to a lesser extent, bicycle and pedestrian. Ferry transportation is rarely included in a comprehensive transportation strategy. The Joint Roadway/Transit Planning Regulation, approved in 1975, established MPOs under state law, who are expected to develop a multi-year "transportation improvement program" (TIP) that encompasses all highway and transit projects to be completed within a five-year period.

For the purposes of the Act, ferry operation is considered a transit application. However, unless the canal is entirely inside a certain MPO, meeting the statutory standards may be difficult or impossible. Much transportation planning focuses entirely on the land side—cars, trucks, and trains. Regional planners seldom consider water transportation, and when they do, they do not consider integrating terrestrial connectivity, such as public transportation, with the water.

Bringing Ferry Systems and Land-Side Connections Together

Infrastructures for Interfacing

When the linkages between the two systems are smooth, ferry systems are useful components of transportation networks. Even when surface transportation linkages (parking lots and/or buses linking to the ferry system) have been established, there has to be a greater emphasis on the interfaces with those land-side connections. The crucial factor that is sometimes overlooked is how the passenger transfers from the boat to the automobile, to the pedestrian walkway, and/or to public transportation. Is there a direct connection to and from parking lots, roads, and public transportation? Are there connections to subways, urban buses, and other ferries? What is the terminal experience, as an intermodal connection, and as a destination?

Maximizing the Economic Development Potential of Ferries

Ferry planners, both public and private, routinely focus on improving transportation alternatives when designing ferry systems, with the expectation that economic development will improve as a result. Ferries, on the other hand, have the potential to boost a region's economic development in specific ways. Ferries can stimulate economic development by attracting discretionary spending and increasing land values. Ferries, in particular, can boost tourism, and tourism, in turn, can boost the generalized quality of life for residents and potential residents. Ferries can also increase the value of waterfront communities by providing another mode of transportation. In fact, ferries can create a real estate market for what would otherwise be an isolated waterfront area. The same ferries utilized for commuting can also be used for pleasure trips. Investing in making this a reality benefits both the ferry operator's business line and the quality of life for locals and visitors. Audience and private enterprises should be aware that, according to a 1999 poll conducted by

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Pierless, a magazine servicing the Metropolitan New York City ferry riding public, 19 percent preferred the boat because the voyage was delightful.

Tourism

Ferry systems may help tourism in numerous ways:

- Availability: Ferries provide easy access to city centers and urban attractions for inhabitants and tourists in waterfront communities. In the other way, boats provide residents and visitors in downtown neighborhoods with easy access to waterfront attractions.
- Publicity: Ferry terminals and boats themselves can be used to advertise sights and attractions at or near their destinations through pamphlets and posters.
- Attraction: The terminals themselves may be interesting attractions. Terminals can provide large open spaces with waterfront views and, if done correctly, can become tourist destinations in their own right.

Ferries can stimulate economic growth by attracting discretionary expenditure as well as increasing property prices. Ferries, in particular, may boost tourism, and tourism, in turn, can boost the overall quality of life for current and future residents. Ferries may also increase the real estate value of coastal areas by providing another mode of transportation. In fact, ferries may create a real estate market in what would otherwise be a remote seaside locale. The same ferries utilized for commuting can also be used for pleasure trips. Investing in making this a reality benefits both the ferry operator's business line and the quality of life for locals and visitors.

5. Conclusion

Clearly, Ferries provide a unique mode of urban transportation that not only provides users with joyful experiences (combining the work commute with leisure); they also contribute to possible reductions in air pollution and traffic congestion. However, if essential planning concerns are not carefully considered, these gains will be lost or, worse, present problems will increase. To achieve success at the next levels, planners must assess present procedures and planning methodologies.

- *Integration of transportation networks:* The obstacles are integrating across several modes, jurisdictions, and the public-private split. Creating seamless linkages with other systems and economic activity other than commuting promotes the city economy, fosters expansion of the ferry system, and improves the quality of life for city dwellers.

- *Land-side interface*: As conditions change, the physical relationship between the terminal and the outside world must be monitored and reformed. Similarly, an information/communications link must be built and maintained for tourists, necessitating the employment of an information-rich network (signage, brochures, telecommunications, and interactive Web site).

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- *Economic development*: Attention to economic development by the public and private sectors ensures the expansion and long-term sustainability of this significant component of the mass transportation system, as it offers short-term economic stimulation.

- *Environmental concerns*: Obtaining favourable results from the usage of ferries will need the deployment of new technology and ongoing monitoring. It will also need a grasp of the impacts of wakes and fuel systems, as well as knowledge of the kind of boats that minimize such effects.

- *Safety and security*: To improve public safety and national security, ferry operators and terminal planners will need to address the water transit system's vulnerabilities while communicating and acting on the system's unique capacity to respond to emergencies.

- *Freight*: To improve the dependability of time-sensitive cargo transportation, especially perishable items, planners and private-sector actors must study the role of maritime commerce at the local level. Direct water access to locations provides an unrealized potential to divert freight away from the road network.

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