Waterfront sustainable development concept, Mombasa, Kenya

Project data

Type of project: Architecture (tourism)
Estimated start of construction: Not applicable

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Comment of the Holcim Awards jury Africa Middle East

The project proposes a holistic intervention towards an intensive commercial development of a highly-attractive prime beach area located within a hot-humid tropical climate in Mombasa, Kenya. At the same time the prevailing threats of pollution by sewage water and solid waste as well as the naturally driven erosion of the coast line shall be stopped. All the future buildings will be built in compliance with actual state-of-the-art technology of sustainable construction. The whole complex will incorporate a series of socio-cultural facilities and will be embedded in a large, intensively landscaped garden to which the public will have free access. The project is commended due to its attempt to combine the usually prevailing financial goals of professional investors with a multitude of quantitative as well as qualitative environmental and social targets.

Project description by author

Mama Ngina waterfront is located on a prime beachfront area on the island of Mombasa (the second largest city in Kenya and largest port in Eastern Africa). The waterfront site is currently used as a recreational park. Many public waterfront locations in Eastern Africa are unfortunately under-exploited entities. Mama Ngina waterfront in particular is susceptible to pollution, degradation and degeneration and environmental abuses are the order of the day. This in turn reduces the vast potential that the waterfront could offer to its everyday users.

This design understands the reasons that have contributed to this trend and further examine systems and strategies that enhance waterfront development from a planning, construction management, and post-construction management point of view of waterfront developments. Worth noting is that Mombasa experiences a warm, humid climate. For comfort levels to be achieved in indoor spaces, the following interventions have been as per computation of the Moomby tables manual for tropical housing spaced out buildings to allow for airflow: a) air movement within interior spaces is vital for comfort; b) single bunched structures (with limited or preferably no intermediate partitions); c) raising the structures for air to flow below; d) permanent ventilation to be used; e) possible low-energy ventilation and air circulation assistance (extractor fans).

The thrust of the project is provision of museum theme, of which facilities within are accessible to all: both locals and tourists. There shall be no entry fees to the museum. Economic sustenance of these museums will be met by rents borrowed by other neighboring regional waterfront projects. The proposal incorporates a waste management centre, uses efficient materials and passive ventilation systems. The single banked buildings are effective in utilizing cross-ventilation. The project focuses upon harnessing renewable energy and the ecological park maintains and introduces additional planting. The semi-hard landscape allows for surface water to percolate to aquifers below, keep dust in check so as to have healthy users and is sustainable as it can withstand constant tear and wear. New construction has minimum effects on marine ecology and designed for sufficient shading and to enable full length glazing to capture natural light while the shaded façades provide thermal protection. Marine museum and marine research facility program enhances marine life.

Quantum change and transferability

Unconventional approach to the concept of a “museum” – unrestricted and unlimited access. Building is situated on the cliff face. Waste management is incorporated as a branch of research facility. The museum is a new concept and unique building typology. The concept incorporates unique museums (maritime, marine, food, ecological museum etc.).

Ecological quality and energy conservation

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Economic performance and compatibility

The museums are economically self sustaining. Curio shops selling replicas of exhibits in the artifacts museum and an interdependence of the commercial functions within the facility fund the project. Free access aquarium is economically sustainable by funding for marine research, provides local employment opportunities, diverse traditional and modern opportunities. Wealth creation workshops is generated from numerous commercial ventures and creates a major tourist destination. Sea land use efficiency is reclaimed.

Contextual and aesthetic impact

Built form conforms to the site and utilizes unique materials and components. The rustic cliff emphasized by the building’s rugged look and vegetation. The aquarium celebrates marine life. The project demonstrates a unique approach to conservation and creates awareness for the park visitors. Conservation through contextual design creates awareness. A development of this magnitude is the best response to the site.