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THOLKAPPIA POONGA ECOLOGICAL RESTORATION PROJECT

Chennai

Architect

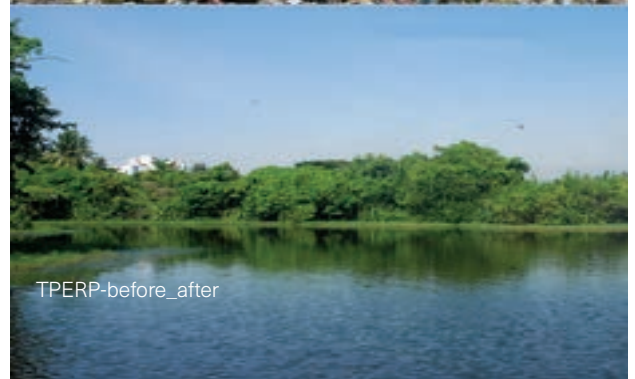
Biley Elattuvalappil Menon

This Tholkappia Poonga Ecological Restoration Project, initiated by the government of Tamil Nadu, is an environmentally significant project that has become a model for Urban Landscape Ecological Restoration. The project restores 58 acres of the Adyar Creek, which is part of the Adyar Estuary and consists of 350 acres of Adyar River's sea mouth.

The Chennai corporation had used the creek as a garbage dump yard, with several city level storm water and solid waste drains draining into the sea mouth through this patch of land. The area existed in complete neglect, the water PH was acidic, chemical contamination was high and the ecosystem was found to be degraded.

Idea Design

As an eco-sensitive architecture and landscape design firm, Idea Design focuses on everything one can see, hear, smell, touch and sense. The firm looks to question how physical environments, from open spaces and landscapes, roads and infrastructure, to proposed buildings, affect people. The practice aims to unite function, aesthetics, environmental quality and economic considerations to give their projects a distinctive sense of place and identity.



TPERP-Ecorestoration Master Plan



1	Medicinal Plant Garden
2	Sacred Grove
3	Aromatic Garden
4	Child and Mother Care Garden
5	Navagraha Garden
6	Barn Own Point
7	Chelonian Garden
8	Butterfly Garden

LEGEND	
	Tropical Dry Evergreen Forest
	Hillock
	Mangroves
	Mangrove Associates
	Meadows and Grass Lands
	Reeds and Marshes
	Mud Flats

	Fresh Water Pond
	Storm Water Retention Reservoir Wetlands
	Storm Water Inflow
	Brackish Water Wetlands
	Fields
	Farm and Vegetable Garden
	Nursery
	Avenue Trees

The history and geomorphological evolution of Adyar river and estuary was studied. This included its seasonal behavior, cyclical changes and the impact of urbanization on this eco sensitive area. Various ecosystems of the Coromandel coast were visited by the team for detailed case studies to understand the flora and fauna of freshwater and brackish water ecosystems of the coast. Detailed urban design studies were conducted in the 350 acres

of Estuary, which included a baseline survey of the status of the current ecosystem. An ecological site analysis was conducted and detailed assessment of edge conditions were done for the 58 acres of site area. The findings indicated how degraded the ecosystem was, when compared to other estuaries along the coromandel coast.



INTEGRATING THE POONGA TO THE COASTAL WETLAND

Wetlands are the fundamental component of a coastal landscape. The marshlands, mudflats, mangroves and associated flora & fauna are its components. These are dynamic water systems, which encounter constant interaction of freshwater and saltwater supporting a variety of species in various stages of their life cycle. Adyar creek is one such system, which the master plan proposes to revive and restore into a healthy example of a coastal wetland.

An ecological restoration plan was therefore devised for 58 acres of the site area. The concept design had to consider city level storm water drains, tidal variations in the brackish water ecosystem of the estuary, managing huge amounts of debris, rubbish and organic waste. A detailed technical plan for ecological restoration was developed. The entire park was divided into a combination of freshwater and brackish water ecosystems. The plan involved solutions for total water management during storms, tides, spring tides, floods and drought situations.



BIODIVERSITY RESTORATION

Although it is impossible to restore the Poonga, Creek and Estuary to its former pristine state, bio intervention can convert the poonga space into an ecologically significant and sustainable one, and also mitigate many of the problems in the larger creek and estuarine region. The process has to start with the phased eradication of *Prosopis juliflora*, implementation of a water management plan and the deepening of existing water-logged areas to create a stormwater reservoir and finally the introduction of appropriate floral biodiversity.

MANGROVES & ASSOCIATES

Mangroves and mangrove associates are considered to be globally endangered and hence their introduction to the park has high conservation value. Mangroves and mangrove associates that are tolerant to inundation and salt, are proposed to be planted in the eastern reaches of the park.



Large earthen berms were proposed along the periphery of the park to bury all the debris and rubbish below them. This enabled a visual and sound buffer from the surrounding urban edges bringing in much needed privacy that helped in the restoration of plants as well as terrestrial, aquatic and avian fauna.

TROPICAL DRY EVERGREEN FOREST (TDEF)

This is a forest type found along the Coromandel Coast from Vishakapatnam to Point Calimere. Historically it existed only as a narrow belt approximately 40km along the coast. In the Poonga Master Plan, TDEF planting is mostly concentrated around storm water retention pond, in the dry areas.



Poonga ecorestoration details



With the help of the local community, artists and student groups, the estuary was restored into a beautiful oasis with fresh water and brackish water ecosystems, developing its own forests, swamps, mudflats and mangroves. The effort resulted in creating a picturesque ecosystem, with over 100 species of birds and fish, that are seen thriving among countless amphibians, reptiles and small mammals. The Tholkappia Poonga Ecological Restoration project has today become a classic example of a successful urban ecological restoration project in the country.

