` 900.00 | ISSN 0975-0177

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landscape

landscape
LA JOURNAL OF LANDSCAPE ARCHITECTURE

2025 81sf

editorial

legacies

landscape & architecture

urban spaces

informal

infrastructure & technology

LA JOURNAL OF LANDSCAPE ARCHITECTURE INDIA

REGISTRATION NUMBER: 75500 | PRINT DURATION: Quarterly, 4 issues per year
EDITORIAL AND SUBSCRIPTION OFFICE: C-589, Vikas Puri, New Delhi 110 018 INDIA
[T]: +91-11-41584375, 9810600754, 9810252661 | [E]: lajournalindia@gmail.com
[W]: lajournal.in | ISSN 0975-0177 | 25.02.25 | D1x1 2025.03.06 | O1.S1x450 2025.03.24
OWNED, PRINTED & PUBLISHED BY Brijender S. Dua, C-589, Vikas Puri, New Delhi 110 018 INDIA
PRINTED AT Paramount Printographics, Darya Ganj, New Delhi 110 002 INDIA
PAPER | COVER Munken 300 | BOOK Natural Sunshine 120

SUBSCRIPTION
1-YEAR [4 ISSUES: PRINTED COPIES] RS. 3,000.00
SUBSCRIPTION+PAYMENT DETAILS ON: www.lajournal.in

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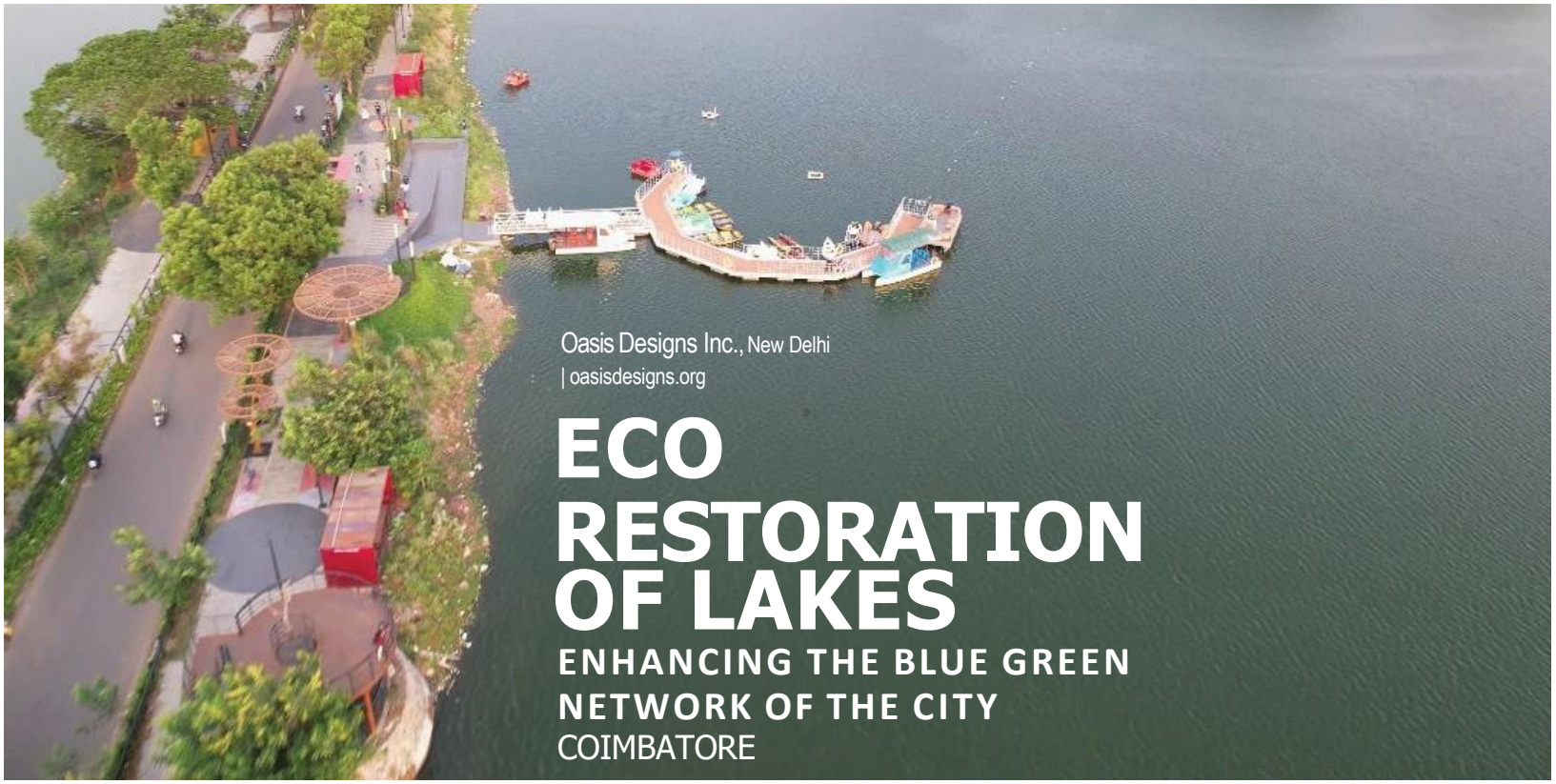
DK.ZGH | IJ.ZPKB.SH.KMKT



Oasis Designs Inc., New Delhi
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ECO RESTORATION OF LAKES

ENHANCING THE BLUE GREEN NETWORK OF THE CITY

COIMBATORE

ISOLA HONOURS & AWARDS 2024
GENERAL DESIGN AWARD
[CATEGORY – PUBLIC]
AWARD OF EXCELLENCE

WADE ASIA AWARDS 2023
[LANDSCAPE CATEGORY – PUBLIC SPACE]
FIRST PRIZE

HUDCO AWARDS 2023
[CATEGORY – LANDSCAPE]
FIRST PRIZE

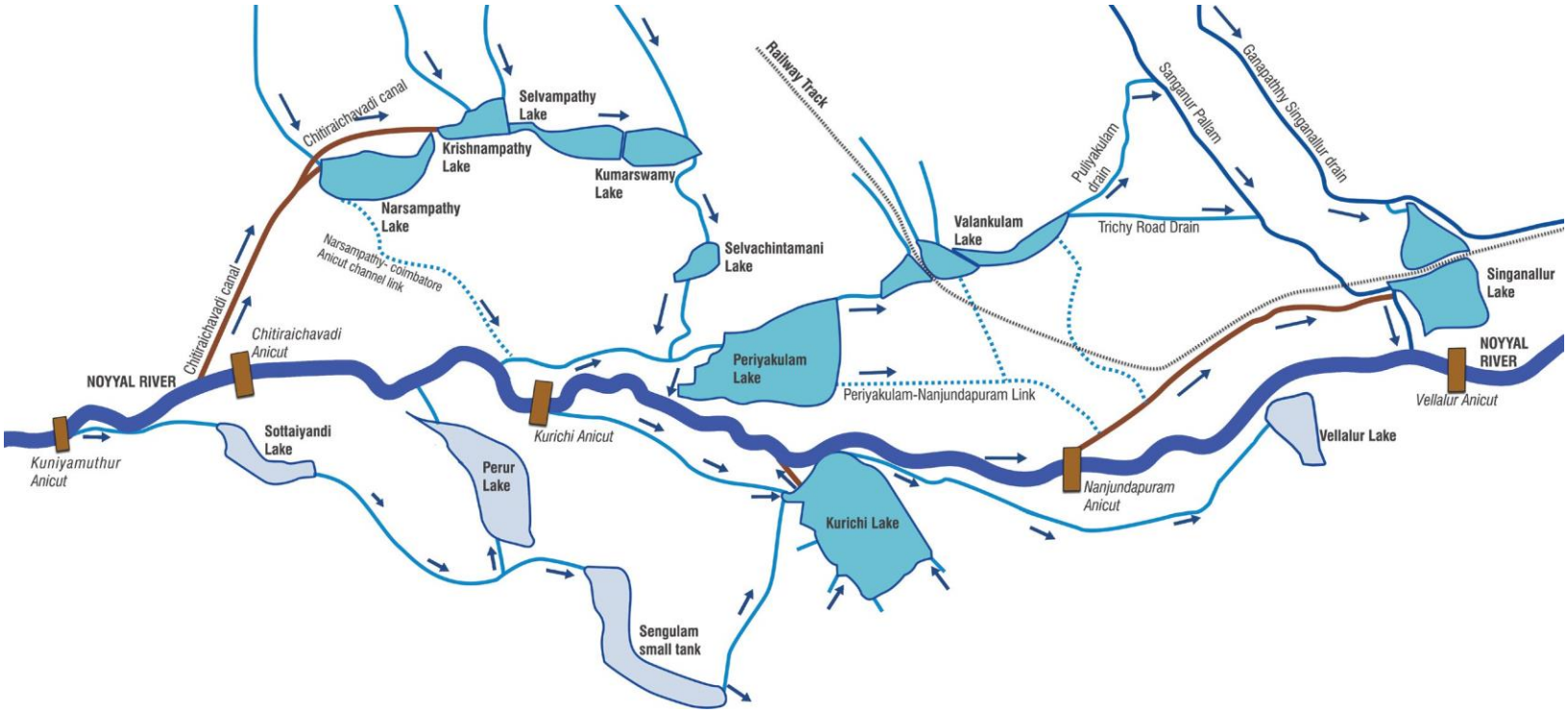
The aim of the lake project [under the Smart city Mission] is to restore the 1200-year-old lake system developed by Cholas and bring about social change by creating environmental awareness around the regenerated lake-ecology, showcasing the local arts and culture, opening opportunities for beMer service delivery, bring sports to community level participation, create skill development, and showcase urban livelihood opportunities to improve the overall quality of life in the city of Coimbatore.

Coimbatore is located on either side of the River Noyall Valley, cradled in the lap of the Western Ghats. It has a historic system of interconnected, cascading lakes built during Chola Dynasty [9th-13th century]. This unique engineering marvel ensures that the lakes capture the rainwater but also don't cause flooding. These hydraulic structures became an important source of drinking water and agriculture of the region. Unfortunately, this 800-year-old traditional nature-based solution fell into disuse as the region rapidly urbanized with historic lakes fell prey to encroachment and pollution.

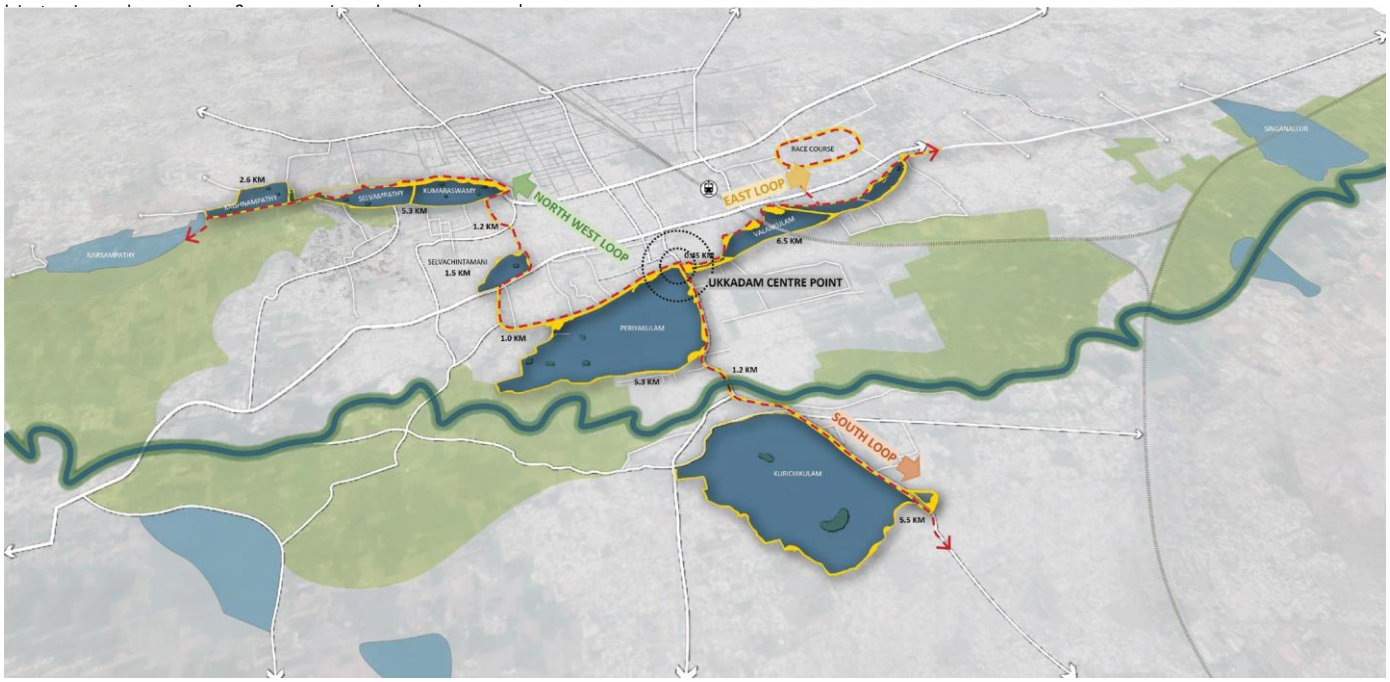
Coimbatore was one of the first 20 short-listed cities to be inducted in the City challenge of the Smart City program of the Government of India. Oasis Design Inc. won the invited design competition for this area-based development project.

At the time of start of the project, almost all the reservoirs upstream of the wiers and anicuts were completely silted, which meant that all the water in the River Noyall passed off without entering the lakes. The project was envisaged as a connected, ecological, public realm corridor; a thread which links the entire city through this river and lake system network built by the Cholas. The project aimed at developing the lake system as a "green infrastructure " that strengthens city's climate resilience, bringing back to life the lost and unsung ecological services provided by it. Presently, the 1000-acre project is underway, being rolled out at site in different phases.

Coimbatore, nestled in the Western Ghats along the Noyyal River Valley, boasts an 800-year-old Chola-era system of cascading lakes that once managed rainwater, preventing floods and supporting agriculture. Urbanization led to encroachment and silted reservoirs, rendering the system ineffective as river water bypassed the lakes, diminishing their ecological and hydrological role.



RIVER AND LAKE SYSTEM NETWORK



"Restoring the Past, Connecting Communities - Reviving Coimbatore's 1200-year-old lake system for a sustainable future"

Restore

This baseline study was correlated with all the topographic surveys to determine the levels and sizes of the inlets and outlets, which was then analysed to formulate the decentralised ecological wastewater treatment strategy for each inlet.

Regenerate

This study included studying the hydrological systems, depending on the catchment area of each lake, with the codal requirement of maintaining the main bund level at 2m above the FTL while the ring bund [the non-critical bund] to be be 0.9m higher that the FTL.

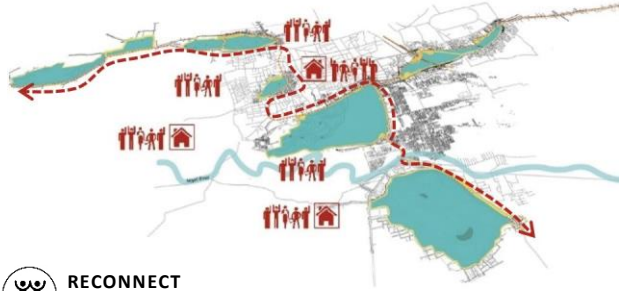
Bunds are proposed to be constructed with natural methods as possible to avoid concrete. Slopes with aquatic grasses and rocks provide the habitat for native bio-diversity, to help create a balanced lake eco-system. To ensure that the bunds do not suffer from soil erosion, apart from stripping out the loose silt and compacting the bund, revetment is provided till the water line. The slopes are dressed to a gradient of 1:2 to ensure self-stabilized repose angle – and then further protected with a geo-grid.

Reconnect

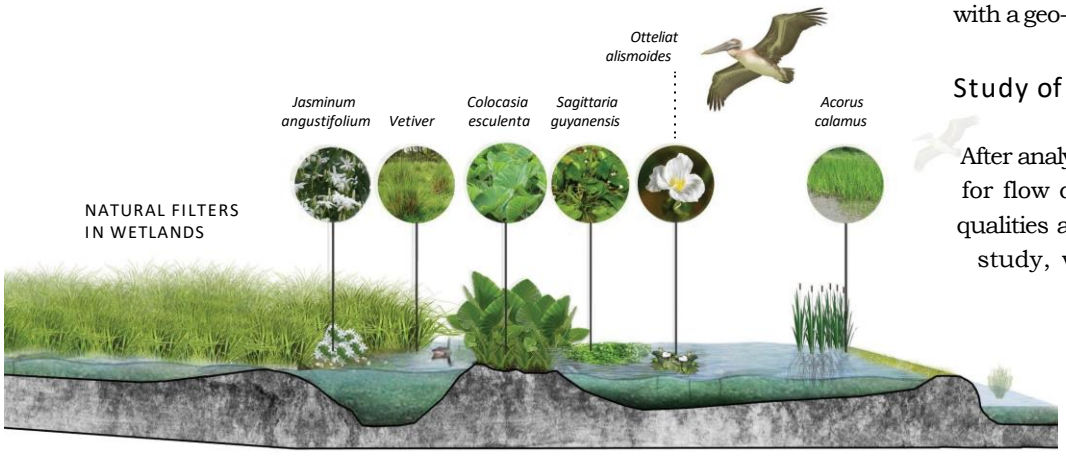
With the intent of orienting the city towards the lake, it becomes the backdrop for events catering to small kids, youth, women and elderly.The lakefronts are designed as the city's new public realm where all the local residents and tourists come to enjoy the experience.

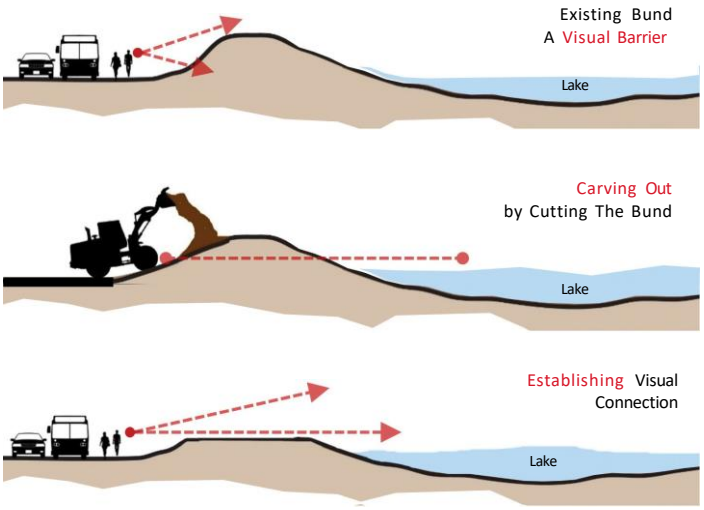
RESTORATION OF LAKES
1200 Years Old Water City

REGENERATE
Ecological Biodiversity



RECONNECT
People and the Lakes





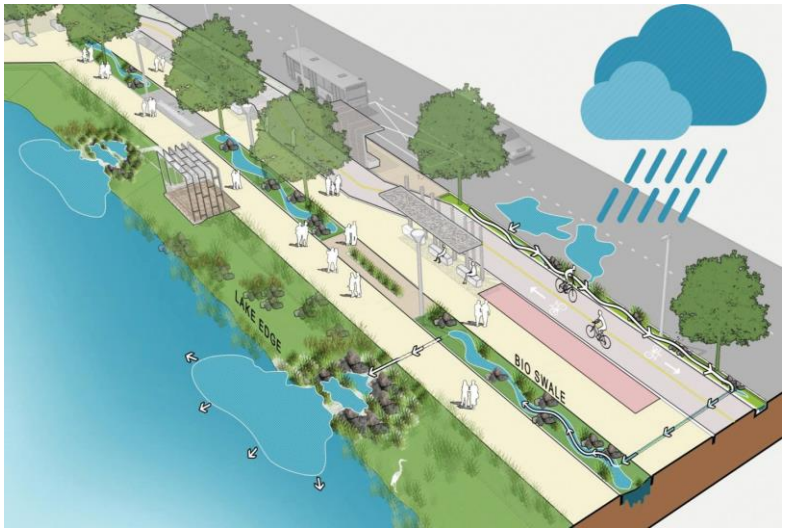
Design of Bunds

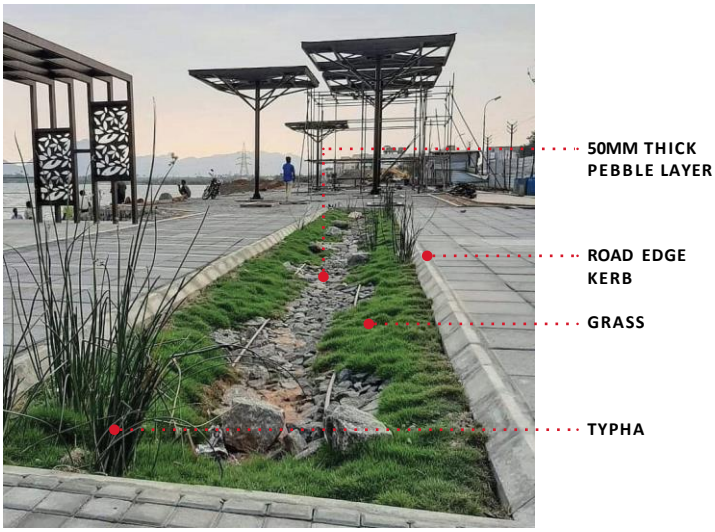
Depending on the catchment area of each lake, the codal requirement of maintaining the main bund level at 2m above the FTL, while the ring bund [the non-critical bund] at 0.9m higher than the FTL, is followed.

Bunds are proposed to be constructed with as natural methods as possible to avoid concrete. The green slopes, the aquatic grasses, and rocks provide the habitat for native biodiversity, which in turn helps create a balanced lake ecosystem. To prevent soil erosion of bunds, apart from stripping out the loose silt and compacting it, revetment is provided till the waterline and then the slopes are dressed to a gradient of 1:2 [1V:2H] to ensure a self-stabilized repose angle, and then they are further protected with a geo-grid.

Study of Hydrological Profile

After analyzing each lake for all inlets, measurements for flow quantum and lab tests for wastewater qualities are carried out to determine the baseline study, which is then correlated with all the topographic surveys to determine the levels and sizes of the inlets and outlets. These are analyzed to formulate the decentralized ecological wastewater treatment strategy for each inlet.





Planting towards the south of all promenades creates shade and ensures uninterrupted views. Lake edges have native plants to regenerate the ecosystem. Native plants including the aquatic species are planted in stratified layers of bog and marginal, to provide habitat for different life forms. Natural rocks allow for a host of fish, small organisms, and bacteria to find space in the gaps, all of which help regenerate the lake's aquatic ecosystem.

Stormwater Management Strategy

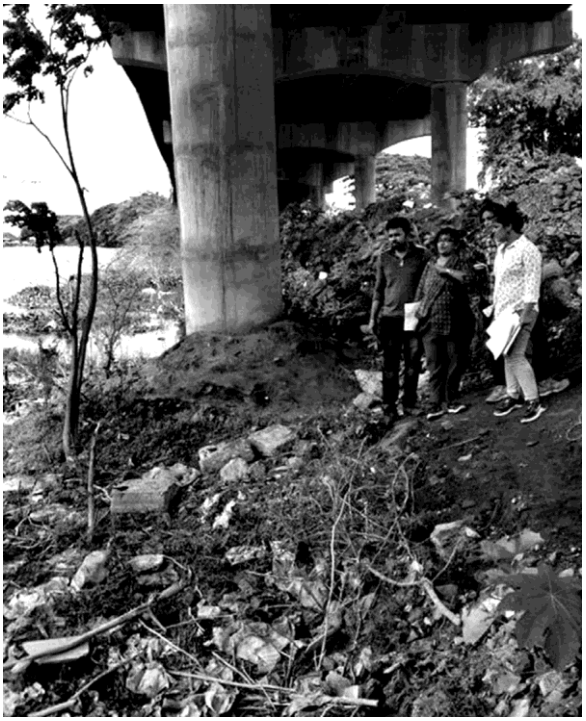
Landscape swales are designed for rainwater harvesting with rainwater from bunds gets geMing collected and recharging the groundwater.

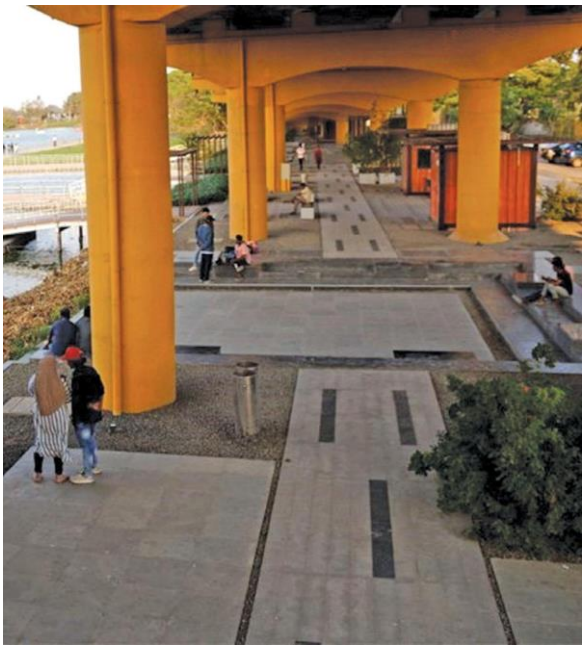
Urban Public Nodes

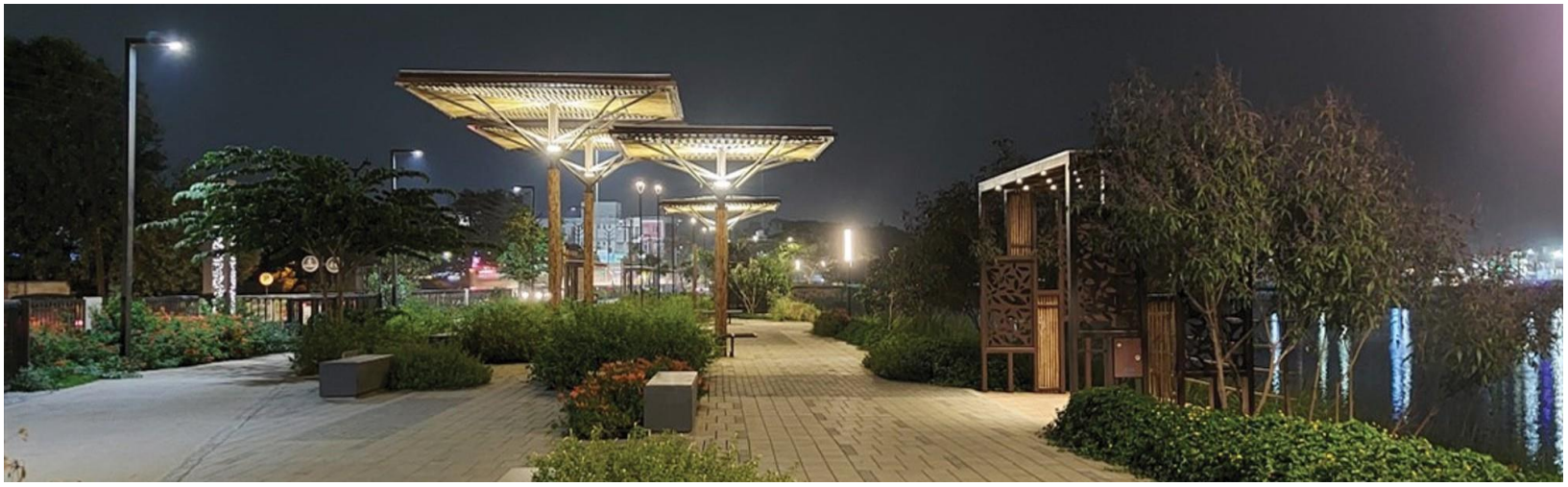
New lakefronts are designed as inclusive, barrier-free, and equitable spaces for all age groups, from children to the elderly. A 'no-construction' approach is incorporated. Prefabricated, precast elements are installed on-site to minimize disturbance to the natural ecology and to keep the whole development 'light-footed.'

Enabling Visual Experience

Coimbatore is blessed to have the hills, the lakes, and the river as its natural seMing —with lovely sunset views behind the Western Ghats, fresh breeze, and a pleasant climate—it is always fun to be outside in the evenings.







Valankulam Verandah is a 500m-long shaded waterfront space under the Valankulam Verandah is a 500m-long shaded waterfront space under the flyover built across the railway track along the southern Sungam Bypass road. As part of Valankulam lakefront development, it is envisaged as a multipurpose space that can be enjoyed by the entire city. As the only shaded space along the lakefront, it has the potential of being activated all day long with spectacular waterfront views. As there is no land access on the lakeside to connect this area to the larger project, so options of connectivity are provided to connect the east and west side via lift and an underpass. A boat connection is also provided from the existing bridge under the railway line. A pontoon float walk connects this space to the larger project area.

PROJECT SNAPSHOT

EXECUTING AGENCY: **Coimbatore Smart City Limited [CSCL]**

AREA: **1270 acre and 30 km NMT track corridor**

PERIOD: **2017–21**

BUDGET: **INR 350.40 crores approximately**

LEAD PARTNER: **Oasis Designs Inc.**

CONSORTIUM PARTNER: **CDD Society**

CONSULTANTS
Alcon Consulting Engineering [India] Private Limited
TNS Consultants
Arth Agam Architects
Vinayak Plumbing Engineering Private Limited
Precision Surveys [India] Private Limited
SGS India Private Limited
Jaitly Associates
Sonal Pareek Kaushik

DRAWINGS & PHOTOGRAPHY: **Oasis Design Inc.**