



ASHOK LEYLAND

Koi Manzil Door Nahin

CII National Award for Environmental Best Practices

Ashok Leyland Technical center

Year 2024



HINDUJA GROUP

Ashok Leyland overview



Founded by Sri Raghunandan Saran in 1948 rechristened as Ashok Leyland



Flagship company of the Hinduja conglomerate with a turnover of 2.3 billion USD



ASHOK LEYLAND



Global automotive manufacturer with Chennai as its base with manufacturing units across the world



We are the 2nd largest commercial vehicle manufacturer in India – Buses, Trucks, Military Vehicles, Indl Engines, Marine Engines & Spare parts



AL is the market leader in bus segment, carries 70million people a day

Technical center



- ❑ Facility was started at 1990 with test track
- ❑ Common R&D Facility for 7 Plants
- ❑ Center spread over in 134 Acres -1800 Employees are working -2 Shift
- ❑ It is the combination of Design -Proto and Testing facility
- ❑ Working on vehicle Alternate Fuel Programs

Started on 1989
with test track facility

RWH

Wet land forest

Engine development &

or

Key Highlights on Sustainable efforts

- ❑ First Wet land project executed in 15 Acres to enhance bio diversity
- ❑ 50 Acres of Land Utilized for Forest and Green
- ❑ 100% Water Positive & 90% Energy Positive
- ❑ 85% Green energy utilization & Carbon Neutral -85%
- ❑ Having More than 13000 Grown Trees
- ❑ Having 10 Acres of RWH with capacity of 75000KL

Design Offices

Walk through on Bio Diversity efforts



Ashok Leyland Technical Center



Concept of working started



Black Top



Yellow top



Green Top



Challenge

Creation of Green with Ecological Balance

Drive was Initiated in Year 2016
Creating the Campus by More
Green belt cover
with the concept of
Ecological Balance &
should be Industry first concept



Our Site Belongs Manali –North Chennai

Overview

Manali, India

Manali is a hub of petrochemical industrial units, Manali has been categorised as critically polluted by the Central Pollution Control Board (CPCB) for almost a decade. The pollution load in this area continues to be high and a recent study titled 'Poison in the Air' by CSO (Chennai Climate Action Group) has revealed that the industrial units in this area violated emission standards for more than half the year in 2019.

Overview

Vellivoyal Chavadi, Manali

- East part of our campus was Low level, Marsh and saline land.
- Remain water logging for few months and wet and slushy for few months and saline dry with cracks during summer.
- Low level land with no proper water drainage, stagnated rain water become saline after some time. Only few types bushes grow in the land.
- Regular Landscape Architects estimated for huge filling with brought out material, overall budget value is also high. So we unable to take the job. We were losing years.

Concept of Wet Land Forest



In house trails

As trail we made three ponds and created elevated bund with excavated soil and planted with few available saplings. The outcome was okay, though the plant growth was not satisfactory.

Auroville

Our search for good landscape consultant was continuing until our reach to Auroville botanical near Pondicherry.

After their extensive site inspection and study of our land, trail pond, they submitted a presentation for sustainable wet land forest,



Area Identification





Auroville

- In the primary assessment at the site for Ashok Leyland we knew that the project would be a challenge, due to the waterlogging of the site as well as the potential salinity of the soil due to its proximity to the coast.
- It was a monotonous area that support a minimal number of grass and sedge species that could cope with the adverse conditions.



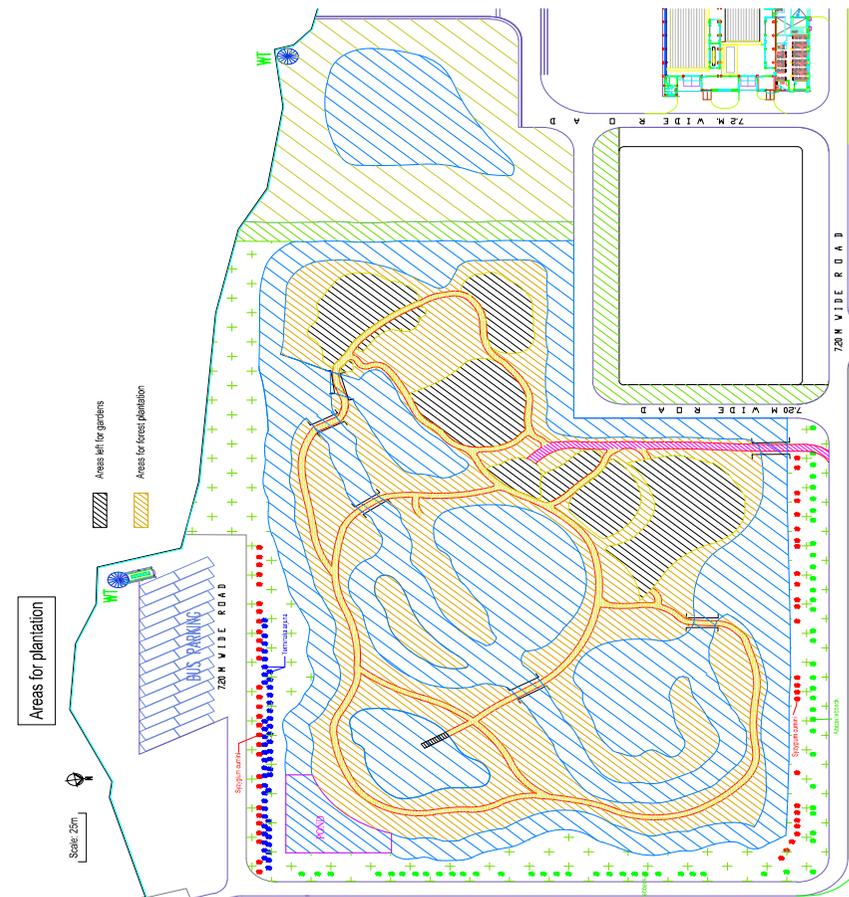
Concept Development



Challenges - Ideas Behind the Wet Land Forest



- By creating canals and ponds for 29,000 SQM and elevate the land by 1.2 to 1.5m from original land with excavated soil.
- The creation of raised land provides opportunity to plant trees and shrubs - Majority of them are of chennai/ costal region plants, which can survive slight saline conditions.
- Very minimal intervention requited to sustainability of the forest
- Part of the area will be of thematic park which educate what nature is doing for us in the areas of - Health, Pollination, Recreation, Beauty, Spiritual development.
- A tiled roof mud wall building for small gatherings.

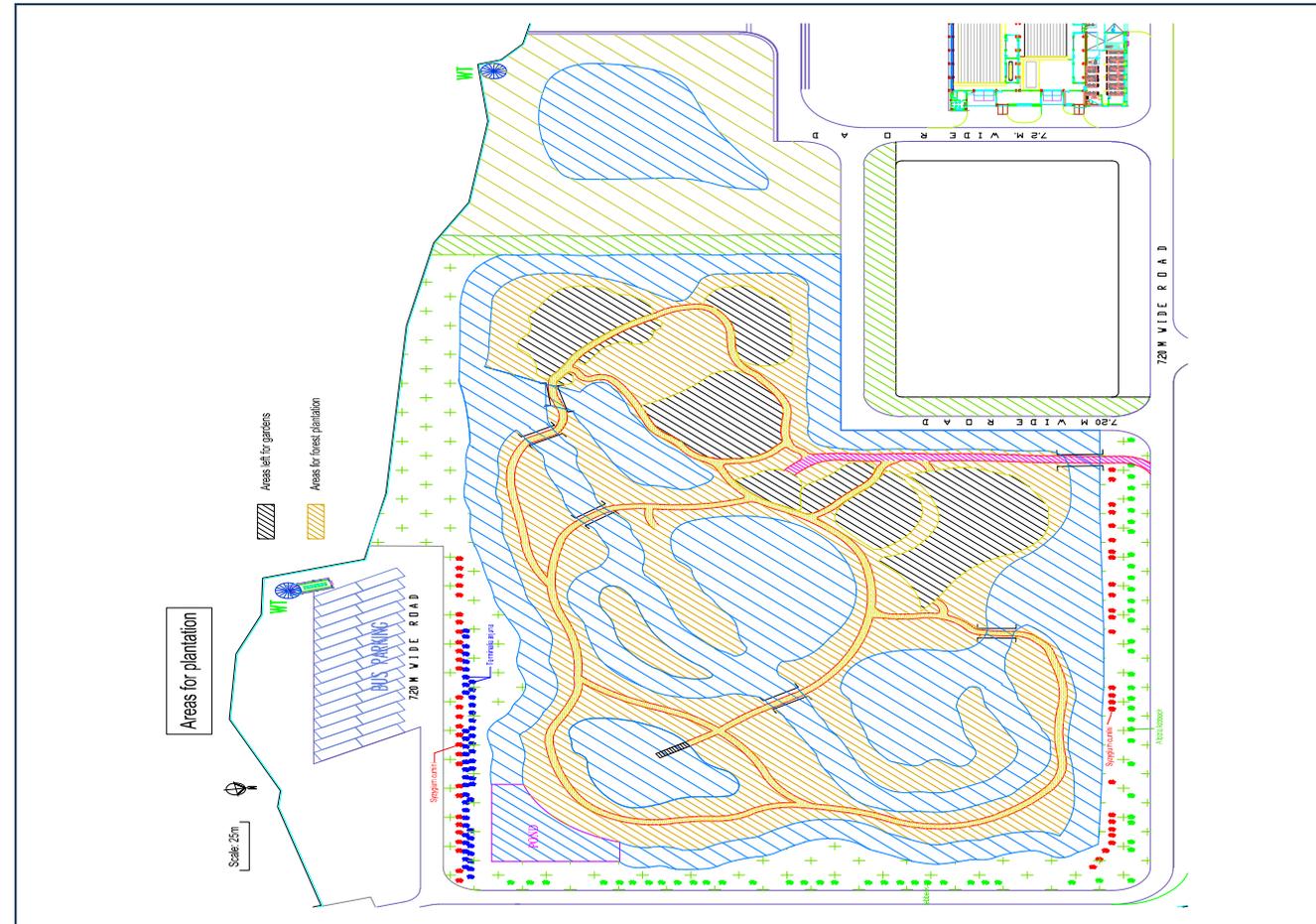


Design –Wet Land Forest



The design which emerged, and supported by AL Management was one that has worked perfectly and brought wonderful results, both in terms of growth rates as well as in terms of the biodiversity potential of the site.

To avoid the water-logging a series of channels and ponds were included in the design, of the appropriate width and area, to enable us to raise the ground level of the park by 1.5 meters, above the existing ground level which was inundated for 3 to 4 months of the year during the monsoon season.



Ideas Behind the Wet Land Forest



On the eastern side a number of thematic gardens were designed - which use native species wherever possible, and occasionally include other naturalized species.

In addition a conference center was designed to sit with the garden by the large lake

- Bamboo garden
- Flower Garden
- Japanese Garden
- Pollinator garden
- Labyrinth
- Herbal garden



Wet Land Forest –Progress



The excavation took around 3 months to complete, and it was a race against time to get the work completed before onset of monsoon.

Main challenge here was not to dig too deep, as the subsoil was more saline, we had to monitor the excavation to ensure we stopped digging when the saline soil was exposed, as this would affect both the planting areas where the soil was dumped and the saltiness of the water in the ponds.



Wet Land Forest –Progress



Wet Land Forest Plantation



The plantation was carried out during the monsoon months, a mix of red soil and compost was added in holes to ensure the plants could establish easily.

The plants were a mix of sizes, some at around 5 ft, other rare native species were only available as 1 or 2ft tall seedlings.

All the seedlings were later mulched, and water was taken from the canal for watering using a floating pump that was specifically created for the work



Completion



The growth rates for the project were much better than first expected, the forest canopy had closed, and the habitat was created. Since then, the forest has continued to strengthen and become home and habitat for many species of fauna.



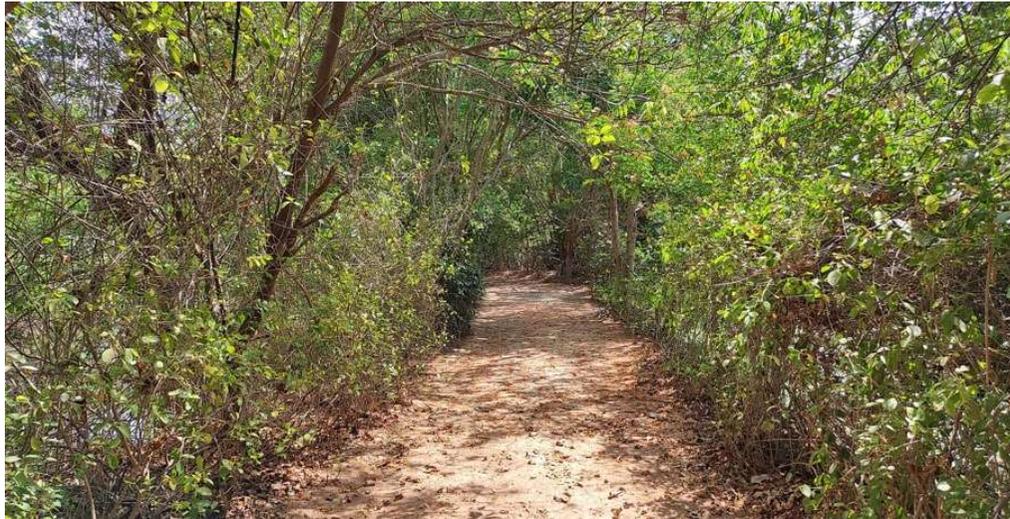
Ariel View



Water Cannel



Paths and Bridges



Space For Bio Diversity



Space for Bio diversity



Space for Bio diversity



Employee Foot print



To Enhance the Employee foot print in the forest We have created the Training and Meeting room Which is well appreciated

Air Quality Improvement



Air Quality Improvement

	Open Area	Wet Land Area	Reduction
	ug/m3	ug/m3	
SO2	14.56	5.63	61%
NO2	20.35	7.2	65%
NH3	23.7	8.6	64%
PM10	40	32	20%
PM2.5	23	18	22%
O3	21	8.616	59%

Achievement & Benefits of Wet Land Forest



Self sustained Nature park was created in our campus, with 6,500 trees of 70 types of local species with rain water harvested water body of 50000 KL to sustain trees. 10 types of birds were spotted here including peacock. Pond water Ecosystem is also flourish in this place

Diversity of habitat to find niche for various species. Water provide home for aquatic insects and water plants, which in turn provides food for fish, which in turn provide food for animals and higher-ups in the food chains such as king fisher etc

We see vibrant diversified environment emerged in the heavily polluted industrial belt of North Chennai after establishment time and stabilisation period comes to an end. Its clear that the area will become self-sustained eco-system which required little intervention from us.

- Self-sustained forest – Very little human intervention required.
- Reduction in TDS of surface water.
- Stored Rain water availability throughout the year.
- Pond water eco system established naturally.
- Become habitat for Pollinators, insects & birds.
- Pollution free Green Zone created in Manali area
- Zero External water usage –Self Sustain concept
- Leveraging the Ground water improvement
- Air quality Improvement

Industry - First Concept



Automobile Industry first Wet Land Forest with self sustained water bodies

Horizontal Deployment



Ramco Cements visited our site and
Horizontal deployment done in there Mine
Through Auroville-
Afforestation program



THANK YOU

