



Karunya INSTITUTE OF TECHNOLOGY AND SCIENCES

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

MoE, UGC & AICTE Approved

NAAC A++ Accredited

6.3.5 Plant landscapes to minimize water usage

Karunya Institute of Technology and Sciences (KITS), nestled amidst the rich biodiversity of the Western Ghats, demonstrates a strong commitment to environmental stewardship and sustainable landscaping. The campus has implemented a comprehensive water-efficient landscape design aimed at reducing water consumption, maintaining ecological balance, and supporting biodiversity. This initiative aligns with the institute's policy on Environmental Sustainability – Green Campus, Environment and Energy Conservation.

1. Native and Drought-Tolerant Species

KITS has strategically planted native and drought-tolerant tree species that are well-adapted to the local semi-arid climate, requiring minimal irrigation and maintenance. These plant species not only enhance the green cover but also contribute to soil stabilization, carbon sequestration, and microclimate regulation within the campus. Some of the key species include Neem (*Azadirachta indica*), *Pongamia pinnata*, *Polyalthia longifolia*, *Dalbergia sissoo*, *Cassia fistula*, *Bahunia purpurea*, and Rain tree (*Samanea saman*).



KITS Gardens – An Overview



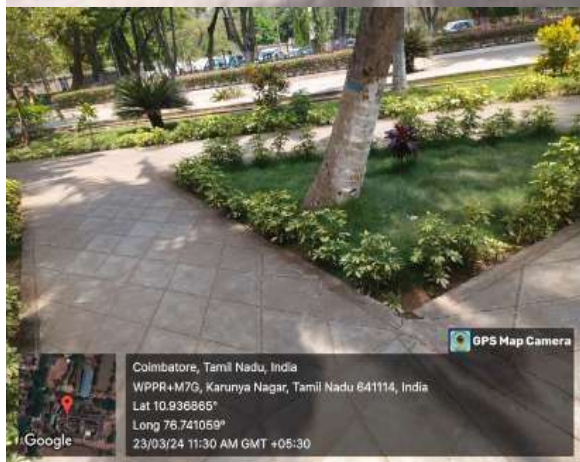
Medicinal Garden



Rose Garden



Butterfly Garden



In total, more than 1,000 trees and plants of over 65 varieties have been established across the campus landscape zones including the Academic Blocks, Student Residences, Administrative Complex, CTC, Media Centre, Parking Areas, and Staff Quarters.

2. Efficient Irrigation Systems

To optimize water use in the agricultural and landscape areas, IoT-based drip irrigation systems have been installed. These systems use soil moisture sensors to determine irrigation schedules, ensuring that plants receive only the required amount of water, thus reducing wastage and preventing nutrient leaching.

A maximum of 1800 plants/ season have been raised using grow bags in appropriate potting media with vermicompost. A maximum of four and a minimum of two to three types of vegetables from the same group have been raised per season and the entire space of the poly house was allotted accordingly as per the spacing requirement of vegetables. Besides vegetables, greens were also cultivated in polyhouse with organic inputs to cater the need of campus residents. Few exotic and endangered plants are maintained in polyhouse.



3. Rainwater Harvesting and Groundwater Recharge

KITS has constructed 33 soak pits across the campus for effective rainwater harvesting and groundwater recharge. Additionally, rooftop rainwater harvesting structures and well-designed stormwater drainage systems collect and divert runoff to recharge zones. These measures help sustain groundwater levels and minimize dependency on external water sources.



4. Permeable Surfaces and Green Infrastructure

Approximately 14% of the campus area comprises permeable pavements and open green spaces, allowing natural infiltration of rainwater into the soil. These permeable surfaces are integrated into major areas such as the Car Parking zones, Agri Block corridors, Girls Hostel yard, and the Agri Block atrium, thereby reducing surface runoff and improving groundwater recharge.



5. Landscape Maintenance and Water Conservation

Regular pruning, mulching, and weeding are carried out to ensure the health of the plants and improve water-use efficiency. The landscape maintenance team also adopts composting practices using organic waste to enrich the soil and further reduce water requirements. The agroforestry system further enhances effective water management by promoting efficient water use and improving soil moisture retention through integrated tree–crop interactions.

6. Educational and Community Engagement



Faculty and staff use the campus landscape as a living laboratory to educate students and the community about water-efficient landscaping practices and the importance of sustainability. Awareness programs, tree-planting drives, and environmental campaigns are conducted periodically under the Nature Club of KITS.

7. Impact and Sustainability

Through these initiatives, KITS has created a self-sustaining green ecosystem that conserves water, supports biodiversity, and promotes a culture of environmental responsibility. The integration of native species, smart irrigation, and recharge structures makes the campus a model for sustainable water management and eco-friendly landscaping in educational institutions.

S.No.	Name of the Tree/ Plant	Total
1.	<i>Acacia auriculiformis</i>	2

2.	<i>Albizzia</i>	5
3.	Almond	4
4.	<i>Araucaria cookie</i>	7
5.	Fase badam/ India Almond- <i>Terminalia catapa</i>	7
6.	<i>Bahunia purpurea</i>	168
7.	Banyan	3
8.	Bottle brush	5
9.	Blue gulmohar	2
10.	<i>Butea monosperma</i>	4
11.	<i>Caesalpinia pulcherima</i>	3
12.	<i>Casine paniculata</i>	1
13.	<i>Cassia fistula</i>	4
14.	<i>Cassia javanica</i>	3
15.	Casuarina	32
16.	<i>Catha edulis</i>	3
17.	Coconut tree	86
18.	Copper pod tree/ <i>Peltophorum ferruginum</i>	62
19.	<i>Dalbergia sissoo</i>	13
20.	<i>Delonix regia</i>	3
21.	Devils tree – <i>Alstonia scholaris</i>	1
22.	Embelica	1
23.	False Ashoka <i>Polyalthia pendula</i>	49
24.	Fern Tree <i>Filicium decipiens</i>	15
25.	<i>Ficus benamina</i>	2
26.	Fig	1
27.	Fish tail palm	1
28.	<i>Gmelia arborea</i>	5
29.	Golden Juniper	1
30.	Guava	3
31.	Jamun	21
32.	Jewel box tree/ <i>Sterculia foetida</i>	2
33.	Mahogany	8

34.	Mango	12
35.	Manoranjitham	1
36.	<i>Melia doobia</i>	1
37.	<i>Michelia champaka</i>	2
38.	<i>Mimusops elengi</i>	1
39.	Moringa	1
40.	Nagalinga puspam	2
41.	Neem tree	59
42.	Oil palm	4
43.	Oliva europa	6
44.	<i>Polyalthia longifolia</i>	146
45.	Pomegranate	1
46.	<i>Pongamia pinnata</i>	61
47.	<i>Phoenix sp.</i>	1
48.	Rain tree	47
49.	Red gulmohar	14
50.	Royal palm	30
51.	Sandalwood	6
52.	Sapota	1
53.	Senna	15
54.	Singapore cherry	1
55.	<i>Spathodea campanulata</i>	12
56.	Tamarind	2
57.	Teak	1
58.	<i>Thespesia populnea</i>	9
59.	Unknown	8
60.	<i>Vitex negundo</i>	1
61.	X-1	1
62.	X-2	1
63.	X-3	1
64.	X-4	1

65.	X-5	1
66.	X-6	2
67.	Ylang ylang	1



Car Parking



Agri Block Corridor







