SUSTAINABLE DEVELOPMENT GOALS

11. SUSTAINABLE CITIES AND COMMUNITIES

Support of arts and heritage

Public access to buildings

Our institution hosts more than 30 Centres of Excellence (CoEs), including Industrial Robotics, Coding Centre, Renewable Energy Centre, and advanced Mechanical Laboratories equipped with high-specification instruments. These centres are designed not only for our students but also to serve the wider community. We regularly organize training programs, workshops, and awareness events for school students and the general public, offering them the opportunity to explore and utilize our cutting-edge facilities. In addition, individuals from outside the university can approach us to receive free training and knowledge-sharing sessions, ensuring open access to quality educational resources and promoting lifelong learning beyond campus boundaries.






Provide Public Access to Libraries Including Books and Publications

The Chennai Institute of Technology offers open access to its well-equipped central library for school students and the general public. This initiative aims to promote a culture of learning and knowledge sharing beyond the campus community. The library houses a vast collection of books, journals, magazines, and digital resources covering various disciplines. By allowing access to external learners, the institution encourages educational growth, research opportunities, and reading habits among the local community. Visitors can utilize the reading spaces, reference materials, and digital facilities under the guidance of library staff. This initiative strengthens the institute's commitment to inclusive education and community development.

Provide Free Public Access to Open and Green Spaces

Chennai Institute of Technology promotes community well-being by providing free public access to its open and green spaces. Facilities such as the Cricket Ground, Open Auditorium Theatre (OAT), Volleyball Court, Park, and Parking Areas are accessible to visitors and the general public. The Cricket Ground is open to the public daily from 3:00 PM to 6:00 PM, and the institute regularly organizes sports events and recreational activities for community members. The Open Auditorium Theatre (OAT) also hosts public events, while the park area offers a peaceful environment for relaxation and outdoor gatherings.

Arts and heritage contribution

Chennai Institute of Technology actively promotes arts, culture, and heritage by organizing the Arts and Heritage Festival every year on campus. This annual celebration provides a vibrant platform for students, faculty, and local artists to showcase their talents through music, dance, theatre, and traditional performances.

Sustainable practices

Promote sustainable commuting

Chennai Institute of Technology actively promotes eco-friendly and sustainable transportation within the campus by supporting the use of Zero Emission Vehicles (ZEVs). The institution provides university-owned bicycles, electric two-wheelers, an electric passenger vehicle, and electric load-carrying vehicles for internal transport and operational purposes. These vehicles are made available free of charge to students and staff, encouraging a shift toward pollution-free mobility and reducing the campus's overall carbon footprint. Through this initiative, CIT reinforces its commitment to sustainability, clean energy adoption, and green campus development.

Zero Emission Vehicles (ZEV) (Chennai Institute of Technology, India)

Affordable housing for students

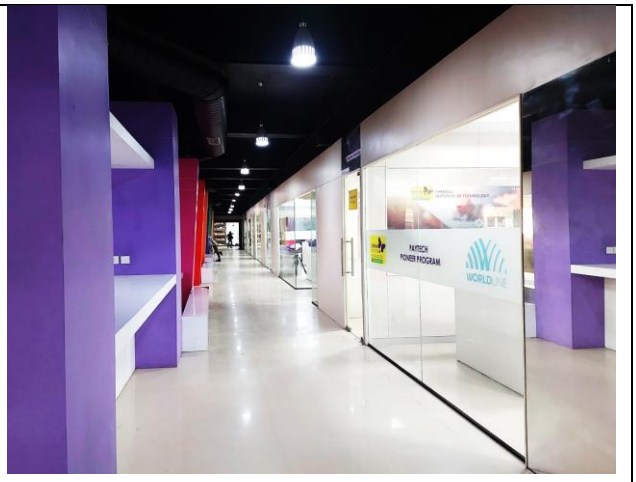
Chennai Institute of Technology (CIT) provides comfortable, well-equipped hostels for both male and female students, designed to be a “Home away from Home.” These hostels aim to offer students a safe, hygienic, and supportive environment with various amenities.

This hostel offers amenities such as individual cots, study tables, chairs, and wardrobes with locking options for personal storage. The hostel is managed by a team of maintenance staff to ensure cleanliness and order.

It provides:

- 24-hour power backup
- High-quality RO drinking water
- Solar water heaters
- A reading room
- A TV lounge for relaxation
- Multiple sports facilities including volleyball, basketball, and badminton courts
- Indoor games like carrom, table tennis, and chess
- Access to a modern gym
- 24/7 high-speed unlimited Wi-Fi

Students are allowed to bring and use laptops and mobile phones in the hostel. They can access the college's Centers of Excellence (COE) and lab facilities to support research activities. The hostels provide homestyle vegetarian and non-vegetarian meals, prepared hygienically in the hostel mess.

Smart Laundry

Hostels feature a "Smart Laundry Facility" powered by IFB, offering an energy-efficient, eco-friendly, and low-cost washing solution. This facility is accessible through a mobile app, enabling students to manage their laundry conveniently.


Pedestrian priority on campus

Pedestrian Path on Campus – Available, Safe, Convenient, and Disabled-Friendly

The campus is equipped with well-designed pedestrian pathways that ensure safety, comfort, and accessibility for all users. Separators between roads and walkways clearly distinguish vehicle

and pedestrian zones, enhancing safety. The paths are well-laid and illuminated with LED lights for visibility at night, especially near the CIT entrance and other key areas.

To support inclusivity, ramps and guiding blocks are provided for persons with physical disabilities, ensuring smooth movement across the campus. Additionally, sun-shade sheets are installed in areas without natural tree cover to protect pedestrians from direct sunlight. Certain zones are designated as pedestrian-only areas, restricting vehicle access and promoting a safe and eco-friendly walking environment throughout the campus.




1. Separator between road for vehicle and pedestrian path.
2. Ramps and guiding blocks which have suitable design for pedestrian having physical disabilities.
3. LED lights for pedestrian in night.
4. Well-Laiden pedestrian at CIT entrance.
5. Pedestrian friendly road – No vehicles allowed
6. Sheets are used to cover sunlight in the afternoon in places not shaded by trees along the pedestrian path.
7. Ramp facilities in pedestrian path for disabled people.

Planning development - new build standards

Water efficient Appliances in the campus

Sensor-based urinals are used for automated flushing, and sensor-based coolers help in reducing energy consumption. The Front Load IFB IWE-108 Washing Machine operates with low energy usage, and commercial-grade dishwashers are installed to ensure energy-efficient performance.



Net Zero Energy building

The main building has achieved Net Zero Building status by balancing its annual energy consumption with renewable energy generation.

Waste Management

Food Waste Treatment

At Chennai Institute of Technology, food waste management is carried out systematically to promote sustainability and resource recovery. Food waste generated from the hostel mess and cafeteria is collected in designated bins and carefully segregated to remove non-organic materials. The organic waste is then processed in the campus biogas plant, where it is converted into biogas used for cooking purposes. This initiative not only reduces the volume of waste sent to landfills but also supports clean energy generation and promotes a circular, eco-friendly waste management system on campus. In 2023–2024, 12.14 tonnes of food waste were processed, of which 100% (12.14 tonnes) were upcycled through the biogas plant.




Biogas Plant

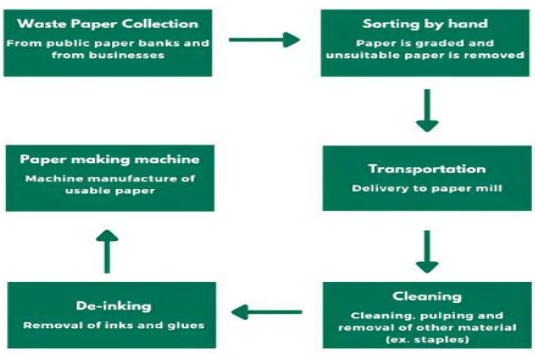
Leaf Waste Treatment

At Chennai Institute of Technology, leaf waste management is a key component of the institute's sustainability efforts. Fallen leaves and waste grass collected from planted and forested areas are properly segregated to remove plastics and other inorganic materials. The organic waste is then processed through vermicomposting in a designated area, where it is transformed into nutrient-rich organic manure. This compost is utilized to enhance soil fertility and support the growth of vegetation across the campus, creating a sustainable cycle of waste reuse and environmental care. A total of 6.825 tonnes of leaf waste were generated, and 6.651 tonnes were upcycled as compost.


Vermicomposting Unit

Paper Waste

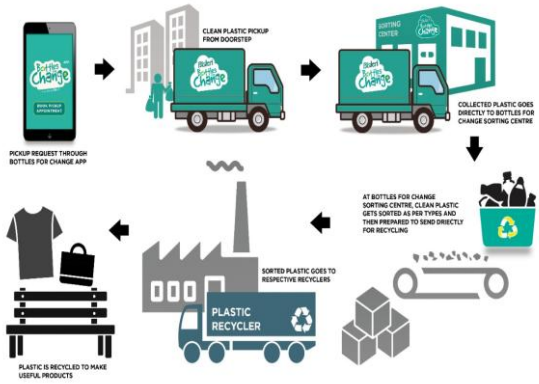
At Chennai Institute of Technology, paper waste is managed efficiently through a well-structured collection and recycling system. Waste paper is collected in designated bins across the campus, and after offline examinations, evaluated answer scripts are submitted to the exam cell and then moved to the waste storage room. The collected materials are carefully segregated to remove non-paper and inorganic waste before being stored. The institute collaborates with ITC's "Well-being Out of Waste (WOW)" initiative, through which the stored paper is collected for recycling. In exchange, new paper materials are provided, reinforcing a sustainable paper usage cycle. The institute has also received recognition from ITC WOW for its active participation in paper recycling and contribution to environmental conservation. During the reporting period, 6.7 tonnes of paper waste were generated, of which 6.424 tonnes were downcycled through the ITC WOW program, thereby contributing to the circular economy.



Paper Exchange

Plastic Waste

At Chennai Institute of Technology, plastic waste is systematically managed to promote responsible disposal and recycling. Plastic waste is collected from designated bins placed across the campus. The collected plastic is carefully segregated from other materials and stored in a designated area for proper handling. The institute collaborates with Bisleri's "Bottles for Change" initiative, under which plastic waste from the campus is collected every Thursday and sent for recycling. Through this initiative, plastic waste is sorted based on type, processed by certified recyclers, and transformed into useful products such as benches, bags, and clothing. In 2023–2024, 1.529 tonnes of soft plastic and 5.214 tonnes of hard plastic were produced, of which 1.429 tonnes and 5.168 tonnes were upcycled respectively.



Plastic Waste Treatment

E-waste Management

Electronic waste, including cables, peripherals, and outdated devices, is collected and processed through authorized recyclers. During the reporting year, 0.127 tonnes of e-waste were generated, all of which were down-cycled for material recovery.

Student Projects

EXPERIMENTAL INVESTIGATION ON GEOPOLYMER CONCRETE SLAB USING WASTE TYRE RUBBER

"Experimental investigation of geopolymer concrete using waste rubber tyre". We have casted two

geopolymer concrete slab using waste rubber tyre. The materials used in this casting process for the slab are “concrete, sand, aggregate, ground granulated blast furnace (GGBS), flyash. The mix design for the slab 1 is M20 and the mix design for the slab 2 is M25. The mix ratio for M20 grade concrete is (1: 1.75: 3) and the mix ratio for M25 grade concrete (1: 1.3: 2.3). The dimension of the geopolymer concrete slab is (500x500x100mm). Later the materials are mixed and it is poured into the slab mould, before this process. The reinforcement has been added inside the geopolymer concrete slab. 12mm rod has been used in the M20 and M25 grade concrete slab. The spacing for the reinforcement rod is about 10cm. After this process, the cover blocks are kept inside the slab to provide additional strength. Then, the slab has been completely casted and then the geopolymer concrete slab has been cured for a period of 28 days. and then, the two slabs have kept in “Universal testing machine” and compression test have been conducted in these two slabs to find the compressive strength of the geopolymer concrete slab.

FLEXURAL BEHAVIOUR OF THE REINFORCEMENT CONCRETE INCORPORATE WITH CABLE WIRE AND CULLET GLASS

This project explores the synergistic effects of incorporating cable wires and cullet glass into reinforced concrete structures to improve flexural behavior. The combination of high-tensile strength cable wires and the unique properties of cullet glass aim to enhance the structural integrity, durability, and sustainability of traditional reinforced concrete. In this project we are casting 4 beams of size 70 x 15 x 15 cm and testing it for finding its flexural behavior. The research involves a comprehensive investigation into the mechanical properties of cable reinforced concrete, assessing its ability to withstand bending loads. Additionally, the incorporation of cullet glass particles into the concrete mix aims to contribute to both the mechanical and aesthetic aspects of the structures. The methodology includes material characterization, laboratory testing, and structural analysis. Mechanical tests will assess the flexural strength, ductility, and crack resistance of the novel composite materials. Structural analysis using advanced modelling techniques will provide insights into the overall performance and behavior of the proposed system. The expected outcomes of this project include a deeper understanding of the synergies between cable wires and cullet glass in reinforced concrete, as well as the development of guidelines for practical applications in construction projects.

LANELINK – CARPOOLING APPLICATION

LaneLink is a cutting-edge web application that aims to transform daily commutes by promoting effective carpooling among users. LaneLink uses a user-friendly interface and powerful mat ching algorithms to link commuters with appropriate travel routes and timetables, promoting shared trips for a greener, more cost-effective, and less crowded transportation system. LaneLink's key features

include customizable profiles, which allow users to select preferences such as preferred departure times, route flexibility, and passenger criteria. The application's sophisticated matching mechanism uses these preferences and real-time traffic data to recommend the best carpooling arrangements, assuring convenience and dependability for all users. Furthermore, LaneLink promotes safety and security by adopting strong verification methods and offering user ratings and feedback. The platform promotes a sense of community and trust among members, encouraging more people to embrace carpooling as a sustainable transportation solution. Through these capabilities, the app enables users to make educated decisions that help to reduce carbon emissions and traffic congestion in their areas. Overall, LaneLink represents a forward-thinking response to current transportation concerns, leveraging technology to encourage shared mobility and improve urban quality of life. LaneLink, with its emphasis on convenience, safety, and sustainability, is on track to become the go-to platform for commuters looking for smarter, greener ways to travel

PHOTOGRAPHY COMMUNITY

Lensrivals is an innovative web application designed to provide photographers worldwide with a dedicated platform for participating in photography contests and showcasing their talent. Leveraging modern web technologies and a user friendly interface reminiscent of popular social media platforms, Lensrivals aims to revolutionize the way photographers engage with each other and compete for recognition and cash prizes. Key features of Lensrivals include contest participation, where photographers can upload their best shots according to contest instructions, add captions, locations, and hashtags, and engage with other participants' submissions. The platform offers a feed page where users can explore recent photo submissions, a personalized profile for managing posted clicks and tracking contest participation, and a comprehensive list of live and upcoming contests to keep users engaged. Lensrivals utilizes Firebase for backend and database management, ensuring real-time data storage and synchronization, while Clerk Authentication adds an extra layer of security to user accounts. The use of NEXT.js for frontend development and Tailwind CSS for styling ensures a sleek and responsive design, enhancing the overall user experience. Shadcn UI Components further augment the platform with visually appealing design elements. With its unique combination of social media features and contest functionalities, Lensrivals aims to foster a vibrant photography community where photographers of all skill levels can thrive. Join Lensrivals today and discover a new way to showcase your creativity, compete for prizes, and connect with like-minded individuals passionate about photography.