



Centurion
UNIVERSITY

*Shaping Lives...
Empowering Communities...*

SDG 11 | Report on Sustainable Cities and Communities

SDG 11

REPORT 2021



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I. Targets



Affordable Housing

Centurion University makes effort to provide on-campus residential accommodation for both staff and students. It has a total strength of accommodating 12000 students across its campuses. Similarly, it has different categories of staff quarters which accommodates 100 families and bachelors. The University targets to construct new facilities for both students and staffs by 2024.



Reduce, Reuse and Recycle

Centurion University strives to Reuse and Recycle waste adhering to different guidelines. In adherence to Plastic Waste Management Rules, the University recycles all of its plastic waste. It uses all throwaway plastics into infrastructure materials. The plastics are being used as an ingredient to manufacture paver blocks. Currently, University manufactures 500 paver blocks in a day and it targets to increase its capacity to 750 by 2023.



Ecofriendly

Centurion University makes effort for being eco-friendly in all aspects. It has an in-house Biodigester that transforms food waste into compost besides vermicomposting. Integrated, with the technique of vermicomposting the total amount of waste to compost transformation is yy kg. The University targets to increase it to xx kg by 2023. The premise to set this target is increasing number of students in the coming years.



Smart Agriculture

Centurion University strives to reduce factors that contribute to climate change. One such effort by the University is Polyhouses which are controlled by Internet of Things. It acknowledges the amount of water plant needs along with other parameters which prevents wastage of water. The University currently operates 3 polyhouses and targets to construct 1 by 2023.

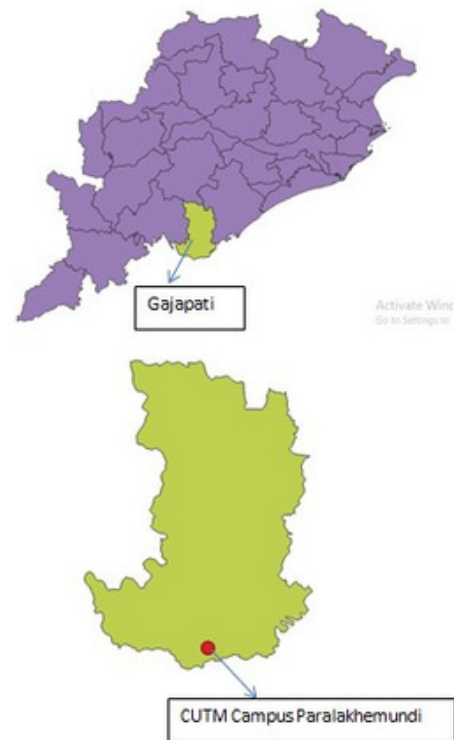


II. The Context of Centurion University

The World is now shifting paradigms as Urbanization only has no meaning having known the facts that the world's cities occupy just 3 per cent of the Earth's land, but account for 60-80 per cent of energy consumption and 75 per cent of carbon emissions. Centurion University has well understood this concept and its action has efforts towards Sustainable Urbanization. The University's first campus is located at Paralekhmundi. It is in remote geography which was hit by left wing extremism. Since the inception of the University the economic dynamics of the location has changed. More and more people have found jobs or turned into entrepreneur through the positive domino effect.

It is noteworthy that all the University campuses provide universal access to safe, inclusive and accessible, green and public spaces, in particular for women and children, older persons and persons with disabilities.

Centurion University also provide access to safe, affordable, accessible and sustainable transport systems for its students and employees. The University promotes activities which are sustainable in nature like Drip Irrigation, rain water harvesting, scientific disposal of waste, waste water management. It adheres to policy like Solid Waste Management Rules, Plastic Waste Management Rules, Basel Conventions and others.



Jagannath Padhi
Director,
Centurion University

1. Infrastructure

1.1. Affordable Housing for All

Centurion University strives to provide on-campus housing for all of its employees and students at subsidized prices. It has exclusive accommodation for international students. Having come from different climatic conditions, the University provides AC hostels. The girl's residences have facilities to cater there needs for example sanitary pad vending machines, women's rooms, sports facilities and others.



Affordable Housing



1.2. Plastic Free Campus

Centurion University commits itself towards a “No Plastic Campus”. Adhering to Plastic Waste Management Rules, all multi use plastics and PET materials are Reused by Upcycling the waste plastics like in development of infrastructure through manufacturing of pavers block.



Plastic Waste Management Rules, 2016

The Plastic Waste Management Rules, 2016 aim to:

- Increase minimum thickness of plastic carry bags from 40 to 50 microns and stipulate minimum thickness of 50 micron for plastic sheets also to facilitate collection and recycle of plastic waste
- Expand the jurisdiction of applicability from the municipal area to rural areas, because plastic has reached rural areas also
- To bring in the responsibilities of producers and generators, both in plastic waste management system and to introduce collect back system of plastic waste by the producers/brand owners, as per extended producers responsibility
- To introduce collection of plastic waste management fee through pre-registration of the producers, importers of plastic carry bags/multilayered packaging and vendors selling the same for establishing the waste management system
- To promote use of plastic waste for road construction as per Indian Road Congress guidelines or energy recovery, or waste to oil etc. for gainful utilization of waste and also address the waste disposal issue; to entrust more responsibility on waste generators, namely payment of user charge as prescribed by local authority, collection and handing over of waste by the institutional generator, event organizers.
- An eco-friendly product, which is a complete substitute of the plastic in all uses, has not been found till date. In the absence of a suitable alternative, it is impractical and undesirable to impose a blanket ban on the use of plastic all over the country. The real challenge is to improve plastic waste management systems.

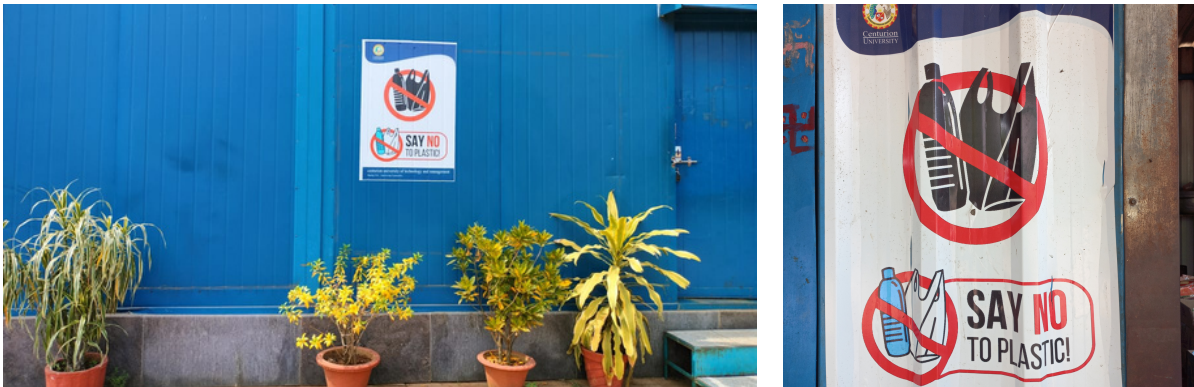




Bing eco-friendly Centurion University constantly experiments and manufactures biodegradable products like bamboo cups, bottles and cups made-up of coconut shells.



Centurion University with the mantra "Reduce, Reuse, Recycle and Upcycle" transforms the waste plastic in the campus. It uses them as one of the raw materials in the manufacturing of pavers.



Centurion University has zero tolerance for the usage of plastics in adherence to the Plastic Waste Management Rules. There are signages at all the strategic locations of the University.

2. Energy Efficient Campus

2.1. Green Energy

Centurion University strives to build up an energy efficient campus through usage of less energy to perform the same task and produce the same result. It is accentuated through regular energy audit which enables to understand the niche areas with scopes of improvements. Thereby, Centurion University relies on usage of star rated energy appliances across its campuses. The University has taken several steps towards decarbonization through energy efficient self-sustaining activities. One of such effort is a DC Solar Micro Grid of Roof Top Solar Installations. DC micro grid with centralized with centralized generation and distributed storage enables electrification of off-grid that have difficulty in accessing the electrical distribution network to meet their energy needs.

Roof top solar PV unit. It is equipped with PV cells which partially meets the electricity need of the campus it supplies electricity to the market complex of the University



Solar Street Light

The University campus is all equipped with solar lighting systems.



2.2. E-Mobility

The University Green Initiatives has multifaceted approaches, one such approach is e-mobility. It indigenously manufactures e-vehicles and does technology transfers. One of such transfer is to an entity named "Skyriders" which provides e-mobility solutions and lead by an alumnus student.



3. Increasing Water Use Efficiency

3.1. Micro Irrigation

Micro Irrigation is defined as the frequent application of small quantities of water on or below the soil surface as drops, tiny streams or miniature spray through emitters or applicators placed along a water delivery line.



Micro Irrigation



3.2. Sewage Treatment Plant

Looking towards the growing environmental pollution, the quality of water has become both public health and agriculture concern. Hence waste water needs to be decontaminated, especially domestic sewage. In the past, domestic waste water treatment was mainly confined to organic carbon removal. Recently, increasing pollution in the waste water leads to developing and implementing new treatment techniques to control nitrogen and other priority pollutants. Pollution in its broadest sense includes all changes that curtail natural utility and exert deleterious effect on life. The crisis triggered by the rapidly growing population and industrialization with the resultant degradation of the environment causes a great threat to the quality of life. Degradation of water quality is the unfavourable alteration of the physical, chemical and biological properties of water that prevents domestic, commercial, industrial, agricultural, recreational and other beneficial uses of water. Sewage and sewage effluents are the major sources of water pollution. Sewage is mainly composed of human faecal material, domestic wastes including wash-water and industrial wastes.



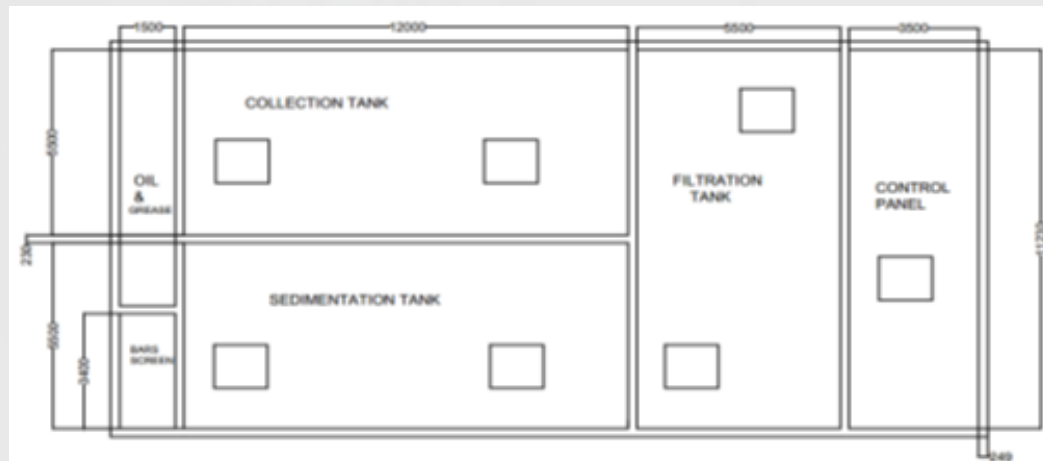
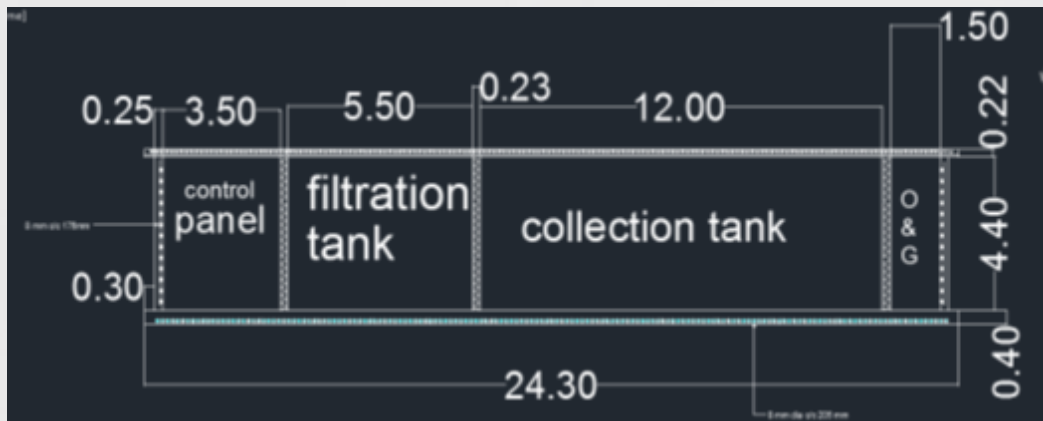
Sewage Treatment Plant is a facility designed to receive the waste from domestic, commercial and industrial sources and to remove materials that damage water quality and compromise public health and safety when discharged into water receiving systems. It includes physical, chemical, and biological processes to remove various contaminants depending on its constituents. Using advanced technology it is now possible to re-use sewage effluent for drinking water.

Plant capacity:

- Maximum daily demand = 180 lit/day
- Average water supply per day = $180 \times 1550 = 279000$ lit = 279 cubic meter hour
- Average sewage generated per day = 85% of supplied water = $0.85 \times 279 = 223$ cubic meter
- Average sewage generated per hour = $223/24 = 9.29$ cubic meter per hour
- Peak factor = 3
- Design flow capacity (maximum) = $9.29 \times 3 = 27.85$ Cubic meter per hour

Layout of STP

In House Designed and Constructed



4. Community Engagement

4.1. Community Action Learning

Community Action Learning Programme is a copyright of Centurion University where in the students of advanced semesters reaches out to the community to up-skill, aware them on the issues faced by the community. It is an act of making social impact and empowering community.



5. Smart Agricultural

5.1. Polyhouse

Centurion University makes effort for being Carbon neutral and water efficient. It has built a IoT integrated Polyhouse which monitor the vital parameters like humidity, water requirement and others. The sprinkler system sprinkles metered quantity of water thereby efficiently utilizing it.

