

Integrating local biodiversity in campus planning and development

Centurion University systematically integrates local biodiversity into its planning, development, and infrastructure expansion processes. The University follows a “*Preserve–Enhance–Monitor*” biodiversity framework to ensure that campus development aligns with ecological sustainability and conservation of native ecosystems.

1. Biodiversity Planning Before Construction

- Environmental and Biodiversity Assessments are carried out prior to major construction activities.
- At the Paralakhemundi campus, over 70% of the existing green cover is protected during new development projects.
- In the 2022–24 expansion phase, 92 mature trees were preserved in their original locations and 31 trees were scientifically transplanted to designated green zones.

2. Conservation of Native Flora and Fauna

- Across all campuses, the University has more than 15,000+ trees, most of which are native or endemic species such as neem, mango, teak, jackfruit, bamboo, peepal, and indigenous medicinal plants.
- Establishment of Biodiversity Habitat Zones on campus:
 - 5-acre Natural Orchard Zone at Paralakhemundi
 - 2-acre Butterfly Garden with 40+ host and nectar plant species
 - Herbal & Medicinal Garden with *over 150 plant species* used in Ayurveda and rural healthcare training

3. Green Campus Development & Ecological Landscaping

- New buildings allocate minimum 30% of surrounding area to green and open spaces.
- Micro forests developed on 0.5 acres (approx. 1500 saplings) across campuses to accelerate dense green cover creation.
- More than 1,000+ fruit-bearing trees planted to support local bird and insect populations.

4. Eco-Friendly & Biodiversity-Sensitive Construction Practices

- Rainwater harvesting structures integrated into all new buildings (capacity: 12–14 lakh litres annually).
- Zero-cement interlocking pathways used in green zones to protect soil ecology and groundwater recharge.

- Solar lighting installed along bio-sensitive walking trails to minimize light disturbance to nocturnal species.
- Use of *porous pavements, green roofs, and energy-efficient materials* to reduce carbon and heat island effect.

5. Campus as a Biodiversity Learning Ecosystem

- The campuses hosts bird species, butterfly species, and insect pollinator species and many more.
- Apiculture Units maintained to support pollination, with 50+ bee colonies, enhancing campus biodiversity and agricultural productivity in nearby fields.
- Student-led biodiversity clubs conduct quarterly biodiversity mapping and documentation.

The University aims to increase green cover by 10% each year through structured plantation drives and ecosystem restoration projects.

Table 1: Green building strategy in Campus

Aspect	Centurion University's Sustainable Building Practices	Sustainability Impact
Topography Alignment	Preserves natural topography; minimizes soil erosion and ecological disruption	✔ Supports biodiversity and natural water cycles
Material Usage	Prioritizes local, recycled, and eco-certified materials	✔ Reduces carbon footprint and promotes circular economy
Energy Efficiency	Uses passive solar design, high-performance insulation, efficient HVAC	✔ Lower operational energy use; reduces emissions
Water Management	Low-flow fixtures, rainwater harvesting, greywater recycling	✔ Conserves water resources and supports SDG 6 & 15
Green Certification	Aims for LEED or GRIHA green building certification	✔ Independent verification of sustainability performance
Educational Integration	Used as live labs for students and research	✔ Enhances sustainability education and awareness
Community Involvement	Workshops and participatory design with staff and students	✔ Builds environmental stewardship and community culture

Table 2: Goals and targets of green building in Centurion University

Feature	Metric/Specification	Target/Goal
Energy Use Intensity (EUI)	kWh/m ² /year	30% lower than conventional campus buildings
Water Consumption	Liters per capita per day	< 80 LPCD (Liters per capita/day) through water-saving tech

Recycled/Local Material Use	% of total materials	≥ 50% locally sourced or recycled
Green Certification Target	LEED / GRIHA certification level	Minimum LEED Silver or GRIHA 3-star for new buildings
Community Participation	No. of workshops/seminars annually	≥ 4 per year
Student Integration	Courses/modules with green building topics	Integrated in Architecture, Civil Engineering, and Environmental Studies

Conclusion

Centurion University adopts a biodiversity-centric approach to campus development, embedding ecological conservation into every stage, from planning and construction to landscaping and post-development monitoring. By safeguarding natural habitats, expanding green cover, and systematically assessing biodiversity health, the University ensures sustainable growth that both protects and enriches the surrounding ecosystem.