

Case Study

AMITY NOIDA UNIVERSITY

STP PROJECT

Delivering a 1.2 MLD Advanced Sewage Treatment Plant
Powered by MBR Technology

Project by
Enhanced Wapp Systems India Pvt. Ltd.

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PROJECT OVERVIEW

Smart Wastewater Management for a Modern Campus

Enhanced Wapp Systems designed, supplied, installed, and commissioned a
1.2 MLD Sewage Treatment Plant at Amity Noida University.

The project uses **Membrane Bio-Reactor (MBR) technology** to deliver efficient wastewater treatment, recycling, and environmental compliance through a fully integrated automated system.

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CLIENT & PROJECT INFORMATION

Project Name

Amity Noida University STP Project

Project Type

Institutional Infrastructure

Plant Capacity

1.2 MLD

Technology

Membrane Bio-Reactor (MBR)

Execution Type

Turnkey (Design to Commissioning)

Operation Mode

Continuous 24x7

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PROJECT OBJECTIVES

What the University Needed

- ⌂ Efficient treatment of large campus sewage volumes
- ⌂ High-quality treated water for reuse
- ⌂ Reduced freshwater dependency
- ⌂ Environmental compliance
- ⌂ Automated operations with minimal manual intervention
- ⌂ Seamless integration within an active university campus

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SCOPE OF WORK

Turnkey Project Delivery

Engineering & Design

- ◀ Process design & hydraulic calculations
- ◀ Equipment sizing and layout design

Supply & Installation

- ◀ Mechanical equipment
- ◀ Electrical & instrumentation systems
- ◀ Automation integration

Commissioning

- ◀ Performance testing
- ◀ Process stabilization
- ◀ Operator training

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TECHNOLOGY USED

Membrane Bio-Reactor (MBR)

The plant combines biological treatment with membrane filtration to deliver superior water quality.

Membrane Bio-Reactor (MBR)

- ⌂ Higher treatment efficiency
- ⌂ Compact footprint
- ⌂ Stable performance under load variation
- ⌂ Reduced sludge generation
- ⌂ Excellent pathogen removal

Ideal for large institutional campuses with water reuse needs.

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TREATMENT PROCESS

STP Process Flow

- ◀ Inlet Screening & Solid Removal
- ◀ Oil & Grease Separation
- ◀ Equalization Tank
- ◀ Biological Treatment (Anoxic + Aeration)
- ◀ MBR Filtration
- ◀ UV Disinfection
- ◀ Treated Water Storage & Reuse
- ◀ Sludge Dewatering & Disposal

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KEY TECHNICAL SYSTEMS

Pre-Treatment System

- ◀ Mechanical screening
- ◀ Oil & grease removal
- ◀ Sewage transfer pumps
- ◀ Flow equalization system

Purpose: Protect downstream equipment and stabilize inflow.

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BIOLOGICAL TREATMENT

Biological Processing Units

Anoxic Zone

- ◀ Nutrient removal through denitrification
- ◀ Controlled mixing

Aeration Zone

- ◀ Fine bubble diffusers
- ◀ Energy-efficient air blowers
- ◀ Enhanced biological degradation

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TECHNOLOGY USED

Advanced Membrane Filtration

- ◀ Submerged membrane modules
- ◀ Continuous filtration operation
- ◀ Air scouring cleaning system
- ◀ Stable turbidity control

Result: Consistent high-quality treated water.

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AUTOMATION & SLUDGE MANAGEMENT

Smart Plant Operations

Automation

- ⌂ PLC-based centralized control
- ⌂ Real-time monitoring
- ⌂ Operator-friendly interface

Sludge Management

- ⌂ Sludge recirculation
- ⌂ Mechanical dewatering unit
- ⌂ Polymer dosing system

Outcome: Reliable and efficient plant operation.

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ENGINEERING CHALLENGES

Project Execution Challenges

- ◀ Installation within an active university campus
- ◀ Continuous sewage inflow during construction
- ◀ Space optimization requirements
- ◀ Maintaining uninterrupted campus activities

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OUR APPROACH

Smart Engineering Solutions

Automation

- ◀ Modular system integration
- ◀ Phased installation planning
- ◀ Compact equipment layout
- ◀ Automation-driven operational stability

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PERFORMANCE OUTCOMES

Plant Performance

- ◀ Installation within an active university campus
- ◀ Continuous sewage inflow during construction
- ◀ Space optimization requirements
- ◀ Maintaining uninterrupted campus activities

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SUSTAINABILITY IMPACT

Environmental Benefits

- ◀ Reduced freshwater consumption through reuse
- ◀ Improved wastewater resource recovery
- ◀ Energy-efficient treatment process
- ◀ Environmentally responsible campus infrastructure

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