

6.3.1 a - Process in place to treat waste water (Water usage and care)

Water usage and care

B.S.Abdur Rahman Crescent Institute of Science and Technology takes sufficient measures to treat the wastewater generated within the premises and it ensures that the treated water is reused within the campus. The Institute has established suitable and sustainable sewage treatment plants with the design features to completely treat the wastewater generated in the Institute. The details of the treatment plant and the process of wastewater management are given below

- 2 nos. of Sewage treatment plants of 250KLD capacity are installed in the campus

Location	Capacity	Remarks
College campus	250KLD	Commissioned in 2003 as a 150KLD plant. Revamped and capacity increased to 250KLD in 2015
Men's Hostel	250KLD	Commissioned in 2014

- The sewage generated in the Institute is generally characterized by the presence of organic, inorganic and suspended solids.
- The chain of treatment is aimed to remove such pollutants from the wastewater so that it can be effectively reused.
- The treatment system consists of preliminary treatment system followed by the primary and secondary treatment process.
- Bar Screens are used in the treatment plant to remove materials like plastics and other floating objects.
- The grit chambers are used to remove sand and silts from the wastewater.
- The primary sedimentation tank helps in the removal of the suspended solids.
- The biological treatment system is the secondary treatment process used in the removal of organics from the wastewater

- The suspended solids are removed using the primary sedimentation tank and after this the wastewater is subjected to biological treatment to remove the organic content from the waste.
- The secondary treatment process is incorporated with ECO-BIO BLOCK so as to increase the efficiency of the treatment system.
- The Eco-Bio Bricks helps in the attachment of bacteria in the treatment system and helps in the better removal of organic content from the wastewater.
- This attached system will also help the treatment system to handle shock loadings if there is an increase in the organic loading rate in the biological treatment system.
- The sewage treatment plant is working on the principle of attached growth aerobic system (Eco-Bio Block) followed by sand filter and carbon filter.
- The carbon and sand filter ensures that any amount of organics that is left in the wastewater is suitably adsorbed from the wastewater and it is stored in the collection tank.
- The entire Sewage Treatment Plant is periodically subjected to maintenance regularly.
- The working of all the pumps and valves are checked periodically to ensure the smooth functioning of the sewage treatment plant.
- The treated water is used for landscaping and toilet flushing purpose.
- This helps the university to reduce its dependency of fresh water from wells for gardening.
- The physical, chemical and biological characteristics of the treated water are tested to ensure the efficiency of the treatment systems.
- Some of the important parameters checked include pH, solids, Chemical oxygen demand, Biochemical oxygen demand, Nitrates, chlorides etc.
- The treated wastewater is checked periodically to ensure its quality so that it can be effectively reused for gardening and as well for the toilet flushing.



WASTEWATER TREATMENT PLANT INSTALLED IN THE CAMPUS

DETAILS OF WASTEWATER GENERATION AND RECYCLING

The Institute through its continuous treatment and monitoring, could achieve 90% of water reutilization

S.No	Location	Total wastewater collected	Water recycled	% of water reutilized
1	College campus	250 KL	220KL	90
2	Men's Hostel	250 KL	220KL	90

ADVANCED TECHNOLOGY FOR SEWAGE TREATMENT

The Institute has also established MIRA CARBON SEWAGE TREATMENT PLANT of 2 m³ capacity and VERMI FILTRATION TREATMENT UNIT in association with M/S.Kanyo Group of Companies to treat the wastewater generated from the Institute.



Mira carbon sewage treatment plant & Vermi flitration treatment unit