MARIAN COLLEGE KUTTIKKANAM

(AUTONOMOUS)

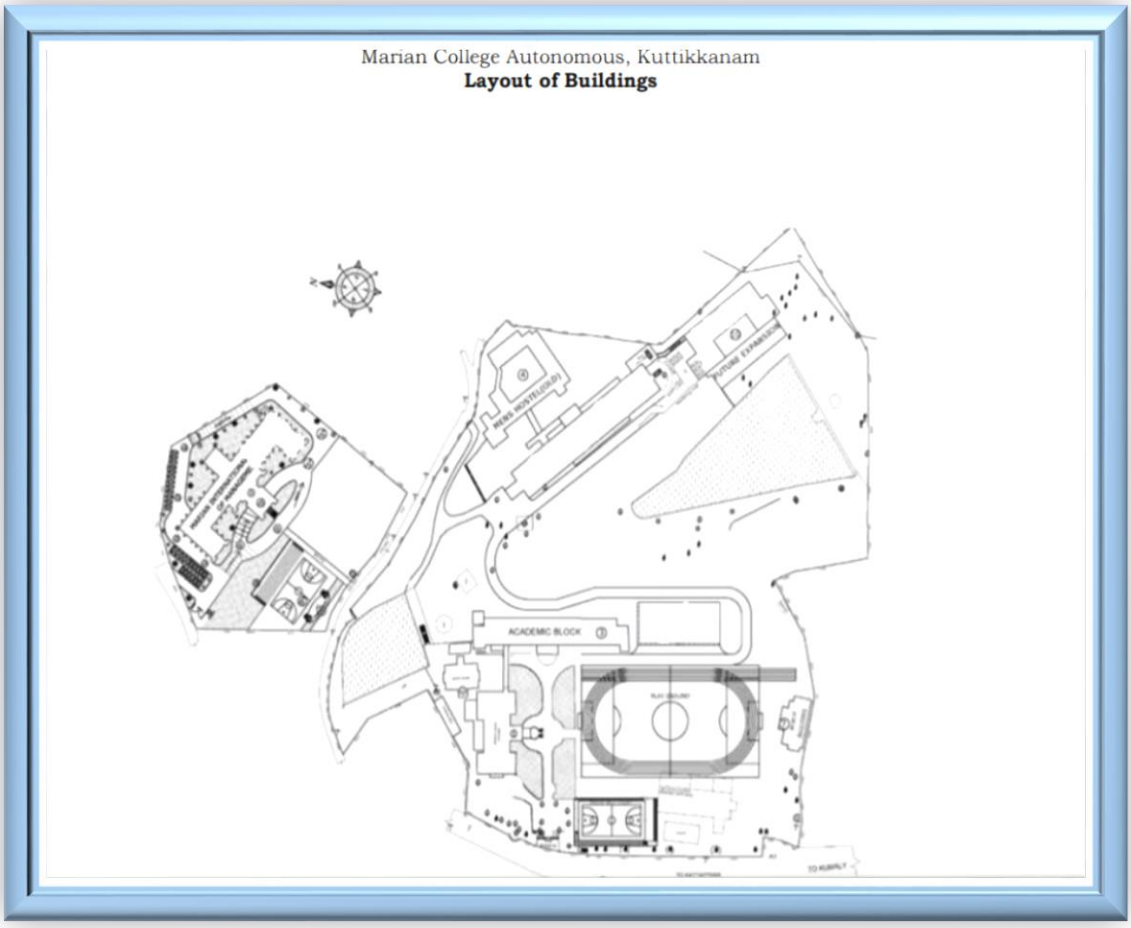
GREEN CAMPUS INITIATIVES

Submitted to

THE NATIONAL ASSESSMENT AND ACCREDITATION COUNCIL (NAAC)

FOURTH CYCLE OF ASSESSMENT

Marian College Kuttikkanam (Autonomous) has a lush green campus with a salubrious ambience. We have planted plenty of trees like pine, jack fruit, mango tree, bamboo, avocado, guava and other fruit bearing plants all over the campus and on the banks of the reservoirs. The surroundings of the buildings are covered with grass lawns which also reduce water loss due to evaporation. The campus also has a variety of flowering plants, a herbal garden and vegetable garden. All of them are developed with the participation of students and staff of the College. We have employed three garden staff for watering and upkeep of the plants.



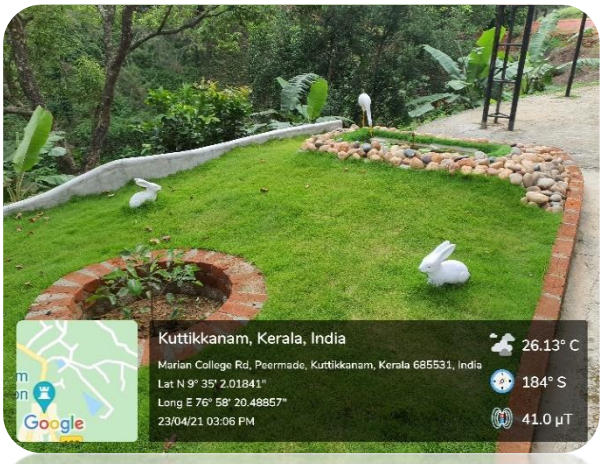
Marian manages meticulously all types of waste by efficient sorting and treatment mechanisms installed on campus and with strict adherence to the green protocol. A green audit was conducted in the College in 2017 (An environment and Green audit is in progress) and based on its report a green protocol had been formulated for Marian campus. Marian policy is to produce less waste and reduce waste generation through recycling and reuse. Reduced usage of paper using digital platforms for communication and e- filing system is encouraged in the office. Printouts are discouraged except in unavoidable circumstances. A public address system is installed for general communications. Paper wastes are collected and stacked in designated places from where it is disposed through vendors. The college has pedestrian friendly pathways. The pathways are interconnected with buildings in the college. Marian has restricted entry of vehicles inside the campus. Incinerator is used for the proper disposal of waste generated from the campus. Use of plastic is strictly prohibited on Marian campus. Adequate number of support staff is employed for the collection, segregation and disposal of waste on campus and the same is done without compromising the sanitation and hygiene protocols. Marian is committed to best practices in reducing and managing wastes effectively and systematically.

Solid waste is segregated at source and for that a large number of waste bins are provided on campus. Plastic waste and paper waste are sold out to vendors or incinerated. Girls' toilets are provided with napkin vending machines and waste bins are cleared on a daily basis by hygiene staff. Liquid waste on campus comprises mainly of the waste water from the canteens, cafeteria, toilets, laboratories etc. For treatment of waste water, a sewage treatment plant (STP) with a capacity of treating 50000 litres/ day is installed on campus. It works in an eco friendly and energy efficient manner. The treated water is used for gardening, toilet flushing, construction purposes, etc. Waste water from the laboratories are disposed properly by flowing it to safely built pits for percolating. Exhaust fans are fixed in the labs to expel hazardous vapours, if any, produced there. In the context of the pandemic Covid- 19, a great number of masks are deposited in bins as bio- medical waste and they are removed and are incinerated immediately. Electronic devices that are beyond repair are collected systematically and sold out to vendors on an annual basis. These include monitors, CPU, printers and other peripherals. We also adopt the policy of buy back with the suppliers through which a lot of old electronic equipment are exchanged. Computers with obsolete configuration are donated to the schoolchildren of the

surrounding community. Bio- degradable waste is also used for vermi-composting and the organic manure produced from it is used for farming and horticulture. No radio- active waste is produced on Marian campus.

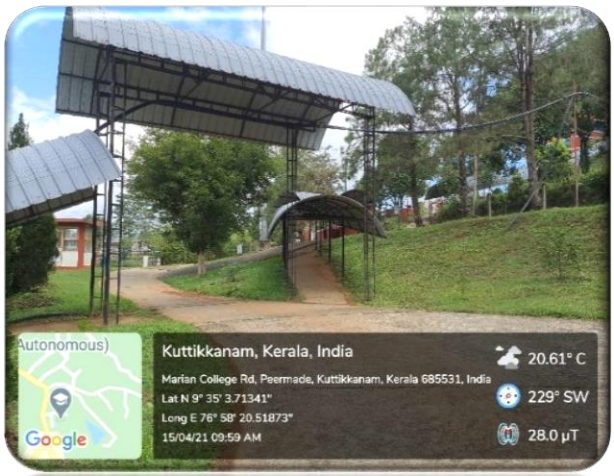
Green Campus

Garden

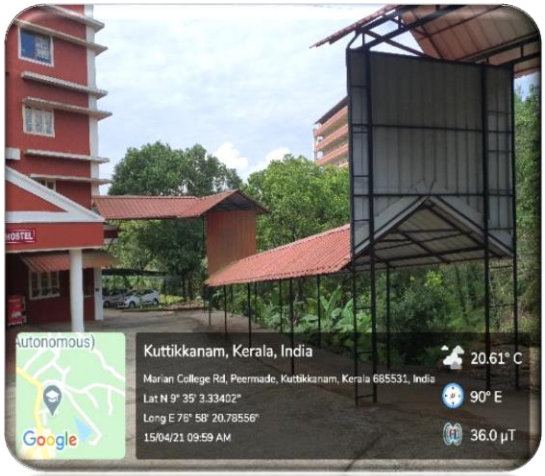


Garden ii

Path to Ladies Hostel



Pedestrian friendly pathways



Pedestrian friendly pathways

Green House

Incinerator

Vermicomposting

Future Green Initiatives in Plan

Pico Hydro Power with Pumped Storage Technology

During 2018, the Pico Hydro (less than 10 kW) proposal site was inspected by the Head of Small Hydro Power Division at Energy Management Centre (EMC), Kerala and College raised a request for subsidy for the Pico unit of 5 kW. There are already two reservoirs in the campus at sufficient height difference and so the Pumped Storage activity can be done during day-time, using a separate dedicated Solar PV system. The pumped water will be stored in the upper reservoir during day time, to be used for power generation during evening and night hours to power the high mast lighting system in the campus. That is the proposal. The power required is 5 kW. The system will be a demo- project that will educate students, parents and the general public on the potential for using hydro sources in multi-utility mode and enhance the benefits to society.

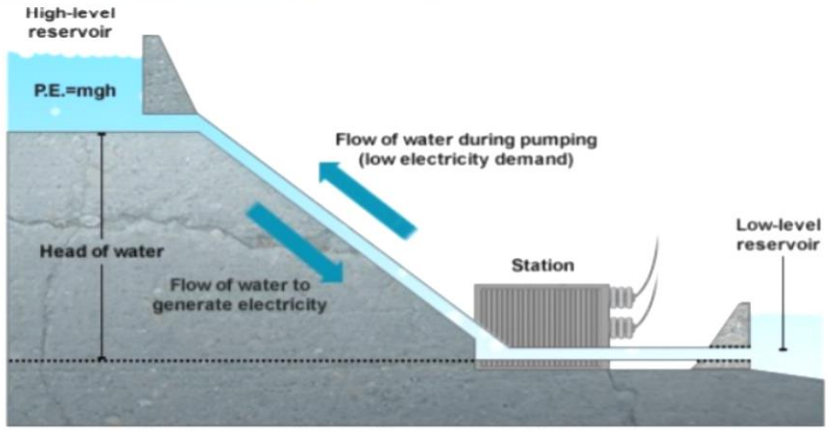
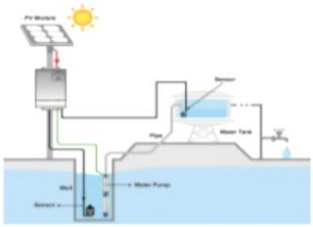
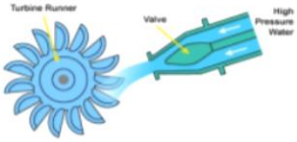


Fig. 9: Micro Hydro Power Unit Concept Diagram



Solar Pumping System
Fig. 10 a,b,c



Pump As Turbine
(Two way PAT)

High Mast Lamps
(Area lighting)

Proposed Hydro Electric Project in the Marian Campus