

HiTech Associates

Enviro Engineers & Consultant

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Proprietor

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CHARTERED ENGINEER (IEI)REG :NO AM1708298

ECI INDIA PE REG NO :-PE/00103/16

MLPA PROFESSIONAL REGISTRATION CERTIFICATE : CE.021/201

DATE: 03.02.2023

CERTIFICATE FOR WATER MANAGEMENT SYSTEM 2022-2023

Sourashtra College has successfully implemented a Kitchen Waste water Management System and Water Permeable Pedestrian Pathway Report as described in this report. The system has been designed and installed to collect, treat, and reuse Kitchen waste water , Rainwater, reducing storm water runoff and replenishing groundwater resources.

The report has been prepared based on the data and information collected during the project. The system has been inspected and verified to meet the required standards and guidelines.



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KITCHEN WASTEWATER UTILISATION REPORT 2022-2023

College Name: Sourashtra College

Location: Pasumalai Madurai

SYSTEM DESCRIPTION:

A kitchen wastewater management system has been implemented at Sourashtra College to treat and reuse wastewater generated from the college canteen and Hostel kitchen. The system consists of:

1. Grease Trap: Captures grease and food particles from kitchen wastewater.
2. Sedimentation Tank: Removes suspended solids and contaminants.
3. Filtration Unit: Treats wastewater to remove impurities and contaminants.
4. Storage Tank: Stores treated wastewater for garden use.

SYSTEM BENEFITS:

1. Water Conservation: Reduces potable water demand for gardening.
2. Wastewater Management: Treats and reuses kitchen wastewater, reducing environmental pollution.
3. Nutrient-Rich Water: Provides nutrient-rich water for gardening, promoting healthy plant growth.

GARDEN USE:

Treated wastewater is used for gardening purposes, including:

1. Irrigation: Supplements potable water for irrigation.
2. Fertilization: Provides essential nutrients for plant growth.
3. Cost Saving - Get Organic Greens and vegetables from Garden.

Recommendations:

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1. Regular Maintenance: Clean and inspect the system regularly.
2. Water Quality Testing: Regularly test treated wastewater to ensure safety and efficacy.
3. System Up gradation: Consider upgrading the system to improve efficiency and capacity.

CONCLUSION:

The kitchen wastewater management system at Sourashtra College effectively treats and reuses wastewater, promoting water conservation and sustainable gardening practices. With proper maintenance and monitoring, this system can continue to provide benefits for the college and environment.



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WATER PERMEABLE PEDESTRIAN PATHWAY REPORT 2022-2023

College Name: Saurashtra College

PROJECT DESCRIPTION:

A pedestrian pathway has been constructed using paver blocks on the college road, serving dual purposes:

1. Rainwater Harvesting: Channelizing rainwater into the surrounding soil, reducing stormwater runoff and replenishing groundwater.
2. Pedestrian Pathway: Providing a safe and accessible walkway for students, staff, and visitors.

PROJECT BENEFITS:

1. Rainwater Management: Reduces storm water runoff, preventing erosion and flooding.
2. Groundwater Recharge: Replenishes groundwater aquifers, improving water table levels.
3. Safety and Accessibility: Provides a stable and even surface for pedestrians, ensuring safety and ease of movement.

PROJECT FEATURES:

1. Paver Blocks: Permeable paver blocks allow rainwater to percolate into the soil.
2. Channelized Pathway: The pathway is designed to channelize rainwater into the surrounding soil.
3. Maintenance-Friendly: The paver block pathway is easy to maintain and clean.

RECOMMENDATIONS:

1. Regular Maintenance: Clean and inspect the pathway regularly to ensure optimal performance.
2. Vegetation Management: Plant vegetation alongside the pathway to enhance aesthetics and aid in rainwater absorption.
3. Expansion and Up gradation: Consider expanding the pathway to cover more areas and upgrading materials as needed.

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CONCLUSION:

The paver block pathway at Sourashtra College effectively manages rainwater while providing a safe and accessible walkway for pedestrians. With proper maintenance and monitoring, this project can continue to provide benefits for the college community and environment.



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DATE: 24.01.2022

CERTIFICATE FOR RAIN WATER DRAIN CHANNEL 2021-2022

This is to certify that The report titled "Rainwater Rain Water Drain Channel Report" is a true and accurate representation of the project executed at Sourashtra College. The report has been prepared based on the data and information collected during the project.



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RAINWATER MANAGEMENT SYSTEM REPORT 2021-2022

College Name: Sourashtra College

Location : Backside of Fitness Centre

SYSTEM DESCRIPTION:

A rainwater management system has been implemented at Sourashtra College to effectively utilize rainwater and prevent erosion.

The system consists of

1. Channel: A dug channel to direct rainwater from the top of the hill to a designated area.

2. Infiltration Zone: The channel drains the rainwater into the soil, allowing it to infiltrate and recharge groundwater.

OBJECTIVES:

1. Erosion Control: Prevent soil erosion and landslides due to heavy rainfall.

2. Groundwater Recharge: Replenish groundwater aquifers, improving water table levels.

3. Stormwater Management: Reduce stormwater runoff and prevent flooding.

SYSTEM BENEFITS:

1. Reduced Erosion: Minimizes soil loss and prevents landslides.

2. Improved Groundwater Recharge: Increases groundwater availability for future use.

3. Enhanced Stormwater Management: Reduces stormwater runoff, preventing flooding and damage.

Recommendations:

1. Regular Maintenance: Clean and inspect the channel and infiltration zone regularly.

2. Monitoring and Testing: Regularly test water quality and monitor system performance.

3. Expansion and Up gradation: Consider expanding the system to cover more areas and upgrading to improve efficiency.

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CONCLUSION:

The rainwater management system at Sourashtra College effectively utilizes rainwater, prevents erosion, and recharges groundwater. With proper maintenance and monitoring, this system can continue to provide benefits for the college and surrounding environment.



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DATE: 18.02.2021

CERTIFICATE GROUND WATER RECHARGE PIT 2020 - 2021

CERTIFICATION STATEMENT:

A recharge pit for rainwater harvesting has been successfully installed and completed at the Both Entrance Side of Sourashtra College. The pit is designed to collect, treat, and recharge rainwater into the groundwater aquifer in to near by well , reducing storm water runoff and replenishing groundwater resources.

CERTIFICATION CRITERIA:

- System design and installation meet local regulations and guidelines
- System is properly maintained and inspected regularly
- Water quality testing is conducted regularly to ensure safety and efficacy

Validity:

This certificate is valid for a period of 2 years from the date of issue.



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RAIN WATER HARVESTING 2020-2021

Place :- Sourashtra College ,Madurai .

Objective of Rain water harvesting:-

Major objectives and advantages of rainwater harvesting are to meet the increasing demands of water. To supplement groundwater supplies during lean seasons. To raise the water table by recharging groundwater.

Need of Ground water recharge pit near Main Entrance :-

The Topography of Sourashtra college is hilly Terrain. The entrance portion is nearly 320 metre Road connecting with Vilachery Main Road. During rainy time heavy water accumulates at entrance and give huge disturbance for entry. At the same time, we have collected rainwater to increase ground water. So, one Ground water recharge pit is provided near the entrance. It is useful for collection of Rain water, control storm water and at the same time recharge near by well at entrance area.

Methodology :-

The Sourashtra college soil is red soil and it observe water and drain quickly . With in these conditions a pit about 3m x 3m x3m was excavated and filled with boulders of various sizes. By this well near is get recharging as well as storm water accumulation also prevented.

Conclusion :-

This Rain water pit is useful for Ground water recharge as well as free flow of passage for students ,Staffs and avoid many problems including mosquito breeding .

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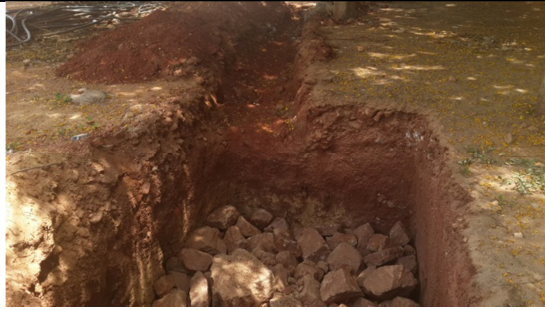
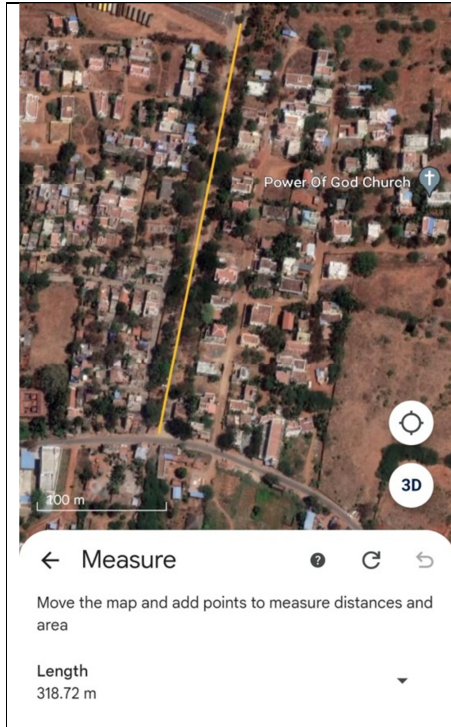
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DATE: 18.01.2020

CERTIFICATE FOR RO WASTE WATER UTILISATION 2019 - 2020

Certification Statement:

This is to certify that Sourashtra College has implemented an RO reject water management system that meets the required standards and guidelines. The system has been designed and installed to effectively manage and dispose of RO reject water, preventing environmental pollution and ensuring sustainable water management practices.

Certification Criteria:

- System design and installation meet local regulations and guidelines
- System is properly maintained and inspected regularly
- Water quality testing is conducted regularly to ensure safety and efficacy

Validity:

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WASTE WATER UTILIZATION 2019-2020

College Name: Sourashtra College Pasumalai Madurai 625004

RO REJECT WATER.

On average, an RO water purifier wastes approximately 3 litres for every 1 litre of purified water. Normally Reject water contains high concentration of inorganic salts, anti-scale additives, barium, silica, sulphate, calcium chloride and sodium etc. High TDS causes scaling due to the high concentration of calcium carbonate (CaCO₃), calcium sulphate (CaSO₄) and barium sulphate (BaSO₄). Some of these dissolved salts useful for plants.

Due to High TDS in RO reject water, it is not recommended to use RO wastewater in garden. But if TDS is not so high at the reject side of the RO system, then it can be used to watering the plants in garden. Or some tap water can be mixed to dilute the reject water to use this water in garden

RO in Campus :-

The Sourashtra college is at present have 3 RO units of 750 litres capacity. It gives purified water for nearly 1500 students and 200 Teaching staffs /Non - Teaching staffs .

The requirement of water per day is $1700 \times 3 \text{ lts} = 5400 \text{ litres / day}$

By this calculation average calculation for reject water is $5400 \times 3 = 16200 \text{ litres / per day}$

This reject is less in holiday period .

Present usage of RO Reject water :-

The RO Reject is used for Gardening

Recommendations: -

1. Implement wastewater reuse systems to utilize 100% of the generated wastewater.
2. Install water-efficient appliances and fixtures to reduce RO water demand.

3. Monitor and optimize RO plant performance to minimize wastewater generation.
4. Educate and train staff and students on water conservation and wastewater management practices.
5. Regularly test and analyze water quality to ensure safety and compliance with regulations.

CONCLUSIONS :-

Due to various Environment impact the Ground water is getting contaminated . It is a College management responsibility to provide good and Safe Drinking water as per BIS (IS_10500 and revised module IS 10500:2012) . We can frequently test the Raw water , RO water , Reject water and do needful as per expert team advices .



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DATE: 09.02.2019

CERTIFICATE FOR RAINWATER HARVESTING 2018 - 2019

This is to certify that Sourashtra College has implemented a Rainwater harvesting system that meets the required standards and guidelines. The system has been designed and installed to collect, filter, and infiltrate rainwater into the groundwater aquifer, reducing storm water runoff and replenishing groundwater resources.

Certification Criteria:

- a) System design and installation meet local regulations and guidelines
- b) System is properly maintained and inspected regularly
- c) Water quality testing is conducted regularly to ensure safety and efficacy

Validity: This certificate is valid for a period of 2 years from the date of issue.



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RAINWATER HARVESTING SYSTEM REPORT

College Name: Sourashtra College Pasumalai Madurai 625004

System Description:

A rainwater harvesting system has been implemented on the college campus to conserve rainwater and reduce stormwater runoff. The system consists of:

1. Earthwork: Excavation of a pit up to 10 ft depth
2. Well Ring: Installation of a well ring filled with random rubble stone
3. Rainwater Collection: Collection of rainwater from the terrace through rainwater pipes
4. Infiltration Pit: The collected rainwater enters the ground through the infiltration pit

Objectives:

1. To reduce stormwater runoff and prevent erosion
2. To recharge groundwater aquifers
3. To provide a sustainable source of water for non-potable purposes

System Benefits:

1. Reduced Stormwater Runoff: Minimizes the amount of stormwater entering the drainage system
2. Groundwater Recharge: Replenishes groundwater aquifers, improving water table levels
3. Water Conservation: Provides a sustainable source of water for non-potable purposes

System Performance:

1. Rainwater Collection Capacity: [Insert capacity, e.g., 10,000 liters]
2. Infiltration Rate: [Insert rate, e.g., 50%]
3. Groundwater Recharge: [Insert estimated recharge volume]

Recommendations:

1. Regular Maintenance: Clean and inspect the system regularly to ensure optimal performance
2. Monitoring and Testing: Regularly test water quality and monitor system performance
3. Expansion and Upgradation: Consider expanding the system to cover more areas and upgrading to improve efficiency

Conclusion:

The rainwater harvesting system at Sourashtra College is an effective way to conserve rainwater and reduce stormwater runoff. With proper maintenance and monitoring, this system can provide a sustainable source of water and help recharge groundwater aquifers.



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