DTE Institute Code : 6217

Estd 2009

Shri Balasaheb Mane Shikshan Prasarak Mandal's

ASHOKRAO MANE GROUP OF INSTITUTIONS

Address : Vathar Tarf Vadgaon, Tal. Hatkanangale, Dist. Kolhapur - 416 112 (Maharashtra)

Phone : (0230) 2407740, 2407760 Fax : (0230) 2407750 Email : director@amgoi.edu.in Website : www.amgoi.org

Approved by : AICTE, New Delhi No. F-No. MS (NewInt) 2009 / 08, Higher & Technical Education Department, Govt. of Maharashtra, Directorate of Technical Education, Mumbai. Affiliated to : Dr. Babasaheb Ambedkar Technological University, Lonere - Raigad. (B.Tech. & M.Tech. Programs), Shivaji University, Kolhapur. (MBA Program)

Accredited by NAAC

Ref. No. :

Date :

Summary Sheet

Sr. No.	Content
1	Rain Water Harvesting
2	Waste Water Management System
3	Maintenance of water bodies and distribution system in the campus
4	Bore well /Open well recharge Construction of tanks and bunds

ShriBalasaheb Mane ShikshanPrasarakMandal's

ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, VatharTarfVadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING

Rain Water Harvesting System for AMGOI Campus

Shri Balasaheb Mane Shikshan Prasarak Mandal's
ASHOKRAO MANE GROUP OF INSTITUTIONS
NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112
E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org
NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)
DEPARTMENT OF CIVIL ENGINEERING

Report on: Rainwater Harvesting Implementation Report for Ashokrao Mane Group of Institution College Campus

1. **Executive Summary:**
The implementation of rainwater harvesting at the Ashokrao Mane Group of Institutes (AMGOI) College Campus is a significant initiative to address water scarcity, promote sustainable water management, and reduce the dependency on external water sources. This report outlines the objectives, methodology, benefits, challenges, and recommendations for the successful implementation of rainwater harvesting systems on the college campus.

2. **Introduction:**
Water scarcity is a growing concern, and sustainable water management practices are essential to ensure the availability of water resources for future generations. Rainwater harvesting is an effective solution that involves collecting and storing rainwater for later use. The implementation of this system at AMGOI College Campus aims to reduce the reliance on traditional water sources and enhance water conservation efforts.

3. **Objectives:**
- To establish a comprehensive rainwater harvesting system on the AMGOI College Campus.
- To collect and store rainwater for various purposes such as landscaping, irrigation, and flushing toilets.
- To reduce the demand for municipal water supply and alleviate the strain on existing water resources.
- To create awareness among students, faculty, and staff about the importance of water conservation and sustainable water management.

4. **Methodology:**
The implementation process involved the following steps:
a. Site Assessment: A thorough assessment of the college campus was conducted to identify suitable locations for rainwater harvesting structures.
b. System Design: Professional engineers designed an efficient rainwater harvesting system tailored to the campus's specific needs and characteristics.
c. Installation: Skilled contractors installed rainwater harvesting structures, including collection tanks, gutters, filters, and distribution systems.
d. Educational Programs: Workshops and awareness programs were organized to educate the college community about the benefits of rainwater harvesting and its role in sustainable water management

5. **Benefits:**
a. Water Conservation: Rainwater harvesting reduces the demand for external water sources, leading to overall water conservation.
b. Cost Savings: By utilizing harvested rainwater, the college can potentially reduce its dependence on expensive municipal water supplies, resulting in cost savings.

ASHOKRAO MANE GROUP OF INSTITUTIONS CIVIL ENGG. DEPT. VATHAR TARF VADGAON

c. Environmental Impact: The implementation of rainwater harvesting aligns with AMGOI's commitment to environmental sustainability, reducing the campus's ecological footprint.
d. Educational Opportunities: The project provides educational opportunities for students in fields such as environmental science, engineering, and sustainability.

"Rain Water Collection Potential in AMGOI Campus"
Total terrace area: 4200 sq.m

Rainwater collection tank capacity: 1000 liters

Daily rainwater collection capacity of the system: 100,000 liters/day

Let's calculate the potential rainwater collection:

Calculate the potential daily Collection:

Potential Daily Collection=Total Terrace Area×Daily Rainwater Collection Capacity per square meter

Potential Daily Collection=Total Terrace Area× Daily Rainwater Collection Capacity per square meter

Assuming average rainfall collection efficiency, we can use a factor of 0.8 for

Calculation:Daily Rainwater Collection Capacity per square meter=0.8 l/sq.m/day

Daily Rainwater Collection Capacity per square meter=0.8l/sq.m/day

Potential Daily Collection=4200 sq.m×0.8 l/sq.m/day

Potential Daily Collection=4200sq.m×0.8l/sq.m/day

Calculate the number of tanks required: Number of Tanks=Potential Daily Collection Tank Capacity

Number of Tanks=Tank Capacity Potential Daily Collection

Number of Tanks=4200 sq.m×0.8 l/sq.m/day1000 l/tank

Number of Tanks=1000l/tank4200sq.m×0.8l/sq.m/day

Now, let's calculate these values:

Potential Daily Collection=4200 sq.m×0.8 l/sq.m/day

Potential Daily Collection=4200sq.m×0.8l/sq.m/day

Potential Daily Collection=3360 l/day

Potential Daily Collection=3360l/day

Number of Tanks=3360 l/day 1000 l/tank

Number of Tanks=1000l/tank 3360l/day

Number of Tanks=3.36 tanks/day

ASHOKRAO MANE GROUP OF INSTITUTION ★ VATHAR TARF VADGAON ★ CIVIL ENGG. DEPT.

Number of Tanks=3.36 tanks/day

Therefore, the potential rainwater collection report is as follows:

Potential Daily Collection: 3360 liters/day

Number of Tanks Required: Approximately 3.36 tanks/day (This means that you would need to consider installing at least 4 tanks to meet the daily demand, as you can't have a fraction of a tank.)

Please note that these calculations make some assumptions about the efficiency of rainwater collection, and actual collection rates may vary based on local weather conditions and other factors.

6. **Challenges:**
   a. Initial Investment: The implementation of rainwater harvesting systems requires an upfront investment, which may be a challenge for institutions with budget constraints.
   b. Maintenance: Regular maintenance is crucial for the efficient functioning of the system, and the lack of proper maintenance may impact its effectiveness over time.

7. **Recommendations:**
   a. Establish a dedicated fund for the ongoing maintenance of the rainwater harvesting system.
   b. Integrate rainwater harvesting concepts into the college curriculum to enhance awareness and understanding among students.
   c. Explore partnerships with local environmental organizations or government agencies to support future water conservation initiatives.

8. **Conclusion:**
   The successful implementation of rainwater harvesting at the AMGOI College Campus signifies a positive step towards sustainable water management. By overcoming challenges and embracing the benefits of this initiative, the college demonstrates its commitment to environmental responsibility and sets an example for other educational institutions to follow. This report serves as a roadmap for continuous improvement, emphasizing the importance of ongoing maintenance, education, and collaboration for the long-term success of the rainwater harvesting system at AMGOI.

Prepared by:

ASHOKRAO MANE GROUP OF INSTITUTION ★ CIVIL ENGG. DEPT. ★ VATHAR TARF VADGAON

HOD
HOD
Civil Engineering
AMGOI, Faculty of Engineering
Vathar Tarf Vadgaon, Tal. hatkanangale, Dist. Kolhapur

Shri Balasaheb Mane Shikshan Prasarak Mandal's

ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING

Rain Water Harvesting

ASHOKRAO MANE GROUP OF INSTITUTION ★ CIVIL ENGG. DEPT. ★ VATHAR TARF VADGAON

Shri Balasaheb Mane Shikshan Prasarak Mandal's

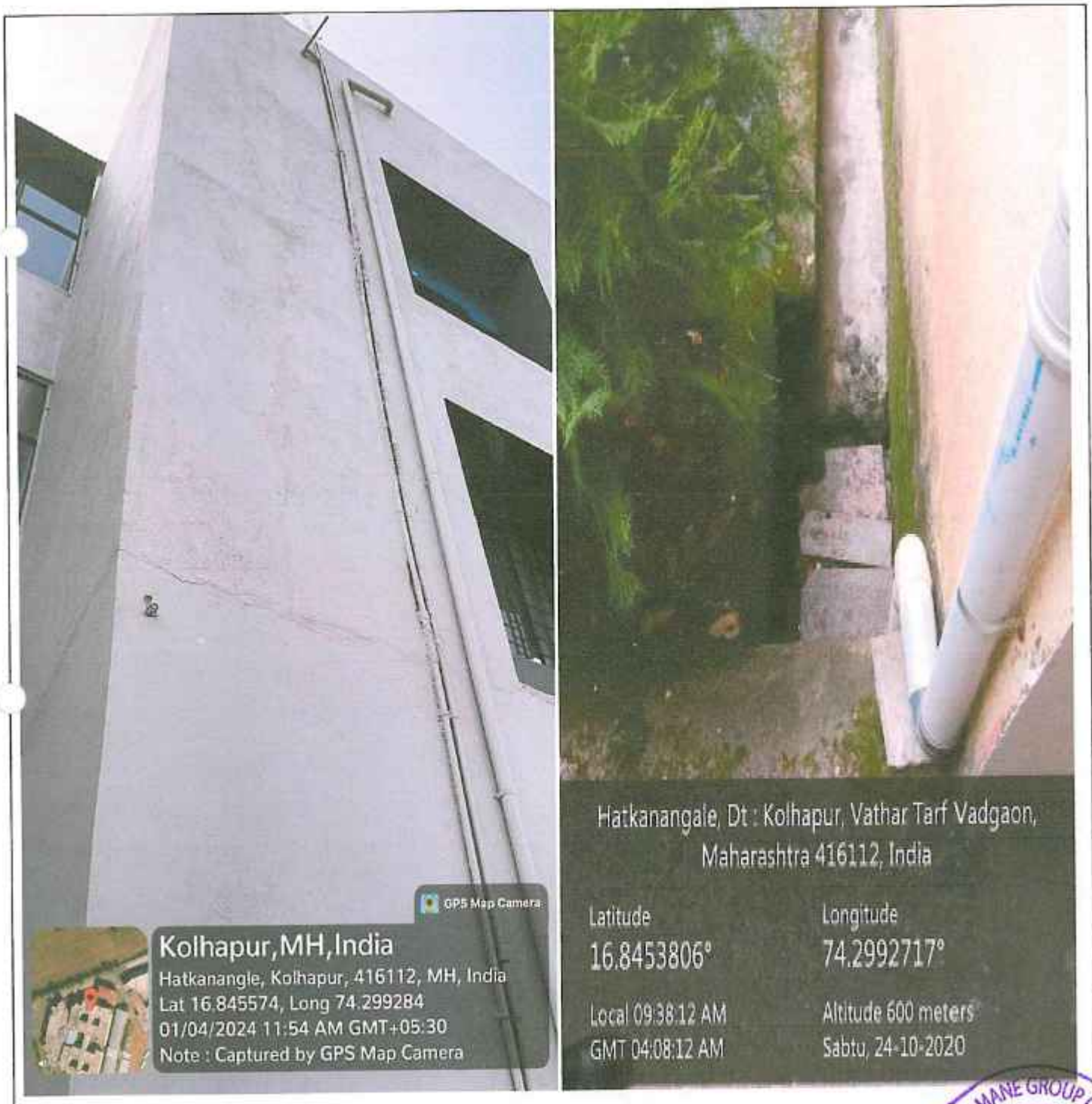
ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING



Rain water Harvesting at AMGOI College Campus

ASHOKRAO MANE GROUP OF INSTITUTIONS ★ VATHAR TARF VADGAON ★ CIVIL ENGG. DEPT.

Shri Balasaheb Mane Shikshan Prasarak Mandal's

ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING

=

Wastewater Management

SEWAGE TRETMENT PLANT SYSTEM AT AMGOI CAMPUS

Shri Balasaheb Mane Shikshan Prasarak Mandal's
ASHOKRAO MANE GROUP OF INSTITUTIONS
NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112
E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org
NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)
DEPARTMENT OF CIVIL ENGINEERING

Report on Sewage Treatment Plant for AMGOI Campus

1. Introduction:

The implementation of a Sewage Treatment Plant (STP) at the AMGOI Institute is a crucial step towards sustainable water management. This report outlines the necessity, design, and benefits of the proposed STP.

2. Need for Sewage Treatment:

AMGOI institutes, like any other educational institution, generate significant wastewater from various activities such as laboratories, washrooms, and other facilities. Treating this sewage is essential to meet environmental regulations, reduce water pollution, and contribute to responsible water usage.

3. Objectives of the Sewage Treatment Plant:

a. Compliance with Regulations: Ensure adherence to local and national regulations concerning wastewater discharge.
b. Environmental Conservation: Minimize the institute's environmental impact by treating sewage before disposal.
c. Resource Conservation: Reuse treated water for non-potable purposes, reducing dependence on fresh water sources.

4. Sewage Treatment Plant Design:

a. Capacity: The STP should be designed to handle the anticipated sewage volume 1000 kg/day from the institute.
b. Treatment Process: Utilize a combination of physical, chemical, and biological processes for efficient removal of contaminants.
c. Reuse System: Implement a dual-pipeline system for distributing treated water for irrigation, cooling, or other non-potable purposes.
d. Total Area of sewage treatment plant is 72.8 sq.m.

ASHOKRAO MANE GROUP OF INSTITUTION ★ VATHAR TARF VADGAON ★ CIVIL ENGG. DEPT.

Shri Balasaheb Mane Shikshan Prasarak Mandal's

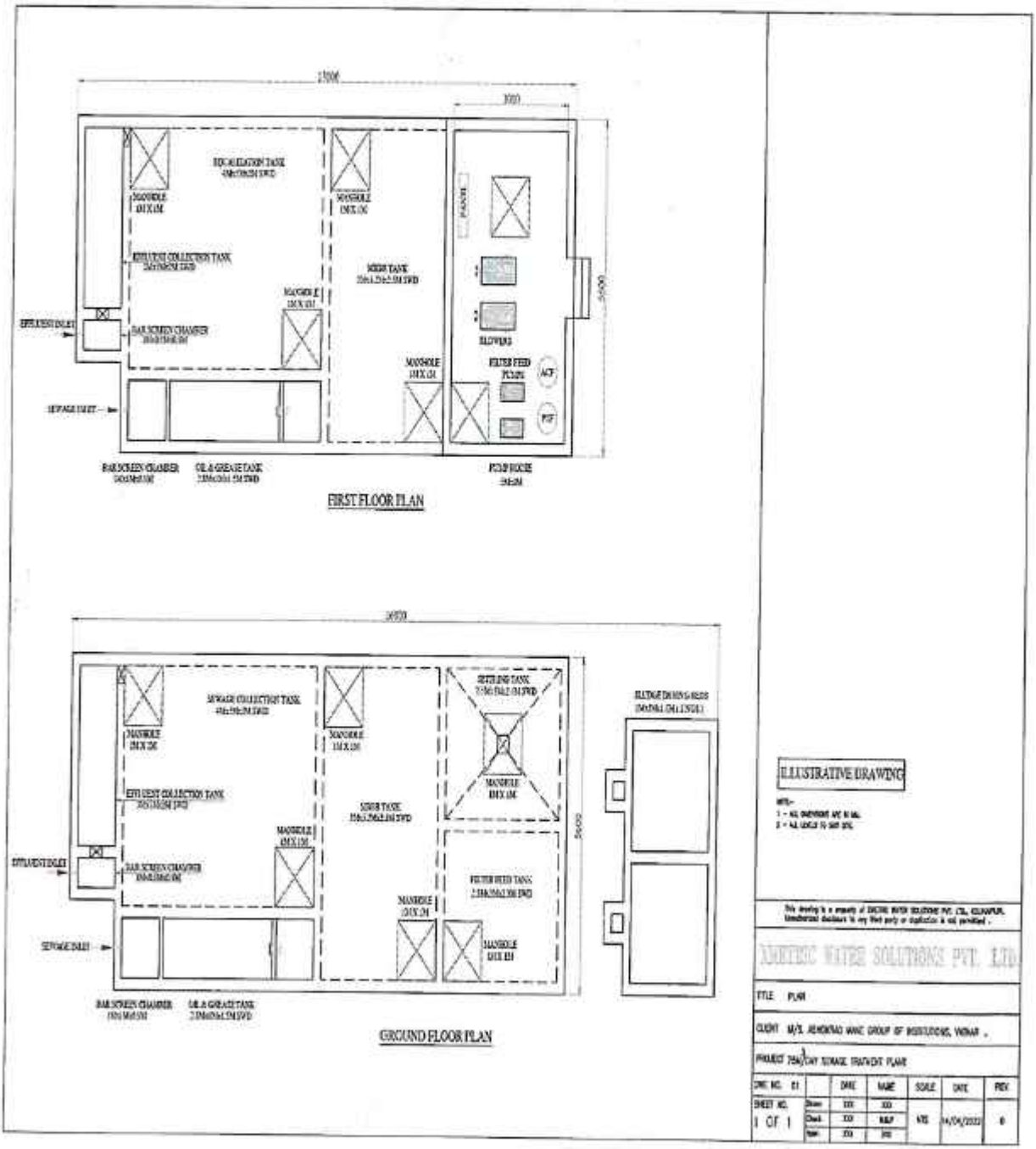
ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING



5. Components of the Sewage Treatment Plant:

a. Screening and Grit Removal: Initial removal of large debris and grit to protect downstream processes.

b. Biological Treatment: Employ activated sludge, oxidation ponds, or other biological methods to break down organic matter.

c. Clarification: Settling tanks to separate treated water from solid particles.

d. Disinfection: Use UV radiation or chlorine to eliminate remaining pathogens.

e. Sludge Management: Implement a sludge drying and disposal system to manage the by-products of sewage treatment.

6. Benefits of the Sewage Treatment Plant:

a. Environmental Conservation: Prevent water pollution and protect local ecosystems.

b. Cost Savings: Reduce the demand for freshwater, leading to potential cost savings for the institute.

c. Sustainable Practices: Showcase the institute's commitment to sustainable and responsible water management.

7. Implementation Timeline:

Provide a phased plan for the construction and commissioning of the STP, ensuring minimal disruption to institute activities.

8. Budget and Funding:

Present a detailed budget estimate for the design, construction, and maintenance of the Sewage Treatment Plant. Explore funding options, including grants, subsidies, or partnerships with local authorities.

9. Monitoring and Maintenance:

Establish a comprehensive plan for regular monitoring of the STP's performance and a maintenance schedule to ensure long-term efficiency.

ASHOKRAO MANE GROUP OF INSTITUTION CIVIL ENGG. DEPT.

10. Conclusion:

The implementation of a Sewage Treatment Plant at the AMGOI Institute aligns with the principles of environmental sustainability, regulatory compliance, and responsible resource management. This initiative not only addresses the immediate wastewater treatment needs but also contributes to the institute's reputation as a socially responsible institution.

Prepared By:

HOD
HOD
Civil Engineering
AMGOI, Faculty of Engineering
Vathar Tarf Vadgaon, Tal. hatkanangale, Dist. Kolhapur

ASHOKRAO MANE GROUP OF INSTITUTION * VATHAR TARF VADGAON * CIVIL ENGG. DEPT.

Shri Balasaheb Mane Shikshan Prasarak Mandal's

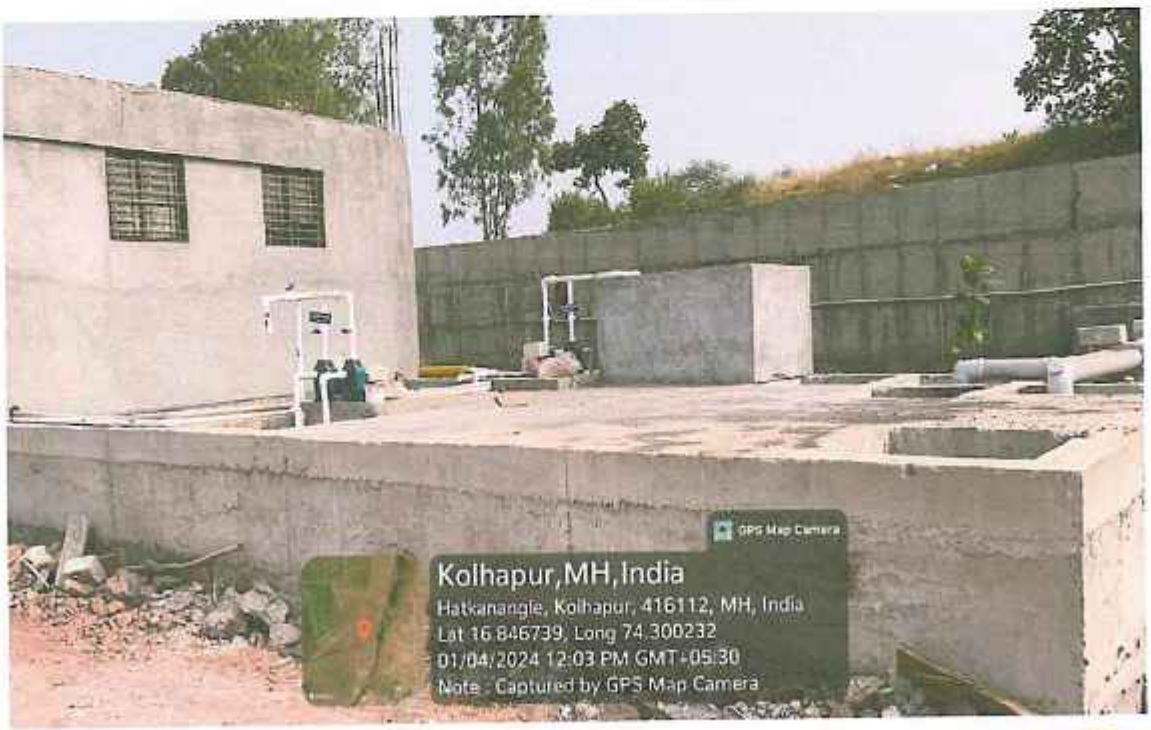
ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING



Sewage Treatment Plant System at AMGOI Campus

ASHOKRAO MANE GROUP OF INSTITUTION * VATHAR TARF VADGAON * CIVIL ENGG. DEPT.

ShriBalasaheb Mane ShikshanPrasarakMandal's
ASHOKRAO MANE GROUP OF INSTITUTIONS
NH – 4, VatharTarfVadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112
E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org
NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)
DEPARTMENT OF CIVIL ENGINEERING

DRIP-DROP

Drip Irrigation System for AMGOI Campus

Shri Balasaheb Mane Shikshan Prasarak Mandal, Ambap's
ASHOKRAO MANE GROUP OF INSTITUTIONS

DRIP AND SPRINKLER WATER IRRIGATION SYSTEM

FOR MANAGEMENT AND CONSERVATION OF WATER RESOURCES AT COLLEGE CAMPOUS

Goal:

The main aim of our application of drip irrigation system at Ashokrao Mane Group of Institutions is to proper utilization of available water and conserve the water for further needs. As our institute is located in arid to semi arid region of Kolhapur district and away from surface water sources like river and lakes, it is need to do proper management of available water which is on hire basis. The requirement of water is basically for domestic use, gardening and labs in colleges. The drip system is specially designed for supplying water directly to root zone of plants they will save water to large extent.

The Context:

The basic reasons for adopting the drip water system is unavailability or scarcity of water. The college is nearly 4 km away from Warana river. The lift irrigation system requires large amount of money as well as permissions of many farmers to do pipe lines which found to so much troublesome. To face this need of water of water the college is purchasing the water from private wall. As the owner has his own agriculture land, he require large amount of water for irrigation. Due to this very little amount of water become available for use in college. Again the problems of electric shortages are responsible for no water supply on several days. In such a condition supply of water for garden purpose become impossible. To face such condition we have found solution of drip irrigation system to supply the water for gardening. Watering by direct flexible pipe is found to be responsible for wastage of water and excessive irrigation.

The Practice:

There are many types of techniques available to install the drip system and supply of water. We have implemented point or dripper system and inline drip system. In dripper system the water is dropped from small dripper which is connected to main drip pipe line by making whole and pressing the knob of dripper in it. In this dripper small filter is provided which will transmit the water slowly drop wise. This filter is also responsible for filtration of water and removal of dart in water. The drippers are need to clean every week otherwise they will get clogged and will not transmit the water easily. Such type of drippers are provided to large plants only. For every plant there are two drippers whch are placed on either side of plant. Every dripper can transfer 4 liters of water in one hour. The inline system is not provided with drippers at all. In this system the wholes are directly present on pipeline by manufacturing. The wholes are present on every 1.5 feet distance. The supply of water through such systems is modified according=g to pressure of water from main source. The water supplied from well is very rich in calcium and other dissolved salts. This types of dissolved salts are responsible for clogging of drippers and pipes. When such clogging take place it is necessary to remove such salts by manual operations where skilled person is require to proper working. The inline drip lines are also get clogged where cleaning is done by forcing a humic acid in to pipe lines. The main pipe line is also provided with filter unit to remove salts but as proportion of salts is higher they will not be cleaned 100%. The unavailability of water in tanks is main problems along with low pressure supply. The need of regular monitoring and observations during irrigation as well as after irrigation which may hampered due to absence of person taking care of this.

Shri Balasaheb Mane Shikshan Prasarak Mandal, Ambap's
ASHOKRAO MANE GROUP OF INSTITUTIONS

REPORT OF DRIP IRRIGATION SYSTEM IN COLLEGE CAMPUS

Necessity: The requirement of water at college campus is very big specially for cleaning, drinking and gardening. As well as water is required at various laboratories for practical purpose e.g. Fluid mechanics lab, concrete alb, chemistry lab etc. to fulfill this needs proper utilization of available water is necessary which needs various techniques of water conservation. In gardening works watering of plants manually requires more water as well as time. To overcome this we have adopted a technique of drip irrigation in college garden. This will save water, electricity, man power, time and future problems related with over irrigation.

Consumption: The total requirement of water in college is about 90000 liter for cleaning, drinking and laboratories. Also requirement of water for garden is also high which is mealy 8000 liter per day. But actually only70000 liter of water is available every day.

Constraint: Water is need to purchase from private well on rent nearby to college. The water available from this well depends on electricity supply as well as fulfillment of needs of well owner for irrigating his agriculture. Also the problems like leakages are responcible for unavailability of eater at any certain day.

Solution : to face all the problems as mentioned above we have adopted a advance method of irrigation for garden by means of drip irrigation. We have installed the two types of drip equipments for meeting the needs of water in garden. Point drippers and inline drip method are employed at college for better use of available water.

Drip irrigation

INTRODUCTION OF DRIP SYSTEM:

Drip irrigation, also known as trickle irrigation or micro irrigation or localized irrigation, is *an* irrigation method that saves water and fertilizer by allowing water to drip slowly to the roots of plants, either onto thesoil surface or directly onto the root zone, through a network of valves, pipes, tubing, and emitters. It is done through narrow tubes that deliver water directly to the base of the plant.

Contents

History

precisely applied to the plant roots. In addition, drip can eliminate many diseases that are spread through water contact with the foliage Pulsed irrigation is sometimes used to decrease the amount of water delivered to the plant at any one time, thus reducing runoff or deep percolation. Pulsed systems are typically expensive and require extensive maintenance. Therefore, the latest efforts by emitter manufacturers are focused toward developing new technologies that deliver irrigation water at ultra-low flow rates, i.e. less than 1.0 liter per hour. Slow and even delivery further improves water use efficiency without incurring the expense and complexity of pulsed delivery equipment.An emitting pipe is a type of drip irrigation tubing with emitters pre-installed at the factory with specific distance and flow per hour as per crop distance.

Advantages and disadvantages: The advantages of drip irrigation are:

- Fertilizer and nutrient loss is minimized due to localized application and reduced leaching.
- Water application efficiency is high if managed correctly
- Field levelling is not necessary.
- Fields with irregular shapes are easily accommodated.
- Recycled non-potable water can be safely used.
- Moisture within the root zone can be maintained at field capacity.
- Soil type plays less important role in frequency of irrigation.
- Soil erosion is lessened.
- Weed growth is lessened.
- Water distribution is highly uniform, controlled by output of each nozzle.
- Labour cost is less than other irrigation methods.
- Variation in supply can be regulated by regulating the valves and drippers.
- Fertigation can easily be included with minimal waste of fertilizers.
- Foliage remains dry, reducing the risk of disease.
- Usually operated at lower pressure than other types of pressurised irrigation, reducing energy costs.

The disadvantages of drip irrigation are:

- Initial cost can be more than overhead systems.

- if the water is not properly filtered and the equipment not properly maintained, it can result in clogging.
- For subsurface drip the irrigator cannot see the water that is applied. This may lead to the farmer either applying too much water (low efficiency) or an insufficient amount of water, this is particularly common for those with less experience with drip irrigation.
- Drip irrigation might be unsatisfactory if herbicides or top dressed fertilizers need sprinkler irrigation for activation.
- Drip tape causes extra cleanup costs after harvest. Users need to plan for drip tape winding, disposal, recycling or reuse.
- Waste of water, time and harvest, if not installed properly. These systems require careful study of all the relevant factors like land topography, soil, water, crop and agro-climatic conditions, and suitability of drip irrigation system and its components.
- In lighter soils subsurface drip may be unable to wet the soil surface for germination. Requires careful consideration of the installation depth.
- The main purpose of drip irrigation is to reduce the water consumption by reducing the leaching factor. However when the available water is of high salinity or alkalinity, the field soil becomes gradually unsuitable for cultivation due to high salinity or poor infiltration of the soil. Thus drip irrigation converts fields in to fallow lands when natural leaching by rain water is not adequate in semi arid and arid regions.
- most drip systems are designed for high efficiency, meaning little or no leaching fraction. Without sufficient leaching, salts applied with the irrigation water may build up in the root zone, usually at the edge of the wetting pattern. On the other hand, drip irrigation avoids the high capillary potential of traditional surface-applied irrigation, which can draw salt deposits up from deposits below.

Shri Balasaheb Mane Shikshan Prasarak Mandal's

ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING

Drip Irrigation

ASHOKRAO MANE GROUP OF INSTITUTION ★ CIVIL ENGG. DEPT. ★ VATHAR TARF VADGAON

Shri Balasaheb Mane Shikshan Prasarak Mandal's

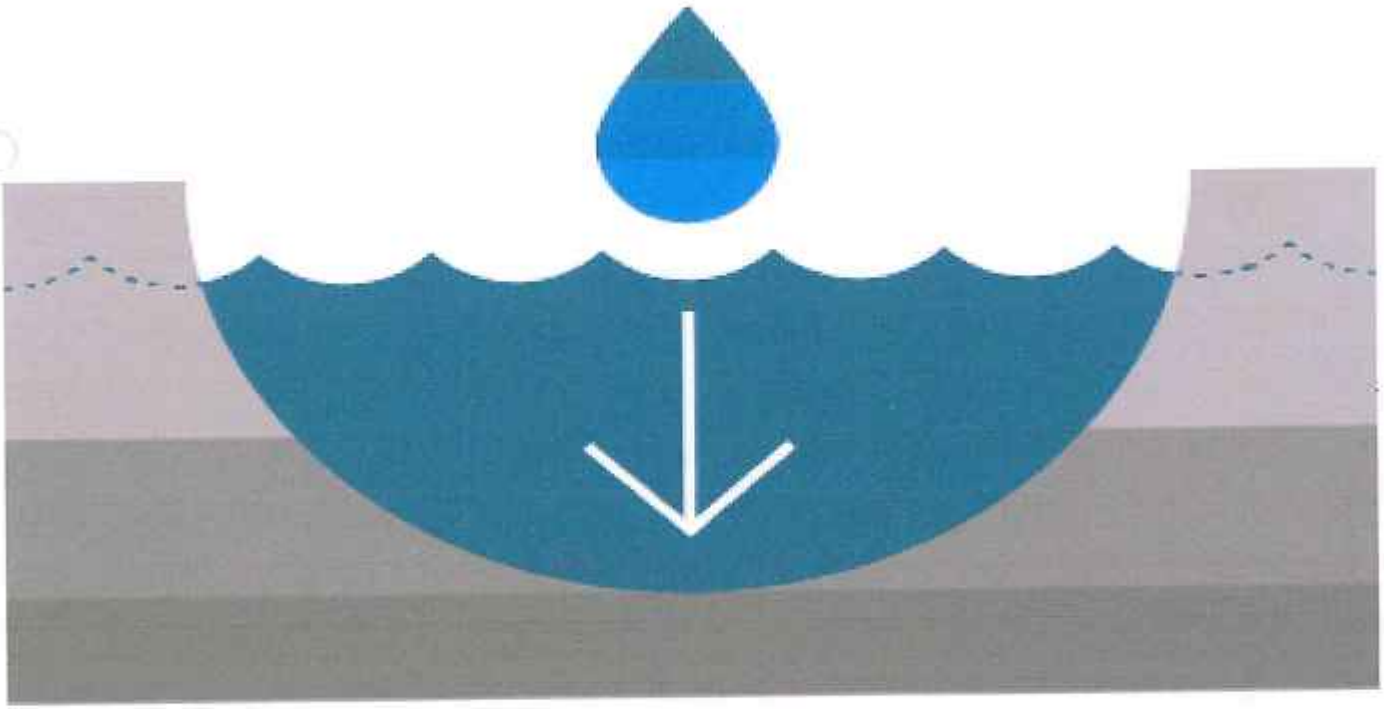
ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING



GROUND WATER RECHARGE SYSTEM AT AMGOI CAMPUS

Shri Balasaheb Mane Shikshan Prasarak Mandal's
ASHOKRAO MANE GROUP OF INSTITUTIONS
NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112
E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org
NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)
DEPARTMENT OF CIVIL ENGINEERING

Report on Groundwater Recharge System at AMGOI Campus

Executive Summary:

The Groundwater Recharge System at AMGOI (Ashokrao Mane Group of Institutions) campus presents a sustainable approach to augmenting groundwater levels by directly connecting rainwater runoff to borewells. This report outlines the design, implementation, and impact of the system, highlighting its effectiveness in promoting groundwater recharge.

Introduction:

AMGOI recognizes the importance of sustainable water management and the critical role groundwater plays in meeting campus water needs.

Objectives:

- Directly connect rainwater runoff to bore wells for enhanced groundwater recharge.
- Reduce reliance on external water sources by harnessing on-site rainwater.

Site Selection:

- Identified suitable locations for connecting rainwater to bore wells.
- Considered geological and hydro geological conditions to optimize recharge efficiency.

Design and Components:

Bore well Connection:

- Utilized existing bore wells as recharge points.
- Installed diversion structures to channel rainwater towards bore wells.

Surface Permeability:

- Enhanced surface permeability around bore wells to facilitate natural infiltration.
- Incorporated permeable surfaces to maximize rainwater penetration.

ASHOKRAO MANE GROUP OF INSTITUTION ★ CIVIL ENGG. DEPT.

Rainwater Harvesting:

- Implemented rainwater harvesting techniques to capture and direct rainfall towards bore wells.

Implementation:

- Successfully connected rainwater runoff to bore wells across the campus.
- Conducted outreach programs to educate the campus community about the importance of groundwater recharge.

Monitoring and Maintenance:

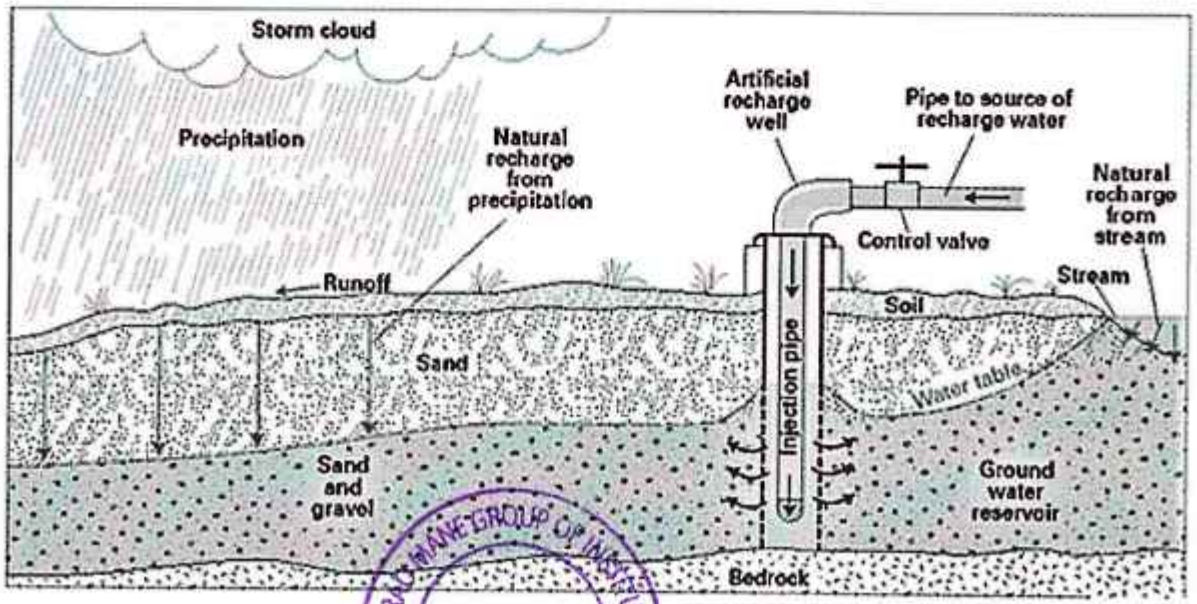
- Established monitoring protocols to assess groundwater level changes.
- Regular maintenance activities to ensure optimal functioning of the recharge system.

Benefits:

- Increased groundwater levels observed in bore wells.
- Reduced dependence on external water sources.
- Enhanced resilience against water scarcity.

Community Involvement:

- Engaged the campus community through awareness campaigns.
- Encouraged responsible water usage practices.



Shri Balasaheb Mane Shikshan Prasarak Mandal's

ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING

Conclusion:

The Groundwater Recharge System at AMGOI campus has proven to be a successful initiative, directly connecting rainwater runoff to bore wells and significantly contributing to groundwater replenishment. The project aligns with the institution's commitment to sustainable water management and sets a positive example for other educational campuses.

Prepared By:

HOD

HOD
Civil Engineering
AMGOI, Faculty of Engineering
Vathar Tarf Vadgaon, Tal. hatkanangale, Dist. Kolhapur

ASHOKRAO MANE GROUP OF INSTITUTION * VATHAR TARF VADGAON *
CIVIL ENGG. DEPT.

Shri Balasaheb Mane Shikshan Prasarak Mandal's

ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING

Ground Water Recharge System

ASHOKRAO MANE GROUP OF INSTITU... CIVIL ENGG. DEPT. VATHAR TARF VADGAON

Shri Balasaheb Mane Shikshan Prasarak Mandal's

ASHOKRAO MANE GROUP OF INSTITUTIONS

NH – 4, Vathar Tarf Vadgaon, Tal: -Hatkanangale, Dist: - Kolhapur-416112

E-mail: hodcivil@amgoi.edu.in, Website: www.amgoi.org

NBA accredited Programs* | Accredited by NAAC with 'A' Grade (CGPA 3.08)

DEPARTMENT OF CIVIL ENGINEERING

4. Disabled- Friendly, Barrier Free Environment

Ramp with Railing at Entrance of Collage Building

ASHOKRAO MANE GROUP OF INSTITUTION ★ CIVIL ENGG. DEPT. ★ VATHAR TARF VADGAON