Geographical Study of Rainwater harvesting system: A case Study of Gymkhana Building of Dr. Annasaheb G. D. Bendale Mahila Mahavidyalaya, Jalgaon

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Abstract

Rainwater Harvesting is a simple tech- issue by which rainfall is collected for future usage. This technique is. only a permanent Solution to those areas for which do not have other perennial Sources of water for drinking purpose and other activities of human being. The main objective of the research is to study the rainwater harvesting which installed on the Gymkhana Building of Dr. Annasaheb G. D. Bendale Mahila Mahavidyalaya, Jalgaon. The researchers calculate the total amount of rainwater which is collected from the roof of the Gymkhana building and calculates roof water harvesting amount. The volume of water received on the main building of college which is percolates in the ground is 634,275.2 Kiloliters.

Keywords: Harvesting, Perennial, Water Demand, Harvesting Potential

1. Introduction

The water is one of the important renewable natural resources. Every biotic Component is depending upon the water. Water demand management is meant to manage the available water resource wisely and carefully. Water is essential for sustaining all forms of life.

Rainwater Harvesting is a simple tech- issue by which rainfall is collected for future usage. The rainwater is collected, it stored and then utilized in different ways or directly used for water recharge purpose. Rainwater harvesting means to store the rainwater with the help of artificially designed System. Rainwater harvesting techniques play an important male to increase the level of ground water. This technique is. only a permanent Solution to those areas for which do not have other perennial/ Sources of water for drinking purpose and other activities of human being.

1.1 Objective

To study the rainwater harvesting which installed on the Gymkhana Building of Dr. Annasaheb G. D. Bendale Mahila Mahavidyalaya, Jalgaon.

1.2 Study Area

Study area for this research project researcher chooses Gymkhana Building of the Dr. Annasaheb G. D. Bendale Mahila Mahavidyalaya, Jalgaon. The college campus is in the heart of Jalgaon city. The total area of college campus is 2.5 acres of land and built-up area is 7433.91 sq. mtr the college campus. The college campus has 32 classrooms and 4 buildings. Its geographical location is 21’ North latitude to 75’ East longitude.

Rainwater Harvesting system is installed on Gymkhana Building of college.

2. Data base and Methodology

Primary & Secondary data is used while completing this research project. Researchers visit the location where of roof water harvesting system is installed on Gymkhana Building in the college campus. They also measured the area of roof of the building and collected the primary information of the college from Self Study Report of NACC of the college.

The researchers calculate the total amount of rainwater which is collected from the roof of the Gymkhana building and calculates roof water harvesting amount.

2.1 Discussion

The total amount of water that is received from rainfall over an area is called the rainwater legacy of that area. The amount that can be effectively harvested is called the water harvesting potential.

The formula of calculation of harvesting potential or run-of water received or produced. or harvesting capacity is given as: -

Harvesting Potential or Value of water received (m^3)

= Area of Catchment (m^2) x Amount of rainfall (mm) x Run of coefficient.

= 400.77 x1040x1

= 416,800.8 kilo- liters for Gymkhana Building of college.

The rainwater harvesting on the campus collects is about 416,800.8 liters of water. This water is percolates into the ground of the campus which increase, the level of ground water of the campus. The percolating structure is built & filled by pebble gravel charcoal Sand and small pieces of bricks. The size of percolating structure is large enough to contain the total captured water which then percolates.

3. Conclusions and Suggestions

3.1 Conclusions

- The roof rainwater harvesting is useful to improve the water scarcity problem of the campus.
- It is useful to increase the level of ground water of the campus.
- A huge amount of water got collected from the roof top surface of the entire Gymkhana building.
- Implementation of rainwater harvesting project to the campus the college is best approach to fight with present scenario of water scarcity in all aspects.

- The volume of water received on the main building of college which is percolates in the ground is 634,275.2 Kiloliters.

3.2 Suggestions

- Roof top rainwater harvesting system should be installed on each building of the college.
- Roof top rainwater is also collected in the constructed tanks so as it will be used for toilet garden, laboratory, and cleaning of the flours.

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