

# **DESIGN OF ROOFTOP RAINWATER HARVESTING SYSTEM FOR AN INSTITUTIONAL BUILDING**

**A Major Project Report Submitted to Civil Engineering Department  
For the Partial fulfilment of the Requirement for Award of Degree of  
Bachelor of Technology in Civil Engineering**

by

**Kashif Quamar (20102023)**

**Gulshan Chauhan (20102022)**

**L.J.S Raghuram (20102027)**

B.Tech. VIII Semester

Under the Guidance of

**Mr. Rochak Pandey**



**DEPARTMENT OF CIVIL ENGINEERING  
INSTITUTE OF TECHNOLOGY**

**GURU GHASIDAS VISHWAVIDYALAYA, BILASPUR (C.G.)**

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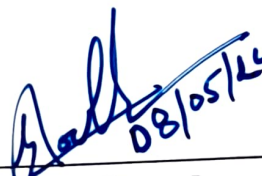
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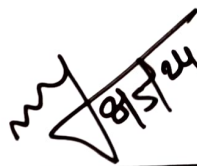
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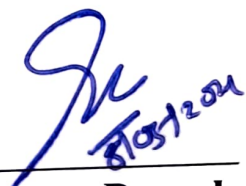


## **CERTIFICATE**

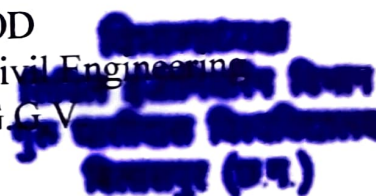
Certified that the major project entitled **DESIGN OF ROOFTOP RAIN WATER HARVESTING SYSTEM FOR AN INSTITUTIONAL BUILDING** submitted by **Kashif Quamar , Gulshan Chauhan and L.J.S Raghuram** in partial fulfilment of the requirements of the award of degree of Bachelor of Technology in Civil Engineering, Institute of Technology Guru Ghasidas Vishwavidyalaya, Bilaspur, is accorded to the student's own work, carried out by them in the Department of Civil Engineering during session 2023-24 under supervision and guidance.

Signature  08/05/24  
**Mr. Rochak Pandey**  
(Assistant Professor & Guide)

Signature  08/05/24  
(External Examiners)

Signature  08/05/24  
**Dr. Ashish Kumar Parashar**  
HOD  
Department of Civil Engineering  
I.T., G.G.V.

Signature \_\_\_\_\_  
(External Examiners)



# **ABSTRACT**

At the rate in which India population is increasing, and it became now most populated country. These will lead to high rate of consumption of most valuable natural resource water resulting in augmentation of pressures on the permitted freshwater resources. The gap between water demand and supply has been continuously widening. This has led to increase emphasis on the optimal management of the available water resources. Rigorous planning and management of water resources is required for long term sustainable resource development. Ancient method of damming river and transporting water to urban area has its own issues of eternal troubles of social and political. In order to conserve and meet our daily demand of water requirement, we need to think for alternative cost effective and relatively easier technological methods of conserving water. Rain water harvesting is one of the best methods fulfilling those requirements. The technical aspects of this Project are rainwater harvesting collected from rooftop area. First of all, required data are collected i.e, areas & hydrological rainfall data. Water harvesting potential and daily demand for the civil engineering department was calculated, and the tank capacity with suitable design is being considered. Volume of tank has been calculated with respect to the maximum daily demand, design of the motor pump required to supply the water from storage tank to supply tank has been calculated.