



**Bapatla Engineering College :: Bapatla**  
(Autonomous)

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## **6.1 Policy and Strategy of the Maintenance of Water Distribution System in the Campus**



**Bapatla Engineering College:: Bapatla**

(Autonomous under Acharya Nagarjuna University)

(Sponsored by Bapatla Education Society)

BAPATLA - 522102 Guntur District, A.P.,India

[www.becbapatla.ac.in](http://www.becbapatla.ac.in)



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**Best Practices of the college include the strategies for conservation of water in and around the college premises:**

1. Minimizing water run-off by attaching faucets, thereby preventing wastage of water.
2. Reducing evaporation losses and recharging groundwater by planting and maintaining trees.
3. Use of recycled water for gardening and flush toilets.
4. Installation of the sprinkler system to water plants and to avoid water loss.
5. Watering of plants is carried out before 7 A.M and after 5 P.M to reduce evaporation loss.
6. An active Environment Club with exclusive Staff Co-coordinators, Student Secretaries and volunteers chart various activities and programs to create awareness on environmental issues among students.
7. Continuous monitoring of water usage and misuse in the college by student volunteers called 'Environment Comrades'.
8. Display boards for instilling alertness to conserve precious water resources are fixed near all the water sources.
9. Use of composting units and establishment of vermicomposting units in the campus to process dry wet waste generated in the campus.
10. Value added courses on Environmental Issues and Conservation and Vermicomposting Technology are offered for students to enrich their awareness on environmental issues and solutions.

Thus the College takes utmost care to instill values in the minds of the growing generation and the public through its valuable initiatives.

**Awareness activities to instill water conservation among young minds:**

1. Awareness Campaign on Water Resources
2. Swachh bhara abhiyan
3. Van mahotsav

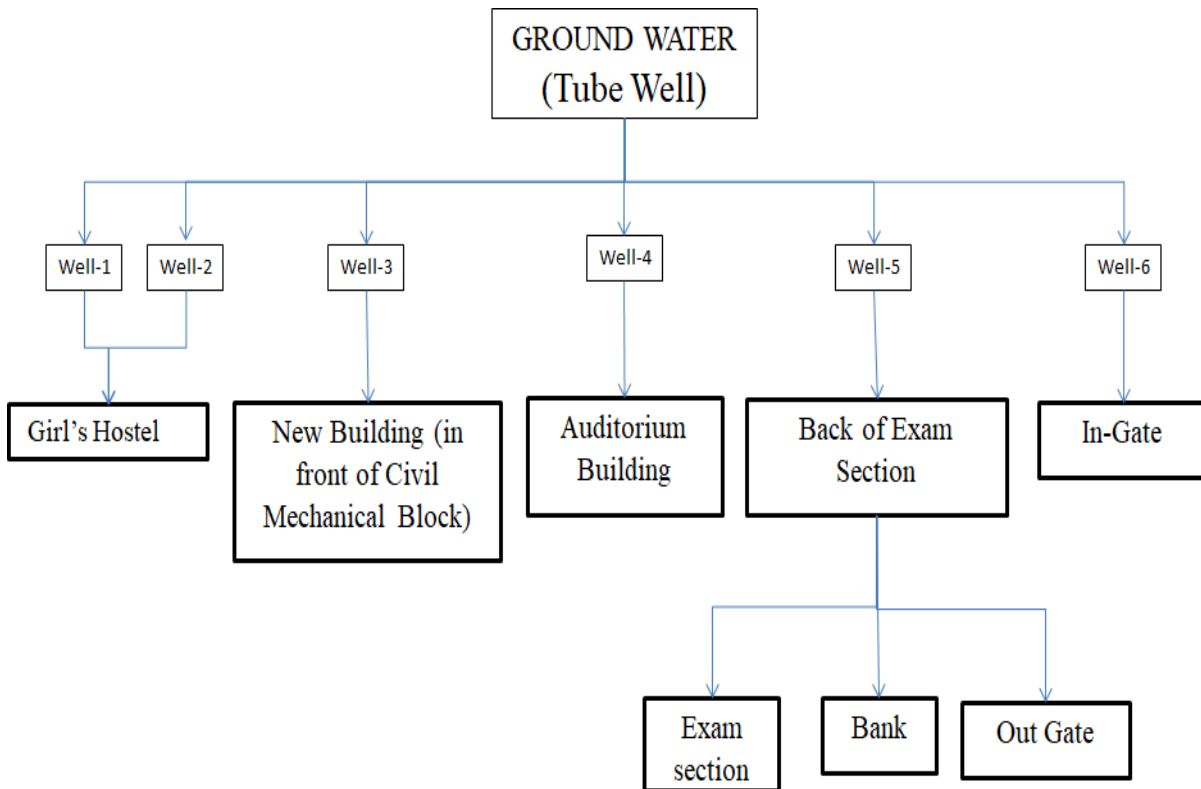


  
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**Flow diagram of ground water (tube well) points in various blocks for the purpose of domestic and gardening**



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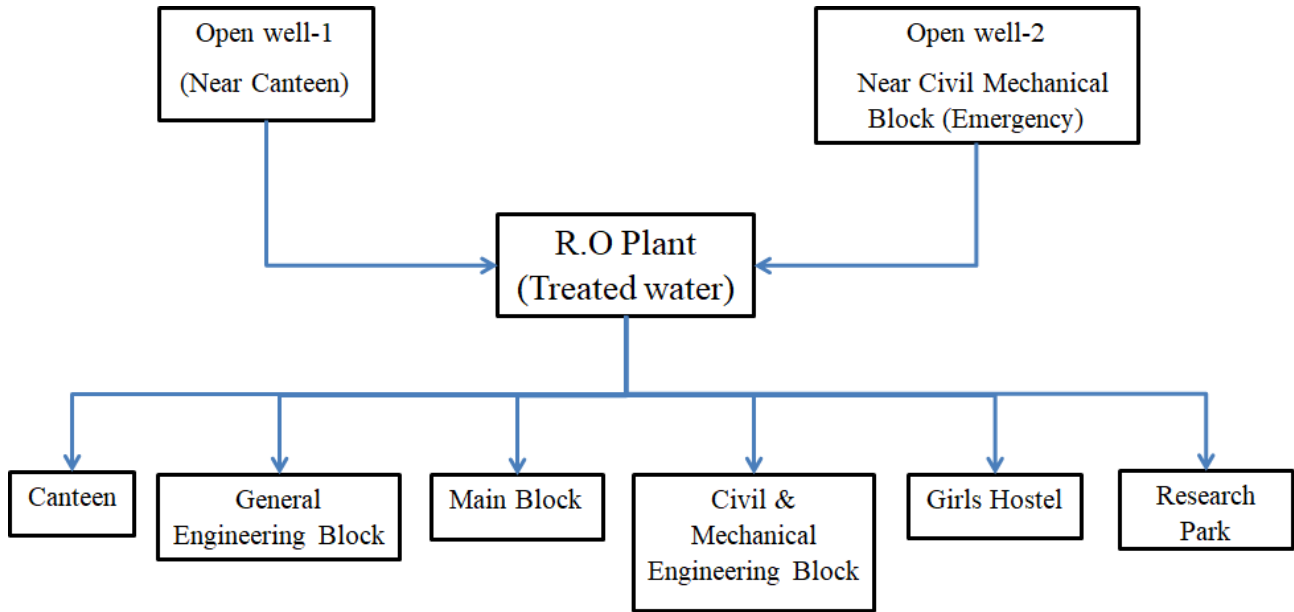
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Flow diagram for drinking water distribution system



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### **Water conservation facilities available in the Institution:**

- 1. Rain water harvesting**
- 2. Bore well/Open well recharge**
- 3. Construction of tanks and bunds**
- 4. Waste water recycling**
- 5. Maintenance of water bodies and distribution system in the campus**

Water scarcity is one of the growing concerns of the present times, the only solution for which is water conservation. Bapatla Engineering College (Autonomous) is located in semi-urban/rural area. The daily requirement of water in the campus is around 250000 liters. There is no Municipal Water supply for the college. The college depends on ground water for all of its water needs. Hence, efficient usage of available water and adaption of water conservation measures are essential. It is taken care of different levels at the college from rainwater harvesting, tree plantation to recycling of water.

### **The following measures are taken for the conservation of water:**

#### **2. RAIN WATER HARVESTING**

There are two ways of harvesting rainwater namely surface runoff harvesting and roof top rainwater harvesting. Water harvesting will not work on soils with a sandy texture, because the infiltration rate will be too high. If the water soaks in as fast as it falls from the sky, no runoff will occur. Bapatla Engineering College is situated nearly 7 km from seashore. And soil present in this area is sandy soil. Hence surface runoff harvesting is not much more suitable for this college area. We are follows the second method of rooftop rainwater harvesting.

The rain water coming from roof tops of each building are collected through eighteen total number of percolation pits of size [1.2mx1.2m] square or 1.2m diameter of circular shapes with 2.5m depth for each is constructed at all feasible points in the campus for the purpose of the ground water recharge.

Paver blocks with water permeating property are being used for pedestrian paths to recharge the ground water.

#### **3. BOREWELL/OPEN WELL RECHARGE**

Total area of the college is about nearly 1, 21,405 m<sup>2</sup>, in that only 60% of total area of 72843 m<sup>2</sup>. was developed as academic zones and the balance is about 48562 m<sup>2</sup> (i.e.,40% on total area) was earmarked for greenery. Five numbers of open wells in the campus are recharged by rainwater. And five number of bore wells in the



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campus are constantly replenished by constructing recharge pits. Regular maintenance and upkeep is carried out by the institution. For efficient usage of water to gardening drip irrigation/trickle irrigation has followed in the campus. This may help to achieve water conservation by reducing evaporation and deep drainage.

#### **4. CONSTRUCTION OF TANKS AND BUNDS**

One of the primary requirements of a water harvesting system is that of containers to store the harvested water in a hygienic condition. This need is more pronounced in high-rainfall areas, where it is more feasible to store water in containers for direct use, rather than for recharging the groundwater. As a part of revival to traditional wisdom, in this institute we build six numbers of Ferro-cement tanks to collect and storage the rainwater for reuse onsite rather than allowing it as run off. Ferro-cement can provide a low-cost and easy-to-build solution to the need for low-cost containers. Sprinklers are arranged in Ferro-cement tanks for recreation purpose.

#### **5. USAGE OF WASTEWATER**

Wastewater discharged as effluent from septic tank and canteen wastewater are used for gardening and watering of trees. Recycling of water in Ferro-cement tanks are used as recreation purpose. R.O. wastewater coming from water treatment plant (2000Lt/hr.) is used for transformer earthings as reuse.

#### **6. MAINTENANCE OF WATER DISTRIBUTION SYSTEMS IN THE CAMPUS**

The ground water is pumped into storage tanks located at different places in the campus. There are ten numbers of overhead storage tanks and in the campus. The water is distributed through well laid pipe network. Drinking water after treating in RO plant is supplied to elevated tanks provided in each of the blocks with another set of distribution pipes.

Entire distribution system is well supervised by Civil works committee to ensure that there are no leakages and wastages of precious water through joints, valves etc. Waste usage of water is reduced using low pressure flushes. All the stockholders of the college are well educated to use water economically and efficiently.

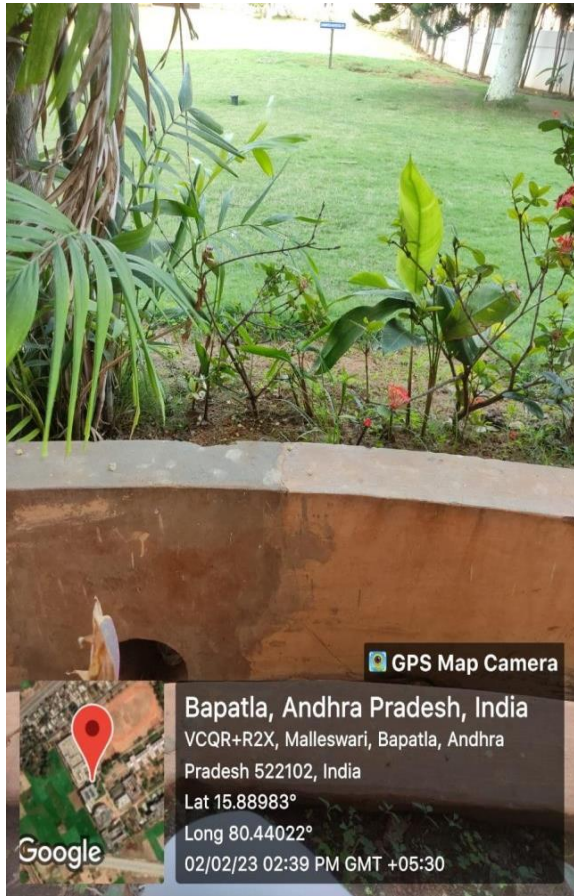




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## 1. RAIN WATER HARVESTING



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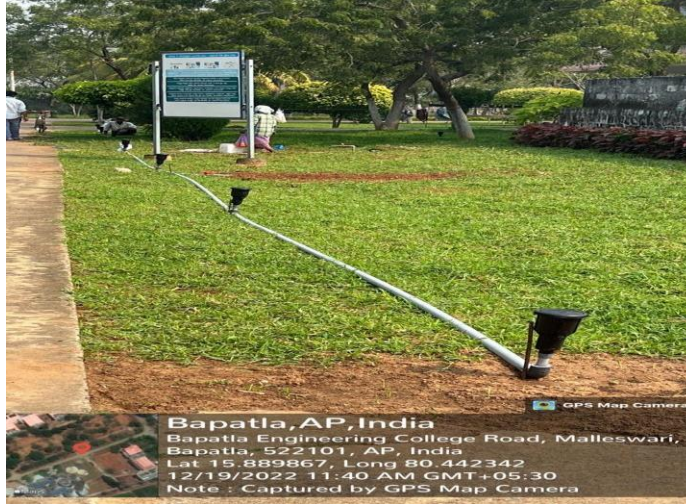




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## Sprinklers/ Drip Irrigation







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Paver Blocks



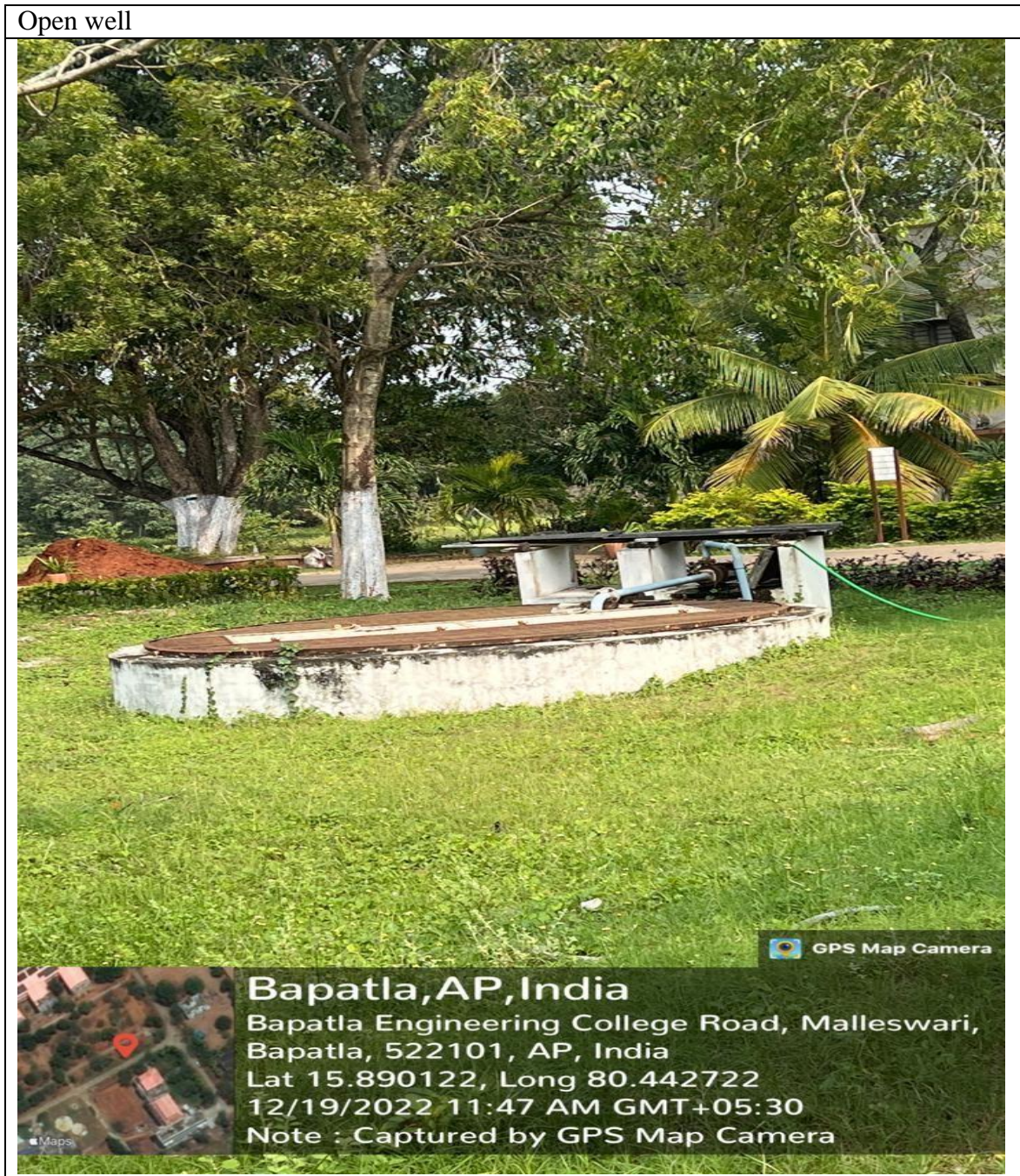




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### 2. BOREWELL/OPEN WELL RECHARGE



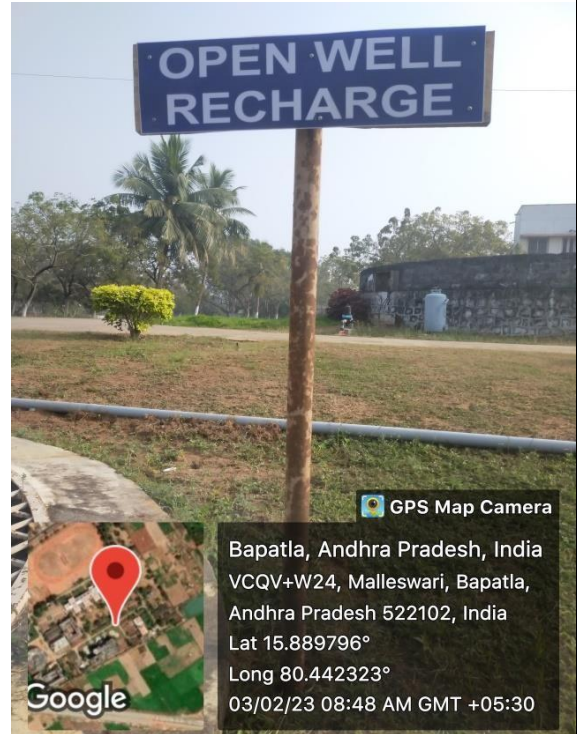




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### Open well Recharge







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### Water Distribution System



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Bapatla, Andhra  
Pradesh 522102, India  
02 Feb 2023 09:08 am

over  
cast  
clouds  
26.0



GPS Map Camera



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VCQR+WG5, Malleswari, Bapatla,  
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Long 80.441574°  
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