7.1.6 “Rain Water Harvesting Plan and Design at main building, Sinner”

1. Location of Institute

The campus of **Pravara Rural Education Society’s SIR VISVESVARAYA INSTITUTE OF TECHNOLOGY, Nashik** is situated at the South-west direction of Sinnar city near to Chincholi village on the Nashik- Pune Highway.

Data collection- As the Chincholi is located at 10 km from Sinnar city. Average annual rainfall for this area ranges between 500-750 mm per annum.

2. Dam Specification

Catchment area of dam –1,21,450 sq.m

Size of tank = 400ft X 27ft X (10.25)ft.

Capacity of Dam- 50 lac litre

Consumption of harvestable rainwater = 1.5 lac Lit/annum daily

Cost of Dam- = Rs. 9, 00, 000 /-

3. Safety features:-

Dams can fail if the structure is breached or suffers significantly damage. Dams may also fail slowly through siltation of the reservoir or loss of water through seepage. If a dam fails due to structural weakness, it can cause extensive damage including fatalities and this should be avoided at all costs. It is therefore necessary to monitor signs of weakness such as cracks, submergence or seepage around the structure. Most dams are designed with mechanisms to permit the reservoir to be lowered or even drained in the event of such problem. Cracks and other fissures can be remedied through rock grouting – which involves pressure pumping of concrete mix into weak fractured rock. Small earth dams should be fenced and the catchment area protected from damage so as to reduce siltation damage. Animals and people should not access water directly from the dam, but the design should incorporate water off-take structures to minimize human traffic and trampling. Communities must be trained on the acre, utilization and management of the dam.

4. Maintenance of earth dams

Earth fill dams require regular inspection and maintenance. An inspection before spring runoff is critical to ensure the spillway is not blocked with snow or other material. All blockages must be removed to prevent overtopping and the dam washing out. During runoff,

additional inspections should be carried out to watch for signs of erosion, spillway blockages (ice or debris) or overtopping of the dam. After the dam is free of snow, a visual inspection can be completed to assess the slopes for erosion, rodent damage, seepage or slumping. Burrowing rodents such as beavers, muskrats and gophers should be removed from the dam immediately. All potential problems must be repaired as soon as possible to safeguard the dam. Side slopes should be cleared of tree growth on a regular basis.

5. Concluding Remark

As per the above report, rain water harvesting has been already implemented for the college building. We are utilizing the water for gardening, ground water recharge as well as for drinking purposes with filtration and purification plant.