

run by gravity onto the fields. Less of it soaks into the ground in this way.

One such tank built at Gaudgaon (see Figure 23) is 4 feet high and has an inside diameter of 16 feet. Similar tanks may be built of masonry, reinforced concrete, or ferrocement. For masonry construction, the first step is to pour a concrete slab on level, well-packed ground. When the cement has cured, stone walls are built up around the edge, resting on the slab. The walls may be tapered, since most of the pressure comes near the bottom of the walls. ~~The tank is lined with a layer of water-proof cement plaster.~~ For a reinforced concrete tank, the slab and walls may be thinner, about 4 inches thick. Steel bars are embedded in the concrete for strength. For a ferrocement tank, several layers of steel bar and mesh are used, with only a thin layer of cement plaster.

Unfortunately, storage tanks such as these are nearly as expensive as the windmill itself. A large irrigation water storage tank built at the Toujours Mieux Workshop in Auroville, India, may offer a cheaper construction method if it proves successful. It uses brick walls built in the shape of a flower, and a watertight floor made of a mixture of mud and salt.

### **Pipeline**

If a storage tank cannot be built, a pipeline can be used to carry the water from the windmill to an earthen trench near the field. The pipe for such a pipeline can be made of steel, plastic, cement, or clay. However, the cost of many of these materials is very high, and a long pipeline can be expensive.

### **Auxillary power sources**

The 16-ft diameter windmill is designed so that people can pump water by hand when the wind is calm. One of the 24-ft diameter irrigation windmills at Gaudgaon is fitted with a bullock-driven gearwheel to operate the piston pump when the wind is calm. This system, which is still being tested, would be most useful when fitted to a windmill chainpump.

### **Intermittent irrigation**

The cheapest and easiest way to use a windmill for irrigation is simply to wait for strong winds before trying to irrigate. In Solapur, the winds alone may provide enough power to irrigate jowari (millet). This staple crop is grown during September-January. The wind does not blow continuously during