

F) Dewatering

1. Necessary protection shall be provided to all existing facilities at all times
2. The dewatering system shall be based on reducing the loss of soft materials in the soil, or any impact on surrounding structures
3. Hydrological model shall be made for (20) meters below the excavations, the model shall define: soil type and rocks, horizontal permeability for each layer of the soil, un-cohesive or gypsiferous soil or any other areas prone to water leakage under the surface.
4. Prepare dewatering design and general location by digital modeling to reduce pressure of dewatering and to suite the depth of the retaining wall and excavation depth to ensure there s enough safety factor against soil swelling.
5. Define the areas of hazardous hydrological sedimentation under ground.
6. Prepare network to monitor the pressure of ground water pressure and barometric pressure independent of the dewatering system to monitor the vertical and horizontal graduation of ground water inside and outside the excavations and shoring.
7. Dewatering shall not be stopped prior to obtaining written approval from the main consultant and ensure achieving balance between water pressure and weight of the building with a safety factor not less than (1.1) and ignoring friction between wall and soil.
8. Care must be taken in dewatering to ensure soft soil is not removed during pumping because this may lead to unexpected settlement in the surrounding ground and the structures related to it.

G) Water and Soil Pressure

1. soil up to (1) meter depth shall be ignored, safety factor of at least (1.1) shall be used when designing dead lifting loads for basements or when verifying lifting and swelling forces for buildings.
2. When designing water ground levels, seasonal tide impact shall be taken in to consideration; in addition to current level of ground water in the area.