High Security Concrete Doors


Fig 1


Fig 2


Fig 3

Fig 4


Fig 5

Fig 1 shows the pumps, motors, valves and electrical panels of a newly constructed pump station. Wisely the owners (Joburg Water) specified high-security doors (see fig 4) before vandals could destroy the state-of-the-art equipment. The merits of three types of high-security doors are discussed below:

Fig 2 and Fig 3 : **Platform door.** Fig 2 shows an outside view of a high-security 'platform' concrete door. Fig 3 is an inside view. The door has steel wheels that run on two rails, which in turn are supported by a concrete floor. A concrete platform at the base of the door prevents the door from falling over or being forced inwards.

Fig 4 : **Swing door**. Fig 4 shows an outside view of a high security 'swing' concrete door. Each leaf has two robust hinges that connect the leaves to a concrete wall (or to concrete columns) on the inside. Swing doors are particularly useful where there is no concrete floor-slab inside the pump station, only flimsy grating. In such circumstances, the weight of the door is transferred through the hinges into the walls (or columns) rather than through a floor-slab (as is the case with a platform door).

Fig 5 : **Pull-out door.** Fig 5 shows an outside view of two high security 'pull-out' concrete doors. The doors open by pulling them outwards away from the structure. To close they are pushed back towards the structure and into the doorway, as illustrated by the far door in the photograph. Pull-out doors require substantial RC slabs in front of the structure - to support the doors. This adds to the cost, but may be the only option if there are obstacles such as pipes, plinths, valves, and motors near to the entrances.