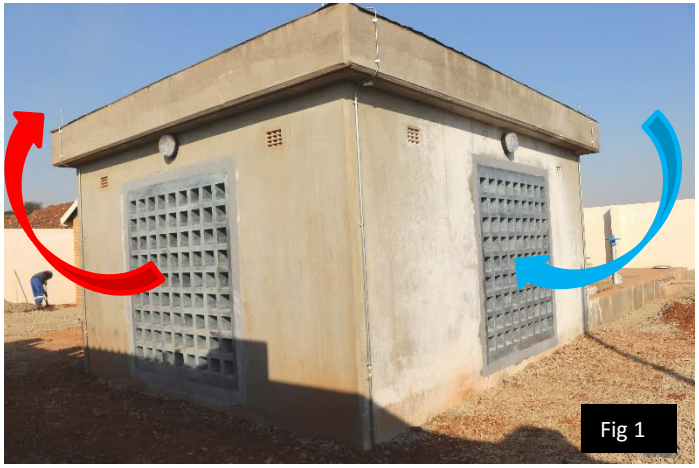


Fig 1


Fig 2


Fig 3

Panel-Vent

An interruption of Eskom power for an hour is all it takes for incoming effluent to fill the sump of a typical sewer pump station to overflowing, resulting in polluted streams and rivers.

For this reason more and more pump stations are being equipped with 'back-up' diesel powered generators (see fig 2 & 3). The generator is housed in a secure room, where both the walls and the roof-slab are made of reinforced concrete, to prevent the generator and associated electrical controls and cables from being vandalised.

The air-vents should be equally secure, such as the inflow 'panel-vent' on the RHS of fig 1 and outflow 'panel-vent' on the LHS (and vice versa in fig 3). These panel-vents are made from 60MPa concrete and are made as thick as the pump house walls. They incorporate a matrix of air passages, 9 x 9 in this example, formed by welded steel plates, which are additionally anchored in the infill concrete. The panel-vents can be made larger or smaller simply by adding or subtracting rows/columns of air passages.

Fig 4 is a horizontal cross section through an outlet panel-vent (A), and for simplicity is shown here to have only five air passages (B), made from steel 'air passage' plates (C), a front plate (D), 60MPa concrete (E), steel rebar (F), and a V-groove on either side (G).

Prior to installing the panel-vent two matching V-grooves (H) are cut into the walls (I) on either side. Next the panel-vent is positioned, and the space between the vent and the walls is filled with a high strength non-shrink flowable grout (J). Once the grout hardens its opposing V formations form an effective key making the panel-vent immovable.

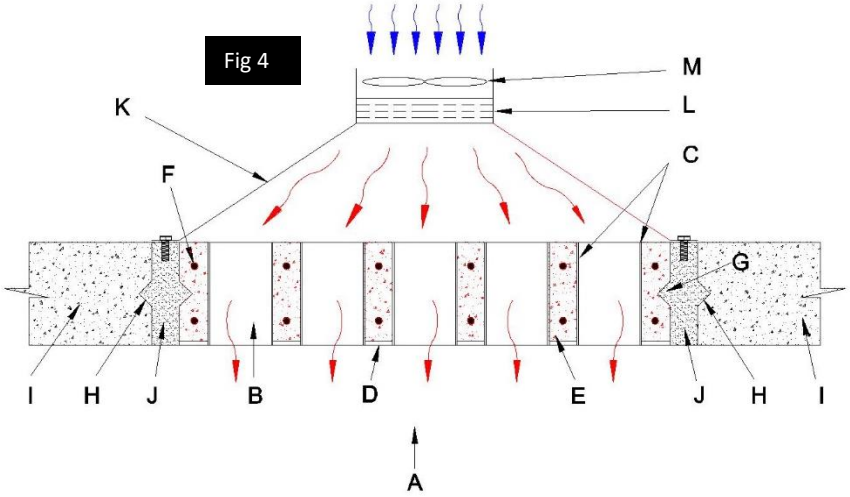
Fig 4 also shows how a fan (M) blows the cool air through the generator's radiator (L) and how the air, now hot, goes into an exhaust duct (K) whereupon it flows through the air passages (B) of the outlet panel-vent (A) to outside the structure. In fig 2 the exhaust duct is indicated with a red arrow. Note that the exhaust duct has not yet been fitted in fig 3. In both fig 2 & 3 the radiator is indicated by a yellow arrow.

The Panel-Vent may be made to any size. For other anti-vandalism/theft products in our range please see www.comcretedoorsandvaults.com which variously protect valves, pumps, boreholes, instruments, control panels, transformers, pump stations, sub stations etc. All products have robust locking mechanisms, and are made from heavily reinforced 60MPa concrete for extreme protection.

It is evident that the panel-vent can be equally useful to close off windows and other openings that are an easy target for vandals.

Credits
Client : Mogale City
Consultant : Proplan Consulting Engineers (Pty) Ltd.
Main Contractor : Ultimate Dynamic (Pty) Ltd
Sub Contractor (Civil) : Doron Construction (Pty) Ltd
Air Vents (Supply & Install) : Concrete Doors and Vaults (Pty) Ltd

Fig 4



Manufactured and installed by Concrete Doors and Vaults (Pty) Ltd.

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