

PRESSURISED RIDGE RECIRCULATION UNITS (OPTIMAVENT/CENTRAVENT) FOR PIG BUILDINGS

The Optimavent/Centravent are fan ventilation systems comprising a ridge mounted casing with pressurising fan blowing downwards onto a horizontal baffle together with a small recirculation fan which blows upwards onto the underside of the same baffle.

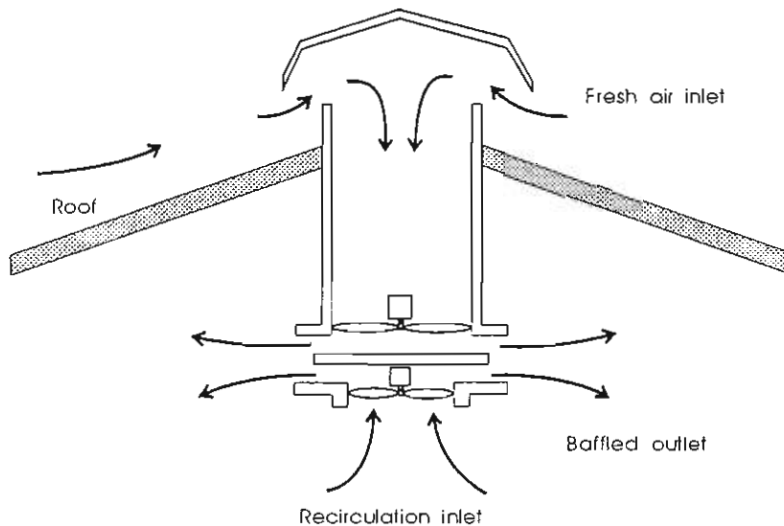


Fig. 1

It has proved to be popular because farmers feel that:

- a. In winter it seems to be able to maintain house temperature without allowing the atmosphere to become too stuffy.
- b. In summer it can produce high air speeds across the pigs thus increasing the cooling effect of the incoming air.

The technical reason why the system is successful in case (a) is its inherent lack of susceptibility to wind. It has long been recognised that ridge inlet with baffled wall outlet systems are wind proof.

Reference to the pressures on a building in a force 5 wind show the advantages clearly. To minimise wind induced draughts the wind pressure on the inlet and active outlet should be approximately the same. This is shown in the example illustrated (fig. 2).

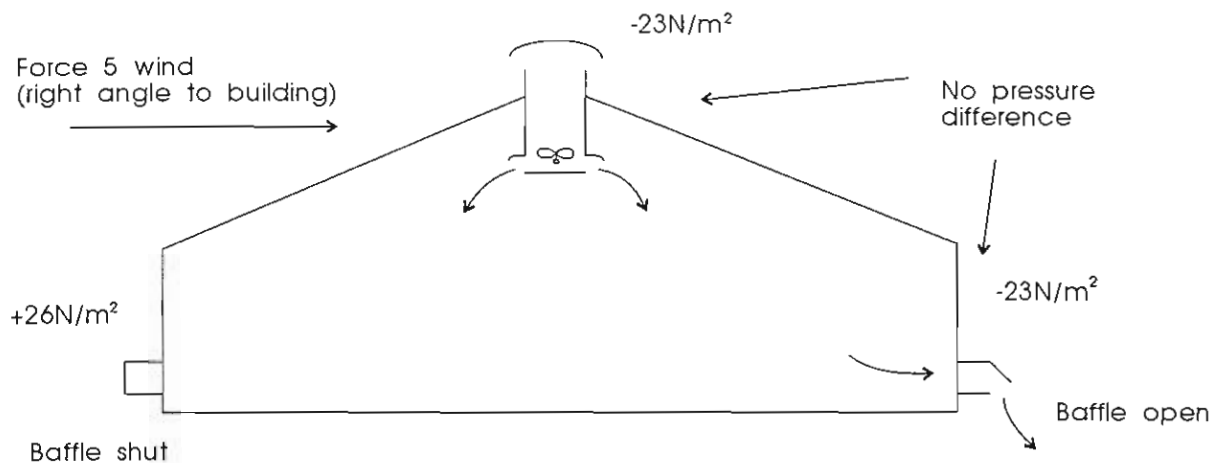


Fig 2.

This is not the case for a building with ridge extraction and wall inlets (fig. 3).

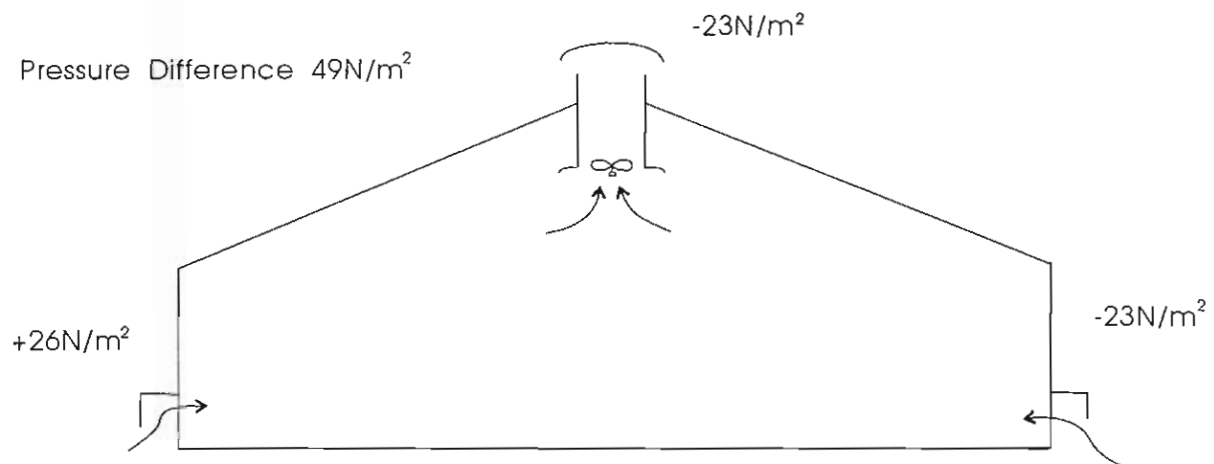


Fig. 3

Recirculation of air uses the full potential of the building air volume as a pollution dilutant and also evens out the temperature gradients between the ridge and floor. It also mixes with the cold incoming air in winter stopping it dropping and causing draughts at pig level.

In hot summer conditions air speed is of great importance as it can be used to aid cooling of the pigs. The effects on performance are illustrated in the Table 1.

Increased air speeds from the pressurised air system can therefore be useful in relieving heat stress and can help to improve performance.

Table 1

	AIR SPEED M/S	
	0.25	0.73
Mean temp °C	21	21
Max temp °C	33	33
Daily Gain	598	645
Feed Conversion Ratio	3.48	3.15

This type of ventilation system is particularly suited to fully slatted accommodation where the control of air direction is not critical.