6.0 GENERAL

Figure 6.1. - Transitions
Ensure symmetrical transitions from duct equipment to fan inlet.

Figure 6.2. - Air flow dead zones
Unducted air extract fans require careful location to obtain an even airflow across the room.

 Poor airflow - little or no airflow through top of coil.
 Centralise the fan to ensure uniform airflow through the coil.

 Part of room is starved of ventilation air.
 Because of cross-flow ventilation air circulation and quality of ventilation is optimised.


Figure 6.3. - Inlet plenums
Ensure eccentric flow is not caused by inlet plenum.

**X Don’t**

With a single width fan the airflow takes a single turn to enter it; eccentric flow is created.

**✓ Do**

Selection of a double inlet fan improves airflow. Central positioning of the fan and plenum entry grille will also assist.

Figure 6.4. - The correct fan for the application

**X Don’t**

Don’t use a centrifugal blower if space is at a premium and avoid unnecessary bends.

**✓ Do**

Do consider the space saving advantages of an in-line fan. It can be centrifugal, mixed flow or axial, the selection being governed by the fan duty and noise level required.
6.0 GENERAL (Cont.)

Figure 6.5. - Motor Position
Position the motor of a belt-driven fan such that the belt leaving the motor pulley is uppermost as this will increase belt arc of contact.

![Do Not](image1)

Belt leaving motor pulley is less taut than upper length and the slight sag will reduce arc of contact on the drive pulley.

![Do](image2)

Arrangement with the maximum arc of contact of the drive pulley where energy is applied, reduces belt squeal at start-up and improves efficiency. Most important aspect is that the motor is accessible and to ensure belts are correctly tensioned and aligned.