

Information paper – 18

Types of blinds for offices

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Types of blinds for offices

This information paper provides an overview of the types of internal and external blinds than can be used in office buildings.

1. KEY CONSIDERATIONS WITH SELECTING BLINDS

There are many types of blinds available, from the cheap and ineffective vertical strip blinds to high performance daylight guidance systems. The key considerations in the selection of blinds include:

- How much daylight to allow through when down?
- How much adjustment do they provide?
- Do they cut out glare from direct sun?
- Can partial views out be maintained when the blinds are down?
- Do the blinds restrict air flow through openable windows?
- Are the blinds external, mid-pane or internal?
- Is automation (with manual override) an option?
- How easy are they to use, clean and maintain?




Figure 1 shows an example of how not to integrate blinds and openable windows. The blind even when not in use, is preventing the window from opening properly and, being the only source of ventilation to the room, this is leading to overheating.





Fig 1 How not to integrate blinds and open windows

2. TYPES OF BLINDS

Table 1 shows some typical types of blinds that can be used in office buildings.

Type	Comments	Image
Vertical strip blind (internal)	Cheapest blinds. Flap around when windows open. Reduce glare and direct sun on occupants but do little to reduce solar heat gain in the space.	
Roller blind (internal)	Fabrics have different shading factors and reflectivity. If too much light is transmitted then glare could still occur. ¹ Internal blinds reduce solar gain by reflecting some of the radiant energy back through the glazing. The amount depends on the blinds and the glass type. Guide wires are useful to stop blinds moving when windows are open. If the blind is full height it can block the air path through high level openable windows. <i>Image: Butterfield Innovation Centre in Luton. The blinds have guide wires.</i>	
Roller blind (external)	External blinds prevent solar energy entering the building and are therefore more effective than internal blinds. The blinds are usually motorised and can be controlled automatically (linked to weather station). Manual control to override automation should be provided to individual blinds. Blinds should retract in high winds to prevent damage. Access needs to be provided for maintenance. <i>Image: office in Stuttgart showing external venetians on left (recessed) and external roller fabric blinds on the right.</i>	

Type	Comments	Image
<p>Venetian (internal)</p>	<p>Commonly used in offices. Blade angles can be adjusted to control glare but still allow daylight to enter. Perforated blinds allow views through when down.</p> <p><i>Image: Daylight guidance blinds in Cundall Melbourne office. Blind on left has perforations to allow view out when closed. Upper blades set at different angle to reflect daylight on to the ceiling soffit. Each blind has its own control switch (circled) to raise up/down and adjust blade angles. Blinds are on timer control to retract at night.</i></p>	
<p>Venetian (interstitial)</p>	<p>The blind is incorporated into the glazing system and is sandwiched between the panes of glass. Ability to reduce solar gain is better than internal blind but less than external. Advantage is that the blinds do not restrict air flows with openable windows.</p> <p><i>Image: an openable window in Swedish hotel with an interstitial blind in the raised position. Note the integrated ventilation panel on the left allowing secure natural ventilation when the window is closed.</i></p>	
<p>Venetian (external)</p>	<p>External blinds need to have robust mechanisms and materials to withstand wind and weather. Ideally they are recessed into the façade to reduce exposure. Access for maintenance must also be provided. Above 4 to 6 storeys double facades are usually provided – refer below.</p> <p><i>Image: office in Stuttgart with full height glazing. External metal walkways also act as shading.</i></p>	




Type	Comments	Image
<p>Double facade</p>	<p>While external blinds can be exposed to the elements, often another layer of glass (double façade) is provided to provide protection from wind and allow access for maintenance. The cavity can be permanently open or can have louvres to close in winter (trap heat) and open in summer (ventilate heat). This approach can also assist with improving acoustic performance.</p> <p><i>Image: prototype for Wellcome Trust, London. The ventilation louvers are manually controlled – window cleaners open in summer and close in winter.</i></p>	
<p>Daylight guidance blinds (internal & external)</p>	<p>Lots of different profiles are available including daylight reflectance. These can have high and low level blades set at different angles to control glare/solar gain, while allowing daylight in at high level.</p> <p><i>Image: External blinds at 55 St Andrews Place, Melbourne. Each blind has a manual control switch to raise and lower the blind, and to adjust the blade angles. These blinds are similar to the internal blinds in the Cundall Melbourne office above.</i></p>	
<p>External shutters</p>	<p>Widely used on windows in Europe but rarely in the UK. The shutters have simple manual control inside or can be automated. They also provide additional security.</p> <p><i>Image: office in Stuttgart</i></p>	

Table 1 Typical types of internal and external blinds (photos by author and Cundall)

Notes

1. In the Southern Cross building on Exhibition Street in Melbourne, the original fabric blinds did not cut out enough light and occupants resorted to sticking sheets of paper inside the glass to cut out direct sunlight. <http://www.highbeam.com/doc/1G1-149276059.html> (accessed 29 July 2012). One of the tenants, the Department of Transport, in consultation with staff, retrofitted a double blind for the affected areas to alleviate this problem. Referenced from http://www.transport.vic.gov.au/__data/assets/pdf_file/0010/30979/DOT_AnnualReport_0708.pdf (accessed 29 July 2012).

The inevitable legal bit

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