

Briefing Notes:
Automatic Door Systems

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Automatic Doors.

The University has a large number of automatic doors which it is required to maintain. In order for the maintenance of this growing number of installations to be simplified the requirements set out below should be followed whenever possible.

If for any reason the designer considers that a requirement cannot be adhered to, it is imperative that a discussion takes place with the Estates and Facilities' team members that will be responsible for maintenance of the installation. All doors must be installed and Maintained to BS7036. BS EN 16005:2012 Incorporating corrigendum November 2013

Manufacturers

In order to keep operative maintenance costs down and limit the number of service level agreements required, doors should only be selected from the following manufacturers:

- DormaKaba Entrance Systems Ltd

The manufactures has a range of options available (sliding, folding, swing, concertina, revolving etc.) and the designer must ensure that the door type is suitable for the purpose required.

Size and arrangement of doors

- Where large openings are planned, designers should aim to limit the size of the automatic doors to standard ranges since the University preference is not for over sized doors due to the inherent maintenance difficulties these can involve.
- Where triple door sets are planned these should normally be of the swing type providing a single door for disabled and/or out of hours card controlled access and egress and double doors for general day time use.
- Draught lobbies should always be considered where automatic doors open into Reception Foyers, particularly with staffed Reception desks. In these cases careful thought will be needed over the spacing and type of door arrangements to prevent through draughts whilst giving unrestricted access and egress.

Robust construction

- Sizes of door stiles, rails and panels should be carefully selected to ensure the rigidity of the door within its opening to prevent forced entry. Doors with large glazed areas and narrow stiles and rails are considered susceptible. Similarly, door arrangements must be selected to counter possible lifting of sliding doors off their running gear to affect a forced entry into a building.
- Consideration should be given to gauge/thickness of metalwork construction to ensure robustness and rigidity with a preference towards industrial/commercial standards.

- Whenever possible consideration should be given to rebated door construction or use of cover plates over square meeting stiles to deter and prevent forced opening of doors.

Glazing and colour

- Laminated glass is preferred. The colour of glass and framework should be appropriate to the location and the University has no preferences.

Safety

- All external automatic doors, or internal automatic doors on escape routes, must be linked with local fire alarm systems so as to unlock on alarm. Swing doors must unlock and be available to be pushed open. Sliding doors must unlock and power and hold open.
- On a power outage all doors must operate the same as if in a fire condition
- Infra-red detectors must be fitted on all swing doors to detect obstructions in the swing path and halt swing.
- All automatic doors whether fully automatic or assisted automatic should have safety sensors inside and outside.
- All automatic doors fitted with electric locks must have a break glass adjacent to the door.
- All automatic doors that open inwards must have the door stops removed and replaced with a removable door stop in the event of personnel falling against the door and not allowing the door to be opened inwards, the removable door stop can be removed and the door can then be opened outwards.
- Sliding doors must include pocket screens and finger guards, swing doors must include finger guards.
- Approaches to swing doors should incorporate barriers, or other devices, to channel the route to the door and avoid collisions, the barrier size should be no smaller than the opening off the door and be of a height of 900mm for DDA purposes, for swing doors the barriers are to be 'F' Type steel tube with cable highway inside the tube for the provision for access control or DDA compliance.
- Glazed areas should have manifestations applied.
- Areas immediately inside and outside automatic doors should be level and wide enough to enable wheelchairs and trolleys to wait as doors open.

DDA

- All user operational equipment (push pads, card readers, emergency break glass units etc.) are to be suitably located to meet all DDA requirements.

Security

- Locks should be provided at the mid point of meeting stiles of sliding doors (claw lock) and at mid point of closing stiles on swing doors (dead bolt). These will be used in emergency situations only when all powered systems have failed. Locks should be designed to accept a half Euro cylinder to the external face of the door. University will supply a mastered cylinder.
- If frameless, glazed doors are proposed, the position and type of locks must be discussed before design proposals are signed off.
- During night mode, all automatic doors must be closed and automatically locked by a physical device i.e. not held shut by drive belt tension alone. This device must be able to respond to signals from fire alarm relays, emergency break glasses and card readers.
- A single “night lock” should be provided adjacent to the door set to allow Security personnel access as required. Automatic doors may be fitted with card entry systems and access from outside may be required to re-set internal control switches. The “night lock” should comprise a flush mounted switch controlled by a half Euro cylinder, to be provided by the University. Surface mounted devices should be avoided.
- Doors should be provided with a local internal control switch to determine operating mode (open, closed, out only, half open). Where switch is accessible to general public it should be key operated to provide anti tamper operation.
- All keys should be handed to University Security Services at handover.

G4S Fire & Security Access Control for Automatic Doors.

- The G4S Access Control System will provide 2 relays adjacent to the door set to provide:

Signal to switch from normal day mode to night mode.

Signal to open door from a valid card read when in the night mode.

(Relays provide volt-free change-over contacts and operation can be maintained or pulsed).

- Door locked status to be provided from the door manufacturer’s equipment in the form of a switch contact for use by G4S, with the connection point wired adjacent to the G4S signal relays. The status switch must be voltage-free and N.C. when doors are closed and locked.

- Doors should be arranged to lock when in the closed position, preferably at all times, but essentially when in night mode.
- Local emergency break-glass units provided by the manufacturer, or Group 4, must unlock doors for egress when activated. On activation, 'swing' type doors to be capable of being simply pushed opened manually, 'sliding' types to motor open on their emergency batteries. NB. Swing types may also be required to power open for compliance with DDA.
- Break-glass connections **MUST** act on the door locks directly in the case of swing and sliding doors, the latter **MUST** also drive to the open position.
- It is preferred that no electronic processing is used via the door controllers for the above actions.
- Activation of the break-glass must also present an alarm signal to the G4S system. This will be a voltage free, normally closed contact, opening on alarm condition, with the connection point wired adjacent to the G4S signal relays.

G4S relay, 1 Day/Night

- The G4S Access Control system, via a scheduled time command, will change the state of, or pulse relay 1.
- Relay 1 will be de-energised during day mode and energised during night mode for change state mode or, pulse at the start and the end of the scheduled time command, manufacturer to state the pulse duration time required.
- Day mode to place the automatic door sets to operate under their own radar detectors and all other associated control devices i.e. push pads.
- Night mode to ignore all normal day mode sensing devices and the doors must only open for personnel access/egress on receipt of a signal from the G4S relay 2.

G4S relay 2, valid card read

- During the night mode, as set by relay 1, a valid card read will energise relay 2 for a period of 5 seconds.
- Relay 2 will be normally de-energised, energising for 5 seconds only after receipt of a valid card read.
- Valid card read to unlock and open the door set for personnel entry/egress.
Note: This can be left active during day mode as it is unnecessary to block when the local radar units are active.

Notes:

- Emergency break-glass units and fire alarm interlocks to be active at all times.

- During night mode, the door face safety detection must be isolated to prevent unauthorized opening, but engaged when the door is in motion under a valid card entry/exit request.
- During night mode, doors must be closed, locked and monitored for being locked in the closed position.
- Automatic door controllers are to provide the G4S access system with a warning that power has failed to the door. This to be a simple volt-free contact normally-closed, opening on alarm condition with the connection point wired adjacent to the G4 signal relays.
- External automatic sliding doors are to be provided with sufficient battery back-up to keep the doors operational for not less than one hour on power failure, to allow alternative security arrangements to be made.
- All selector switches located in public spaces are to be key-operated types to provide anti-tamper facilities.
- At installation, it is imperative that the door manufacturer/installer is present with G4S when devices are wired up and tested and University representative for sign off.

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