White Paper

Specification considerations for education buildings: doors and ironmongery

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Synopsis

The Department for Education has admitted that approximately half a billion pounds will be taken from the refurbishment of school buildings[1] to fund the £1.3billion promised to core school funding after the 2017 election[2].

The collapse of education services provider Carillion has also made a significant impact on numerous schools and universities throughout the UK; which only adds to the uncertainty surrounding the future of school building investment in 2018 and beyond.

In a procurement environment with multiple stakeholders where funding is tightly controlled, education buildings have to be flexible and future-proofed, provide cost certainty and manage risk through best practices.

This is why contractors, architects, local education authorities, facilities managers and head teachers are often pulled in very different directions when it comes to product specification for education buildings.

In this paper, we will cover the various standards that are relevant when specifying doors and ironmongery for education projects, including those relating to accessibility and usability. We will also cover whole life costing implications and why these considerations are imperative for a successful specification.

The paper will go on to discuss how architects and contractors within the education sector can contribute to a better built environment by factoring in health and wellbeing influencers. Lastly, we will share our findings from a recent case study featuring a full-scale build of a two-form entry primary school.

[1] https://www.theguardian.com/education/2017/jul/17/justine-greening-raids-free-schools-budget-for-education-bailout

[2] https://www.gov.uk/government/news/13bn-for-core-schools-budget-delivers-rise-in-per-pupil-funding

1. Standards: Accessibility and usability

The Building Regulations 2010 apply to all education buildings in England and Wales, including nurseries, schools and universities. They set standards which are not only to ensure the safety and health of people in or around buildings, but also cover energy conservation and accessibility. They apply to the construction of new schools and to many alterations of, and improvements to, existing school buildings.

A.) Pupils with special educational needs

The Equality Act 2010 requires all schools to prepare and implement an accessibility strategy to improve the physical environment of the school for pupils with disabilities and special educational needs (SEN). This should include consideration of their particular health and safety needs on the school premises and how these can be met.

Creating the correct level of accessibility and an efficient flow through a building for staff and children is a key priority when it comes to meeting these requirements; however, this must be balanced with the need to provide a safe learning environment.

That is why fully compliant doorsets that help manage traffic flow and access are integral for any education building looking to meet the requirements within the Equality Act 2010.

Doorsets can also be specified in order to adhere to the needs of pupils with disabilities and special educational needs. For example, colour contrast between the edge of the door and the door surface can help to achieve an inclusive environment, in line with the latest legislation and guidelines such as Approved Document M of The Building Regulations 2000 and BS8300:2009+A1:2010.

B.) Health, safety and welfare

There are a number of regulations, namely ISS Regulation 23C and SPRs Regulation 6, that specifically focus on maintaining school premises so that the health, safety and welfare needs of pupils are safeguarded.

One of the biggest challenges in all schools is to prioritise safety whilst still providing a comfortable learning and teaching environment for both pupils and staff.

With approximately 30,000 children trapping their fingers in doors each year and more than 1,500 of them needing surgery from such injuries[3], it is imperative that doors and ironmongery for education buildings are correctly specified, in order to mitigate this risk.

Solutions such as ASSA finger guards protect schoolchildren from accidentally trapping their fingers in doors and ASSA ABLOY's DC700G-CM Cam-Motion® technology and integrated Close-Motion® door closers deliver a low opening force whilst still providing sufficient closing forces to satisfy fire legislation.

Securing gates and access points around the site, plus ensuring any visitors register when entering, are just two basic but effective methods of creating a safe learning environment for staff and children.

One way of achieving this is by installing products such as ASSA ABLOY's Aperio® wireless access control which can be integrated to a new or existing access control system. Meeting BS EN 179 and BS EN 1125 standards, the locks also reduce the risk of lost credentials.

The system's ability to update who is able to access a room online and in real-time is hugely advantageous within education buildings, where users need to respond quickly to ensure security measures are implemented as soon as possible – providing peace of mind for staff and pupils alike.

As safety and security go hand-in-hand, it is often necessary to utilise high security ironmongery solutions in education settings. There are many options on the market, with specific products for classrooms now available.

ASSA Classroom Locks, for example, have been specifically designed to meet the needs of schools. The Modular 500/9 and Evolution 624 lockcases provide a high degree of security and automatic locking to reduce the risk of theft, vandalism or assault, while also ensuring safety through the provision of a single-action escape function at all times.

"Approximately 30,000 children trap their fingers in doors each year and more than 1,500 of them need surgery from such injuries."

[3] http://www.bbc.co.uk/news/health-41583836

C.) Fire safety

The Regulatory Reform (Fire Safety) Order 2005 requires schools to undertake risk assessments to identify the general fire precautions needed to safeguard the safety of occupants in case of fire, including their safe means of escape.

These will include ensuring procedures are in place to reduce the likelihood of fire, maintaining fire detection and alarm systems, and familiarising staff and pupils with emergency evacuation procedures.

Education buildings can present highly specific requirements for fire doorsets. In fact, legislation and building regulations surrounding fire doors for schools is wide and varied.

Correct specification of fire doors within nurseries, schools and universities is vital, not only from a liability perspective, but because their effectiveness can be the difference between life and death for pupils, visitors and staff.

It is recommended to source certified doorsets as complete systems. However, should the door and door components come from separate suppliers, then there should be an audit trail to prove compliance and track performance at every stage.

Testing and certification of all products that can impact on fire safety should be mandatory and through independent, third party testing, so that the process can be audited and maintained to the highest standards.

Even if fire doors are specified, designed, manufactured and installed correctly, they will need to be inspected and maintained regularly, especially within educations settings where doorsets are highly likely to suffer from constant use.

This is why it's important to seek advice from fire door specialist manufacturers such as ASSA ABLOY.

Fire doors within education settings

A certified fire door will be a sturdy and reliable piece of equipment. However, poor maintenance, vandalism and even the natural shifting and settling of an education building over time can cause them to become ineffective.

If a fire door leaves large gaps around the doorway, is damaged or mistreated, it completely loses its effectiveness as a fire prevention tool. Some of the most common issues include:

Gaps

Incorrect ironmongery may result in a sizeable gap underneath or around the fire door. If this is the case, it may not be able to prevent fire or smoke spreading.

Damaged door closers

Damaged door closers prevent fire doors from shutting properly, meaning they cannot adequately perform their role.

Damaged seals

If the seal around the door is no longer intact, the door may not be able to contain smoke or fire to the appropriate standard.

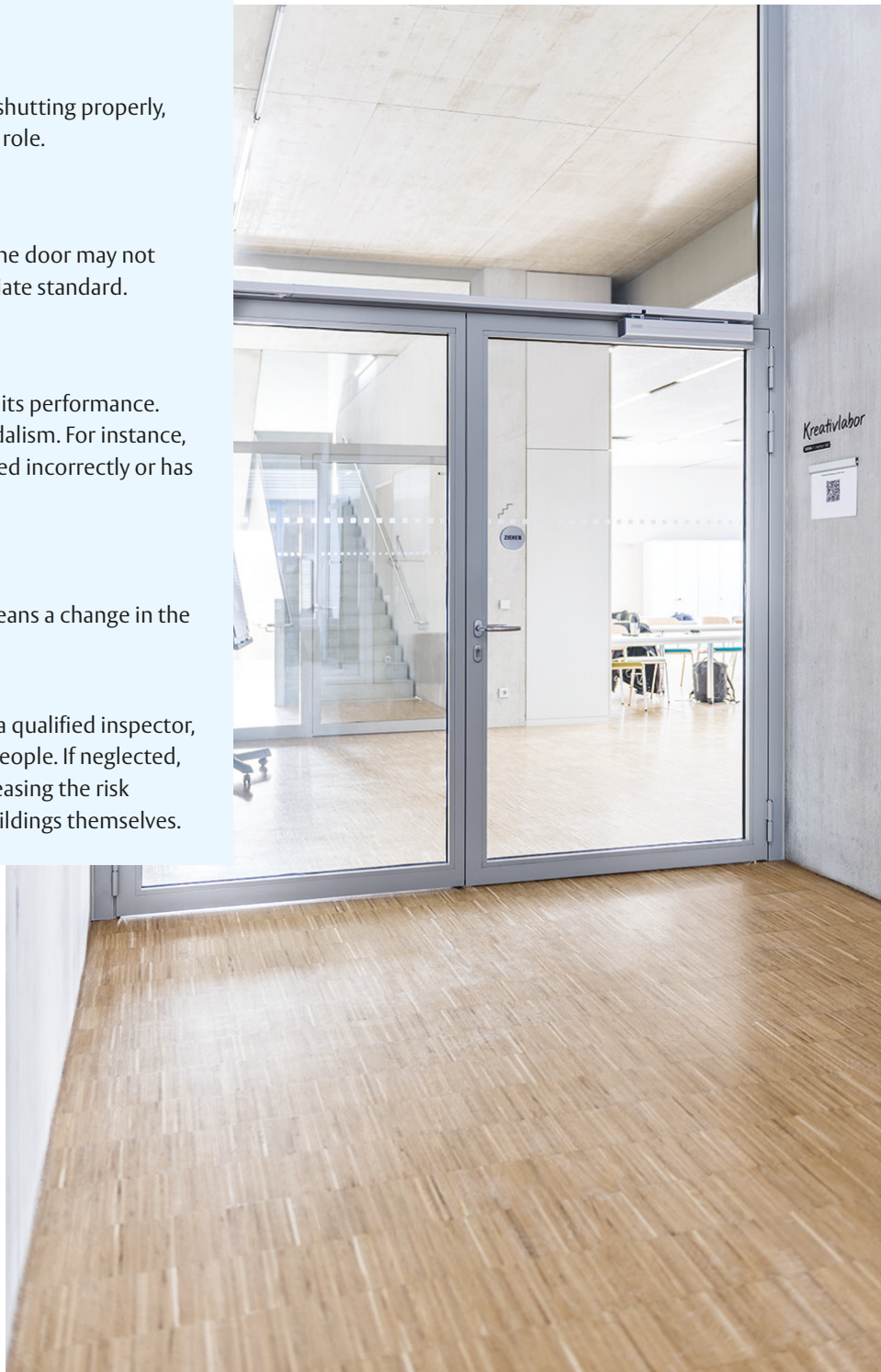
Damage or splits

Any damage sustained by the door could affect its performance. This can be caused by later work, as well as vandalism. For instance, fire doors often fail because a lock has been fitted incorrectly or has been put it in the wrong lock case.

Wear and tear

Building movement and wear and tear often means a change in the position of doors, leading to open gaps.

All of the above issues can be easily spotted by a qualified inspector, and then quickly corrected by qualified tradespeople. If neglected, they may cause fire control systems to fail, increasing the risk to both pupils and staff, as well as education buildings themselves.



2. Whole life costing: Specifying to reduce additional costs

Whole life costing has made it more important for specifiers to consider long-term maintenance during the very early design process.

Specification tools such as BIM for example, allow architects to efficiently share information regarding whole life costing with facilities managers, so their design intent is easily transferable.

Facilities managers and head teachers can use whole life costing to help them plan their maintenance strategy and budgets, whilst pupils and staff will benefit by being able to use their place of study/work without being disrupted by unplanned maintenance or replacement works.

A.) Impact of intelligent product design

Products need to tick the box in terms of quality, reliability and performance; reducing lifecycle costs and enabling users to fit the same proven technologies again and again.

It is safe to say that the most successful whole life costing examples begin at the design stage. If a product is designed well and correctly specified, it will serve its purpose effectively, reducing the need for call-backs.

This continues with product performance. Although it is important to ensure costings are to budget, this should never be at the detriment of quality.

With 80% of the lifecycle costs of doorsets and ironmongery comprising maintenance and replacement, significant sums of education funding could be lost if incorrect or poor-quality products are specified at design stage.

This only strengthens the argument for working with a manufacturer who has a detailed understanding of education specifications and who offer fit-for-purpose solutions and impressive product performance guarantees.

B.) Product testing and ongoing maintenance

One of the most important factors to consider when specifying products for education settings is to acknowledge the various stresses that each component may be subjected to over its lifecycle.

Schools in particular are often exposed to misuse or abuse to doors and ironmongery, and this provides a strong case for rigorous product testing at the manufacturing stage.

Similarly, education buildings are subjected to high frequency use and a high flow of traffic that results in general wear and tear to building components. Therefore, specifying products that are supplied in an appropriate material or colour can make them easier to maintain.

One such example is our argument for laminate faced doorsets rather than painted. Although they would initially cost less, painted doors will require constant repainting, putting strain on facilities managers and maintenance teams, which adds to the overall lifecycle cost, especially when you consider how many doorsets there are within a typical school building.

This is just one example of how we work alongside education specifiers to ensure that the products and finishes chosen are right for each individual project.

C.) Building Information Modelling (BIM)

Since 2016 all centrally procured public sector projects have required the implementation of BIM at Level 2. It is true that a complete BIM model supports lifecycle maintenance of a building and will reduce costs for the end user.

Through our integration with BIM and sector specific product families, our Specification team is able to accommodate any building design, offering performance solutions to deliver high quality designed architectural ironmongery, to cutting edge access control, through to high performance steel or timber doorsets.

3. Health and wellbeing: Contributing to a better environment

A.) Intelligent building design

Over the last five years there has been numerous studies into the impact of building and product on pupils and staff within education settings.

One such study by Salford University found that well-designed classrooms could improve pupil performance by 25%.[4]

Furthermore, the Workplace (Health, Safety and Welfare) Regulations of 1992 aim to ensure that education settings will meet the health, safety and welfare needs of school staff, and cover a range of requirements for factors such as heating, ventilation, cleanliness, workstations, seating and welfare facilities.

Unwanted noise is a big issue in learning environments, and acoustics is often one of the most difficult balancing acts for schools and universities. Studies into the impact of high noise levels in educational facilities have shown that poor acoustics can have a detrimental effect on learning.

Conversations and lessons need to be heard clearly, so managing sound-transfer between classrooms is integral. That is why correct specification of doorsets between rooms and teaching areas is so important for today's architects and contractors.

Let us not forget the impact of good aesthetics to a building's occupants. With doorsets playing an integral part to the make-up of a school setting, internally and externally, the overall look of the finished design will impact strongly on the building as a whole.

There are a huge array of materials and finishes for doors and hardware on the market, so it is invaluable to be able to sit down with a manufacturer and discuss requirements in order to decide on the most appropriate products for your specific education project.

[4] 'The impact of classroom design on pupils' learning: final results of a holistic, multi-level analysis' http://usir.salford.ac.uk/33995/1/BAE-D-14-01430R1_Schools_paper_as_accepted.pdf

B.) Increasing sustainability within education buildings

With many education builds requiring BREEAM excellent rating in 2018 and beyond, it is important for architects and contractors to have a good understanding of how to integrate products in a building whilst still meeting the requirements of an energy efficient building.

ASSA ABLOY'S Specification team regularly recommend an appropriate solution to achieve a BREEAM excellent rating through the EPDs and WLC data associated within the products we supply; meaning we are able to provide a guaranteed performance for the lifecycle of the building.

Our BIM capabilities enable us to calculate the long-term maintenance and overall performance of a building, helping reduce any anticipated risks for architects and contractors.

4. Case study: Silverstone Primary School

The Silverstone CE Primary School construction project was an amalgamation of the existing Infant and Junior Schools, built on a site at the edge of Silverstone village.

The finished building was to be aesthetically striking as well as in keeping with the school's surroundings, and products specified had to be fully compliant and tailored to the needs of the pupils and staff that would be using the building daily.

Working alongside Northamptonshire County Council, local firm pHp Architects and contractor Lakehouse Construction, the UK Specification team specified 92 ASSA ABLOY laminate faced timber doorsets from the SMARTec™ range, complete with redwood frames and dark grey PVC edges, making them easy to clean and to help conceal scuffs from daily use.

The doorsets were complemented by a full ironmongery suite of ASSA 3228 ZP hinges, ASSA ABLOY DC200 Rack & Pinion Door Closers, UNION HD72 Locks, UNION J1000 door furniture and ASSA finger guards, which prevent pupils' fingers from being trapped in closing doors.

The specification also included ASSA's P600 cylinders for internal and external doors as well as external gates, providing the school with one masterkey system and permitting access to authorised personnel only.

"ASSA ABLOY UK Specification not only supplied high quality and fit-for-purpose products, but they also provided a full consultancy service, which took into account factors such as pupil comfort, flow of traffic around the school, as well as the need for staff to access certain areas of the building efficiently and securely. We are delighted with the finished result."

Chris Wayman, Associate for pHp Architects

To view ASSA ABLOY'S UK Specification capability within Education sector visit **https://bit.ly/2N1kyJc**

Conclusion

With varying pressures faced by today's architects, contractors and end users within the education sector, it is safe to say that we have to work together to be as streamlined as possible in order to deliver successful projects.

With a wealth of experience supporting specifications within the education industry, ASSA ABLOY'S UK Specification team works tirelessly to ensure the right solution is provided for each individual project, which is then performance guaranteed for up to 20 years. This provides complete peace of mind and can save a school thousands of pounds in replacement and maintenance costs.

The team prioritises developing bespoke solutions with the end user in mind and presents one point of contact to help cover all elements of the doorset design, scheduling and flow around the building.

With a single source of supply, our Specification team also ensures each project runs on schedule and to budget. The team advises on whole life costing as well as sustainability considerations, with the financial stability and backing of a global leader.

Overall, the support and service the UK Specification team can provide mitigates the risk and hassle associated with demanding and publicly funded education builds.

The ASSA ABLOY Group is the global leader in access solutions. Every day we help people feel safe, secure and experience a more open world.

ASSA ABLOY
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