



The News Magazine From Sapphire





### Editor's Overview

#### **Editor**

Hello I'm Mary, I'd love to hear your ideas for future content, or questions you would like our experts to answer in future issues. You can email me at mary.mccollum@sapphire.eu.com

As the effects of the pandemic continue to shape our working and social lives, we take a look forward to the future of construction postpandemic. We consider the lessons to be learnt and new methods to embrace to improve efficiency and thread' traceable (p.7) and traceable (p.7) and the discontinuation of the pandemic working and thread' traceable (p.7) and the discontinuation of the pandemic with the discontinuation of the pandemic with the discontinuation of the pandemic working and thread' traceable (p.7) and the pandemic working and the pandemic working the pandemic worki

We discussed the digital 'golden thread' and the future of digital traceability with George Stevenson (p.7) and the digital revolution spurred by the pandemic (p.5).

We discussed the future of construction with MD Luke Haughton and what he sees as the next step in improving cost, resources, and time efficiency in residential construction (p.12). We also provide an insight into our laminate glass whitepaper (p.9) and the findings of our recent balcony fire test.

While the current moment is uncertain in many ways, it also offers the opportunity to reinvent the way we go about residential construction projects and spring into the next era of UK construction.

Mary Mc Collum

Mary McCollum



safeguard against future challenges.

#### **Event Coordinator**

Hello I'm Kelly, we run regular industry roundtable events and CPD's. To join an event or to book a balcony design, balcony fires or drainage CPD, email me at kelly.thompson@sapphire.eu.com

Kelly Thompson

Kelly Thompson

### Read more...

Read more about our virtual event series in Q3 on page 17.

Unlock virtual events the recordings at www.resi.build

### **Events**



#### Hindsight

Digital: An Accelerator to Construction

15th July 2020

Get Residential Right in Dublin

**12th August 2020** 

The Future of Construction Post-Pandemic

30th September 2020



#### **Foresight**

### Fire & the Golden Thread 11th November

We'll be hearing from a range of speakers on how the 'golden thread' as called for in the Hackitt report can help to address fire risk in high-rise residential buildings.

### The Impact of COVID in 2020 & Making 2021 a Success 9th December

We'll be looking back on the tumultuous events of 2020 and hearing from a range of experts on what lessons can be learnt as we enter 2021.

Open CPDs the first Tuesday of every month **Book at www.resi.build** 

### Industry Insight



of construction managers confirmed companies have rolled out **new** technologies during lockdown



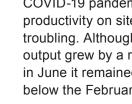
#### **Technical Advice**

Hello I'm Nick, I keep up to date with latest industry changes and regulations, to guide clients with technical design at early design stages of projects, email me at nick.haughton@sapphire.eu.com

Vick Haughton

Nick Haughton





However, while some developers report a 50% reduction in workforce as a result of social distancing, they are also experiencing only a 30% reduction in output. One efficiency is the way the times have altered the way work is carried out on site. Fewer planning and preparation, streamlined working and the adoption of digital tools (see page 5).

Inevitably, the impact of the COVID-19 pandemic on productivity on site has been troubling. Although construction output grew by a record 23.5% in June it remained 24.8% below the February 2020 level.

Could COVID-19 Improve Site

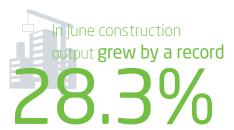
Productivity Long-Term?

of the reasons for this improved labourers on site means greater These exceptional times call for exceptional measures and have challenged the conventional ways of working. As we look ahead to the future of construction, we have the opportunity to take these lessons learnt and become more resilient, efficient and productive. COVID-19 is unlikely to be the last hurdle faced by construction as concerns remain about labour shortages, supply chain efficiency and the ongoing housing crisis.

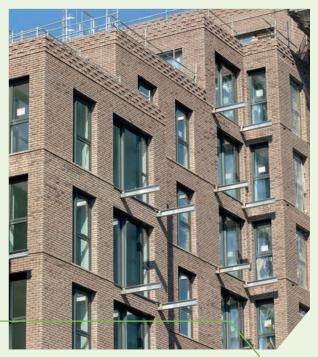
Turner & Townsend have stated that the solution to the inefficiency and poor planning of the past could lie in MMC. The consultants mitigate the impact of COVID-19 and beyond by "embracing digital platforms, offsite construction methods" and reduce the impact on resources by "taking processes off site".



of those surveyed felt working with a single digital platform will play a key role in the future of construction



### **INSIGHT SPOTLIGHT**



#### **Woodberry Down Phase 2**

Glide-On™ inset balconies progressing up the façade at Tottenham Hale.



#### Elephant Park H4 Blocks E & F

Blocks E and F at Elephant Park H4, one block with Sapphire balconies, the other waiting for install.



#### **Nantly House**

Vertical bar Glide-On™ balconies at Nantly House.



#### Imperial 2, Clockhouse

Anchors cast-in at Imperial 2, Clockhouse in Bromley-By-Bow.

### New Planning Rules Announced

The government has announced proposals to overhaul the planning system in a new white paper with the aim to speed up the planning process and bring greater clarity.

The proposals put forward in the Planning for the Future white paper include removing local authorities from determining many individual applications, set up a rules-based

system and fast tracking for 'beautiful' schemes. It will also mandate that all homes will be carbon neutral by 2050 and set a fixed proportion of the value of developments for affordable housing.

These plans are set to shake up the planning process and have drawn both praise and criticism from across the industry.



### COVID-19 Speeds Up Construction's Digital Revolution

The COVID-19 pandemic has brought a range of unforeseen challenges to the industry and life as we know it. With those challenges a race to find solutions and maintain productivity has also pushed the industry to consider

new ways of working and new tools to use.

According to a survey of construction managers by Procore Technologies, 66% of companies have rolled out new technologies during lockdown.

As a result, 94% said they saw an improvement in the way their teams work.

Could these unexpected times have accelerated construction's digital revolution with long lasting effect?

## Sanctions Threatened for Flouting Building Regulations

A new draft bill recently published by the government lays out the details of how, through new building regulations, they plan to prevent another Grenfell disaster. The bill confirms the appointment of a new Building Safety Regulator which plans to regulate all residential buildings over 18M, reducing local authority building control.

Another change is the implementation of stronger sanctions for flouting regulations, including unlimited fines and up to 2 years in prison. The bill also allows the secretary of state to apply these new rules to other building types in the future. Hackitt gave the bill her seal of approval saying "it meets the ambitions and recommendations set out in my review".

The bill will be open to comment before being presented to parliament in the autumn but may not take effect for another 4 years.





Our guiding principle is "innovation to prosper the community." Part of prospering the community is our involvement in charity work through both volunteering and fundraising. We're always on the look out for new causes and new challenges to support those providing vital services and relief to people in need.



In July we raised £6,380 for our local branch of Mind, the mental health charity, through our Miles for Mind challenge. Sapphire staff racked up the miles through running, rowing and bike riding and their fundraising was boosted x10 by Sapphire.



In August and September, we set our sights on fundraising for the MS Society, a cause close to the hearts of many at Sapphire. Staff took on a variety of physical challenges raising £5025\* to help continue their incredible work.

\*correct on 21/09/2020

## The Digital Golden Thread

The 'golden thread' is a term used for an up-to-date live record of data used on a project. It is a concept identified in the Hackett Report as being particularly important in residential construction. But what does that mean?

There is a gulf between the design and construction companies on a building project and the operations managers who take over the end-product. This can occur when information isn't properly defined at the outset because designers, contractors and manufacturers don't have a specific brief.

#### Creating the building blocks to bridge the gap

Seeking to bridge that gap starts with standard data templates. These define what information is needed from product manufacturers. They then create the right type of data from the product information passed on to them. All this is brought to the people involved by digital tools which communicate what is needed from the outset.

As the information is in a computer-readable form, it can automatically be tested to make sure what was requested is provided. You then have the right data to produce the asset information model, which in turn is given to the client.

#### BIM's part in the process

There is a lot of information you can put into a BIM model, the challenge is where to obtain it. In most cases BIM is used up to stage 4, but then the construction teams may choose to use spreadsheets, PDFs

and drawings to record the information. This results in a pause in digital data at the construction stage and the possibility of paperwork getting lost, being rewritten or overwritten.

As a result of these information gaps, retrospective surveys must be carried out to find out what has gone into a newly constructed building, so the asset management team can maintain it.

The way to address these issues is to create standard digital libraries of information to make it easier to provide what is needed. Standard data templates for requirements, products used, solutions and procedures can be created and stored for everyone to access. This provides the base of information that feeds into the applications being used during construction.

#### The foundations of the golden thread

A successful process starts with the core information about the specification. The information is then digitised so it can be used during the CDM process which can be co-ordinated and checked throughout every stage.

By having standard libraries, we can automatically test to make sure the information requested and required has been provided. All this eradicates duplication and possible loss of information.

George Stevenson, Chair of BIM4Housing and Managing Director of Active Plan.



Events like today's are key for promoting key issues that are on the industry's agenda.

This event was very good, very well organised, very slick.

Very insightful event, highly recommended to all





Thought Leader Industry Insights

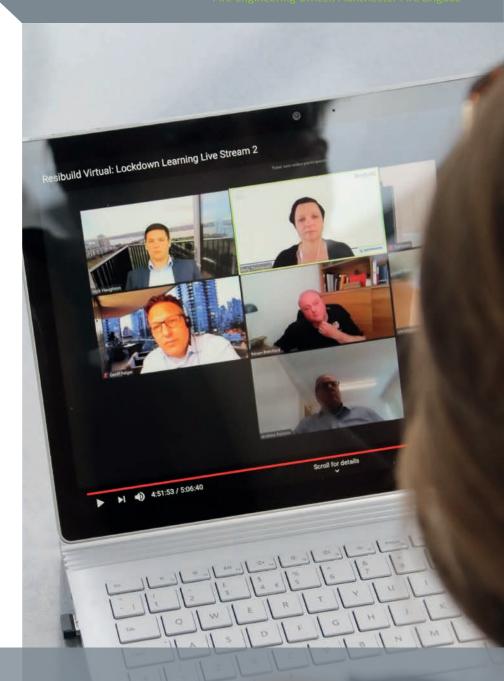


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# Is Laminate Glass a Fire Risk on High-Rise Buildings?

In response to the Government's consultation on laminate glass we set out to research how laminate glass compares to monolithic and what the industry thinks of the ban. While there are a range of factors to consider when discussing the best choice for balcony balustrades, the Combustible Cladding Ban included laminate glass on the grounds of fire safety.

We carried out a test to see if laminate glass would add to the fire load in the event of a balcony fire. We furnished a balcony with fire-resistant wicker furniture and privacy screens with balustrades featuring panels of clear laminate glass, obscured laminate glass and monolithic to see how they each performed.

In addition we gathered industry opinions, interviewed fire investigators and fire brigades on the causes of fires, researched balcony fires in the press and conducted interlayer combustibility testing at our own facilities in Reading.

The detailed findings from the balcony fire test and other research were then compiled and presented in our whitepaper which is now available upon request. Contact us at

sales@sapphire.eu.com



Request your copy of our laminate glass whitepaper at www.sapphire.eu.com/knowledge/fire-safety/laminate-whitepaper/



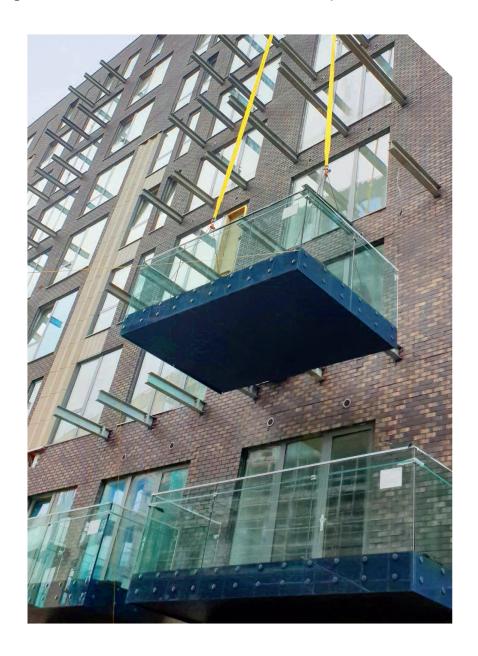
# Glide-On<sup>™</sup> Wows at Light Gauge Steel Framed Development

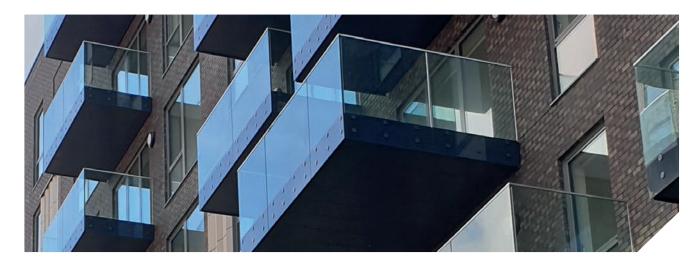
The team working on Brent House, a light gauge steel development in Wembley, were wowed by the speed of install of Glide-On™ modular balconies. The project director remarked "I couldn't believe it until I saw it, we installed 15-18 per day. You can't put a value on that speed and building on site wouldn't be able to compete".

Brent House is a vibrant development from Henley Homes just minutes from Wembley Stadium, providing 248 apartments with 234 balconies to the nation's capital. The site was previously occupied by a 1960's office building used as a local council office. Now, the plot situated a stone throw away from Wembley Stadium and the underground is home to hundreds of residents and 6,000 sq. ft of retail space.

"from a programme perspective it was great, [traditional balcony methods] wouldn't be able to compete with 15-18 a day"

The project was developed using modern methods of construction from our modular balconies to the light-gauge steel frame. The design of some of the balconies also featured a very deep projection of 2.5 metres. These factors brought the challenge of





ensuring the frame could adequately support the balcony method chosen.

A key concern for the architect with the light-gauge steel frame was the weight of traditional balconies. Our aluminium Glide-On™ solution is half the weight of its steel alternative, meaning the load on the frame was dramatically reduced. This was even more important due to the large projection of some of the balconies which enable residents to make the most of their outside space.

To ensure optimum rigidity the design team crafted a bolted connection to secure the balconies directly to the light gauge steel frame. This was combines with a

1-piece galvanised steel arm to allow for the quick and easy install of the Glide-On™ balconies. The project director was so impressed by the Glide-On™ system he said "from a programme perspective it was great, [traditional balcony methods] wouldn't be able to compete with 15-18 a day".

#### "...time is the biggest thing you can't put a value on that"

Unforeseen delays on site meant the delivery of the balconies had to be delayed by over a year. This could have posed a significant challenge with traditional balcony methods

as the materials would have been stored on site, taking up valuable space. However, our offsite manufactured balconies were completed ahead of the agreed date and safely stored until they were needed on site. The site team were able to simply call the balconies for install when it suited the programme.

When asked about how Glide-On™ compares to traditional methods the project director said. "the finish of the balconies is good, time is the biggest thing you can't put a value on that. Safety and costs are better and there's no need for scaffold which makes the building look finished a lot sooner".



### Key Stats

Architect: Stephen Davy

**Peter Smith Architects** 

Contractor: Henley Homes

Installer: McKean

**Developments** 

Balconies: 234 Cassettes®

Storeys: 7-10

Location: Wembley, London

# Ask The Expert

At Sapphire we've been focussed on refining balcony solutions to deliver improved quality, speed of install and rigidity. A key component in improving the efficiency of balcony design, production and delivery is increasing standardisation. Standardisation comes with a range of benefits which we discussed with Sapphire MD, Luke Haughton.



#### Luke Haughton

Luke joined Sapphire in 2006 and has progressed to his position as Managing Director gaining expertise and insight along the way. He has a wealth of experience in building strong and lasting relationships with all positions through most of the UK's top housebuilders and developers.



# Q: What does standardisation really mean in relation to balconies?

A: Standardisation does not mean the loss of variety or features but rather the reduction in balcony types to be as efficient as possible with materials, manufacture, and logistics.

For example, having a single balcony size on a project may seem ideal from a manufacturing perspective, but can make for very inefficient logistics. Alternatively, 3-5 balcony types with a few different sizes not only reduces cost and complications in manufacture, it also allows balconies to be 'nested' for more efficient delivery.

### Q: How does standardisation impact project costs?

A: Cost reduction doesn't have to mean sacrificing important features in order to hit budgets. By being aware of where costs escalate in design, and by embracing standard sizing and repetition where practical, costs can be clinically cut whilst still achieving a high-quality end product.

The higher the number of variations the higher the cost per balcony as additional types add to the design, manufacture and logistical expenses. By reducing balcony types while striking the balance with desirable features and some variety, costs can be cut without compromising on the vision.

#### Q: How can standardisation reduce waste?

Waste reduction helps keep material costs lower while also improving the speed and efficiency of manufacture.

One of the ways standardisation can reduce waste is by designing the balcony projection to work to whole deck board modules, avoiding the need to cut individual boards. This eliminates the need to dispose of excess decking while streamlining the manufacture of the balconies. This same idea can be applied to other elements of the balcony, for example sticking to standard 400mm Cassettes® reduces the need to cut the aluminium panels to a bespoke size.

### Q: What are some hidden costs which are often overlooked in design?

#### Interfaces Α.

Simply put, the less interfacing with other parts of the building, the more cost, design and time savings there are. Avoiding interfacing like extractor vents fitting within the Cassette® avoids the need for additional design work and works on site reducing costs and programme time.

#### Drainage

Downpipes and gutters for drainage must be non-combustible which makes them a costly element to high-rise design. You also need deeper balconies to accommodate them and double soffits to hide connections to pipes. They also require ongoing maintenance.

Opting instead for controlled drainage through sloped soffits reduces the need for interfacing while managing water in line with NHBC requirements.

#### Volume

Small changes add up to big savings on high rise buildings. The higher the number of balconies on a project the greater the impact of standardisation on cost and waste.

#### Crane use

Greater variation means more complex installation and interfacing with other trades, all adding to install time and crane hire cost. The faster the install of balconies the sooner the crane can be used elsewhere on site or removed entirely.



# Modular Balconies a Game Changer at Eastlands E05

Eastlands E05 is one phase of a substantial development of Wembley Park surrounding Wembley Stadium. Due to the project's prominent location in the capital access to the site was strictly controlled with time slots for deliveries and minimal storage space. Sapphire's offsite manufactured modular balconies were essential to maintaining the project programme and avoiding costly delays.

Wembley Park is an 85 acre development by Quintain comprising of an astounding 8,400 new homes, a 7 acre park and extensive office and retail space totalling 8.8 million sq ft. Wembley Park is set to be an exceptional place to live with bustling shops and venues and, of course, the stadium right on the doorstep.

Given the central location and proximity to the stadium there was extremely limited storage space on site and strict security procedures for deliveries. The lack of space on site meant

traditional balcony methods were not suitable and offsite production was essential.

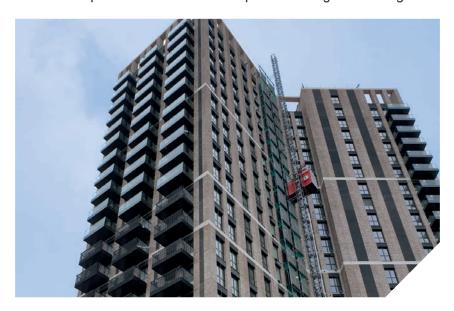
"The lack of space on site meant traditional balcony methods were not suitable and offsite production was essential."

Delivery timeslots had to be booked ahead of time for lorries to gain access to the holding area. This required precise timings for our logistics

team and working closely with drivers and site to ensure deliveries ran smoothly. Thanks to the careful monitoring of lorries by our logistics team deliveries were well coordinated with the site team and other trades, ensuring the crane was available for installing the Glide-On™ balconies.

One of the ways the logistics and design team worked together to ensure smooth deliveries to site was by redesigning our double stacking trailers. Eastlands E05 required 444 balconies which were all the same size, meaning they could not be 'nested' together to reduce the number of loads. Instead, the double stacking trailer was carefully redesigned to allow for twice as many balconies to be transported per load while ensuring they remained safe and secure en route.

This innovative solution not only met the logistical needs of E05 and other projects but also cut logistical costs and emissions in half.



Upon arrival the balconies were immediately lifted from the lorries and installed directly on to the building for a quick and efficient install using our Remote Locking Device.

"the double stacking trailer was carefully redesigned to allow for twice as many balconies to be transported per load"

Eastlands E05 also featured precast panels from Techrete which included preinstalled windows. While precast panels bring a host of benefits, particularly for programme

speeds, they also require consideration from the anchor design stage.

To guarantee the rigidity of the balconies and facilitate a quick install a unique socket stub was designed to be fitted between the precast panels. This meant the stubs had to be designed in close coordination with Techrete to an exact specification with strict quality control. In addition, the stubs were manufactured to be installed in line with the installation of the panels. As each panel was positioned and secured, the stubs would be installed into the awaiting slots before the next panel secured them in place.

The use of MMC at Eastlands E05, from modular balconies to precast panels, enabled the challenges of the site location to be overcome without compromising on quality or efficiency.

#### **Key Stats**

Architect: **Broadway Malyan** 

**Architects** 

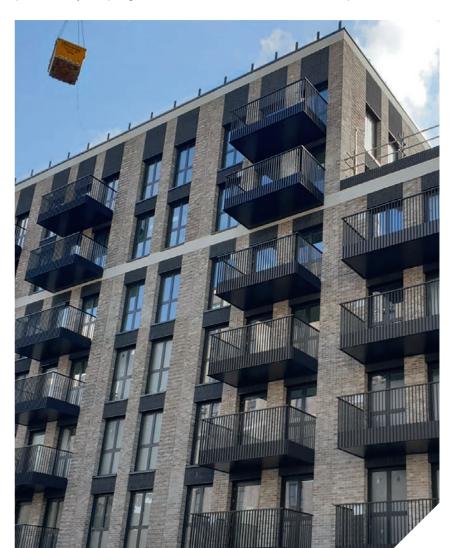
Contractor: John Sisk & Son Limited

Installer: Dantaaq

Balconies: 444 Cassettes®

Storeys: 21

Location: Wembley, London







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## Educating the Industry in Q3

This quarter we continued our Resibuild livestream events series to tackle the key topics of interest challenging the industry. We looked at the future of digitisation, the housing crisis rocking Dublin and how the COVID-19 pandemic may transform UK construction for years to come.

### An Accelerator to Construction

#### 15th July

Digital tools have the potential to exponentially accelerate the productivity of residential construction. How will construction professionals adapt to working with these tools?

Some of the speakers were:

Andrew Gamblen, Digital Manager at Willmott Dixon

Subject: BIM & Digital Tools are Inspiring Future Construction Within Willmott Dixon

Karl Pallister, Quality Manager at Sapphire Balconies Subject: Quality, Digital Traceability & the Key to Success

Allister Lewis, Head of Technology at ACG Architects

Subject: A Case Study of BIM

Shaun Farrell, Associate Director at UK BIM Alliance Subject: How Digital Tools and BIM Are Used to Drive Decisions Within Atkins

#### Get Residential Right in Dublin

#### 12th August

Ireland is facing a significant shortage of houses and

homelessness has quadrupled in 5 years. How can developers get it right in Dublin?

Some of the speakers were:

Archie O'Donnell, Environmental Manager at i3PT

Subject: Ensuring Quality in Irish Residential Construction

Andrew Parsons, Technical Director and Founder at Sapphire Balconies

Subject: Balcony Drainage

Derek Russell, Design & Engineering Manager at Techrete Subject: Efficient & Safe Precast Panels for Dublin Homes

Laurie Pomeroy, Sales Manager at Duty Point

Subject: Offsite Manufacture Pods

# The Future of Construction Post-Pandemic

#### 30th September

The COVID-19 pandemic has been a shock to the system for many in the industry, but what lessons can be learnt from it and improved for the future?

Some of the speakers were:

James Walker, Pre-Contracts Director at Sigmat Ltd Subject: Speed of construction with Lightgage steel guide Laurence McBeth, Sales & Commercial Director at Alumet Systems

Subject: The Advantages of unitized facades

Geoff Pelger, Head of Refurbishment at My Dek Subject: Balcony refurbishment its importance and delivery

Lee Wilmshurst, Managing Director at Steelbuild Subject: Staying Productive

Through Lockdown & Looking Forward with Steelbuild

Phil Chitty, ESH Manager at Sapphire

Subject: Keeping Sapphire Safe & Productive

Nick Haughton, Marketing Manager at Sapphire Subject: Balcony Design CPD

David Jones, Director of Education & Training at The Institute of Construction Management

Subject: CDM Regulations

Turn to page 2 for upcoming events in 04

Unlock the recordings of all past events and sign up to attend those upcoming for free at www.resi.build



# STEELBUILD

### "There is no Standard but the Steel Build Standard"

Design, fabrication and installation of:

Structural steelwork Architectural metalwork Glazed balustrades **Balconies** 

I found Steel Build one of the most helpful and knowledgeable contractors on site.

The supervisors were courteous and felt as part of the team. When the programme had to be hit they pulled out all the stops. I would not hesitate to use the company again.

> Job: ALTO John Connell Wates

All of the Steel Build team have been very professional.

Any issues have been dealt with, no problems and straight away.

I will look forward to working with Steel Build on future projects. One of the most professional contractors I have ever worked with.

> Job: Carnarvan Road Stuart Bennett Hollybrook

What you hope for with a specialist sub-contractor is that they take ownership of their element of your works and complete them without any negative effect on the rest of your package.

I experienced a willingness to be part of the larger site team, which enabled us to provide a seamless installation to our client.

> Job: Wates NW06 Steve Harris **OCL Facades**















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Unit 1 Bryher Farm, Colesdon Road, Duck's Cross, Bedford MK44 2QW

# Put Your BS 8579 Knowledge to the Test

The latest British Standard, BS 8579, was published in August after public consultation this summer. Our Technical Director, Andrew Parsons, sits on the board of the BSI Committee helping to guide best practice for balcony standards. Are you ready to apply these standards to your next project? Take our quiz below to put your knowledge to the test!

Q1:	Decking and balustrade infill should have a minimum service life of?						
A.	15 years	B.	50 years	C.	30 years	D.	40 years
Q2:	The slope to the balcony door threshold must be no greater than what?						
A.	25°	B.	15°	C.	5°	D.	35°
Q3:	Balcony balustrade should be a minimum of above the balcony deck or FFL.						
A.	90mm	B.	1100mm	C.	1200mm	D.	1500mm
Q4:	The handrail should be slanted in towards the balcony with an angle of at least what?						
A.	20°	B.	10°	C.	15°	D.	25°
Q5:	Regarding fire performance, the design of balconies, walkways and terraces for buildings which include residential use should meet the recommendations of which BS? BS 9991 or BS 9999?						
A.	BS 9991	B.	BS 9999	C.	Both		
Q6:	The highest point of the principle water collecting surface should be at least how far below the ingress level?						
A.	50mm	B.	55mm	C.	65mm	D.	75mm
How did you do? Check your answers below.							

Looking to learn more about BS 8579 and what it means for your project? Go to www.sapphire.eu.com or contact us to book a BSI Balcony Standard CPD

Answers: Q1. 30 years, Q2. 15°, Q3. 1100mm, Q4. 15°, Q5. B5 9991, Q6. 75mm



### Request Your Free PPE Pack Today

To help colleagues in residential construction get back to work safely, we're offering FREE PPE packs including hand sanitiser, face masks and hygiene keys. This is just one of the ways we're supporting the industry to get back to doing what we do best.

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