

INSIGHT

The News Magazine From Sapphire



2021
Q4

What does 'Net Zero' mean
to you and your business?

Read more on page 12



Editor's Overview

Editor

Hello, I'm Janani; I would love to hear your ideas for future content or questions you would like our experts to answer in future issues. You can reach me anytime at Janani.aravind@sapphire.eu.com

This quarter's Insight Magazine focuses on sustainability and our approach to achieving it. We also discuss the construction cost hikes due to material shortages that emerged in 2021. The impact of

Brexit and the ongoing effects of the pandemic has created the availability of labour onsite in the supply chain.

In this edition, we discuss 'net zero carbon' with Nick Haughton, Head

of Marketing at Sapphire Balconies, on Pg12. Alongside Resibuild, Sapphire brought together a range of experts to consider the building envelope challenges to reduce the risk of external fire spread in multi-storey buildings.

On Pg20, we delve into the ban of laminate glass and the drivers for choosing the laminate glass.

Janani Aravind
Janani Aravind



Event Coordinator

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

Kelly Macklin
Kelly Macklin

Events



Hindsight

Create, Deliver & Maintain the External Envelope Vision
04th November 2021

Fire Safety in High-rise residential
11th August 2021



Foresight

Creating a Successful Vision
09 March 2022

Industry experts uncover the advancements in the residential industry – new developments in design and fast-changing regulations for creating a neighbourhood. We will also talk about how material shortages from last year have impacted the pricing for this year.

What does the future hold for balcony design and construction?
21 April 2022

Against a backdrop of environmental concerns, skill shortages and increasing construction costs, UK Balustrades & Balcony experts Sapphire Balconies discusses the trends pushing the global demand for new technology in high rise/ Condo apartments in Europe and North America.

Resibuild | Dublin Summit
May 2022

We will be hearing from a range of speakers on how speed and scale can be unlocked with balconies and solve a range of issues from fire, quality, offsite and drainage. Our experts will deliver roundtable and panel discussions throughout the day.

Industry Insight

Key stats from 2021

5,500

5,500 balconies installed/
manufactured in 2021



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

10

10th factory signed up to
manufacture Sapphire balconies

53

53 NPS score, which is
considered excellent

1

Signed one new
Canadian licensee

55

55 CPD sessions delivered

A Standardised Approach

Increased standardisation in building design could help to slow the materials and construction cost increases that emerged in 2021 – fuelled by the impact of Brexit and the ongoing effects of the covid-19 pandemic. Both these factors affected the availability of labour on-site and in the supply chain.

With demand far greater than supply in much of the industry, manufacturers and other suppliers have been able to pick and choose their priorities, projects and prices. Unsurprisingly, suppliers tend to favour 'easy' jobs.

But whoever absorbs some of the inevitable increased costs along the supply chain, ultimately, the end-user will foot the bill.

Building costs can be brought under tighter control by minimising variations in design, materials and finishes. This does not necessarily curtail the freedom of architectural expression: it simply requires best practice at all stages.

For components – such as balconies that are built off-site – this already leads to more efficiency on production lines and, in turn, to superior product quality. This is complemented by streamlined delivery, handling and installation of completed units.

A standardised approach like this should result in more attractive projects to suppliers and pricing more competitive.

Nick Haughton

Nick Haughton



The Appleton

Glide-On™ aluminium Cassette® balconies with Crystal® frameless, structural glass.



Malgavita

Split lift inset balconies with two cassettes lifted and joined with privacy screen in between.



Wheatstone House

Glide-On™ aluminium Cassette® balconies with Crystal® frameless, structural glass.



Blythe Road

Glide-On™ aluminium Cassette® balconies with vertical bar balustrades

Unsafe Cladding: New Powers Proposed

Removing cladding from building costs millions of pounds per block, and leaseholders bore these large bills under the leasehold system in England and Wales.

Under the new proposed government plans, flat owners or leaseholders will no longer have to pay to remove dangerous cladding from lower-height buildings. However, developers and manufacturers will cover the cost of eliminating unsafe cladding.

The Government will try to secure up to £4 Billion from developers towards these costs whilst leaseholders in buildings from 11 to 18.5m are freed from these bills.

Government Actions on Cladding

According to BBC, Housing Secretary Michael Gove said, “it was time to bring this scandal to an end. We cannot allow those who do not take building safety seriously to build homes in the future, and for those not willing to play their part, they must face the consequences.”

In addition to this, he also said, “that no leaseholder living in a building higher than 11m - around four to six storeys high - “will ever face any costs” for fixing dangerous cladding.”

Four years after the Grenfell fire, which killed 72 people in 2017, hundreds of thousands of people still live in blocks around the UK that have not had works carried out.

New measures by the Government against firms that fail to pay for removing the cladding includes:

- Planning permission blocked and building control sign-off to prevent firms from building and selling new homes
- Charging a higher rate of the new building safety levy
- Using cost contribution orders to ensure manufacturers prosecuted for selling unsafe cladding pay their fair share

Additionally, developers are expected to pay their fair share to fix dangerous buildings or face legal or tax charges.

There is undoubtedly a mixed response, with some residents

welcoming, others stating it doesn't go far enough. Many in the construction industry are receiving, yet there is a strong feeling amongst some questioning whether the government is unfair or not considering the sign-offs. Many of these concerns come from those who believe they built their buildings in good faith (and without the hindsight we now have).

Has the government gone far enough in considering these buildings, which were signed off by building control where the build process had been done in line with standards of that time or is this the right direction, and we need to accept that as an industry? No doubt, this will be a well-debated topic moving forward.



Join industry experts at one of our upcoming events



Creating a Successful Vision Virtual Event | 9 March 2022

In this virtual event, we will uncover the advancements in the residential industry – new developments in design and fast-changing regulations for creating a neighbourhood. We will also talk about how material shortages from last year have impacted the pricing for this year.



Dublin Summit | May 2022

At this Dublin Highrise Resibuild Summit event, we aim to educate construction industry pro-fessionals to understand intelligent building design. The theme for the event is Unlocking Residential Construction in Dublin.



Delivering the Vision Virtual event | June 2022

The how-to guidance from critical influencers and external envelope leaders on residential construction projects. This event brings together contributors from the second chapter of the external envelope and findings gathered in this book.



Maintaining the Vision Virtual Event | August 2022

The how-to guidance from critical influencers and external envelope leaders on residential construction projects. This event brings together contributors from the third chapter of the external envelope and findings gathered in this book.



Midlands Summit | September 2022

Join our industry experts to discuss how we can maintain the vision as discussed in our External Envelope Vision book. Check back soon for more information and speaker announcements.



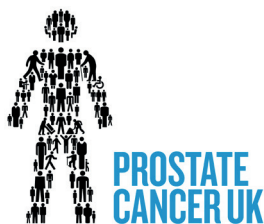
Flagship Event, London Venue TBC | November 2022

This event will be a face-to-face event and be live-streamed for those unable to attend. Check back soon for more information and speaker announcements.



Let's support those in need

Our guiding principle is “innovation to prosper the community”. Part of prospering the community is our involvement in charity work through volunteering and fundraising. We are always looking for new causes and challenges to support those providing vital services and relief to people in need.



Last year, we raised £2,035 for Prostate Cancer UK, a prostate cancer research, awareness and support organisation registered in England and Wales. Sapphire staff racked up the fundraising, and it was boosted ten times by Sapphire.



For the first quarter of 2022, we set our sights on fundraising for the GOSH, Great Ormond Street Hospital Children's Charity, a cause close to the hearts of many at Sapphire. We want to contribute to their excellent work.

Here is the link to our just giving page: Kelly Macklin is fundraising for Great Ormond Street Hospital Children's Charity ([justgiving.com](https://www.justgiving.com))

Learn more: www.balconies.global/charity



Setting sustainability goals for a building during construction and occupation

This article is taken from the new Resibuild book *Create, Deliver, & Maintain: The External Envelope Vision*. Dr Zainab Dangana, Sustainable Services Manager at Wates Group discusses setting sustainability goals for a building during construction and occupation.

In May 2019, the UK Government became the first national Government to declare an environment and climate emergency with 70% of UK local authorities doing the same. Many professional bodies have also launched programmes in the face of climate change.

The Royal Institute of British Architects (RIBA) is one such institution that has set out what a sustainable development should

look like for the construction industry. Following the RIBA guidelines will be beneficial to businesses, but the real systemic change comes from integrating changes and making guidelines compulsory in the years to come.

Misconceptions to dispel

There are common misconceptions and a reluctance around environmental innovation which have led to a slow uptake (and therefore missed opportunities) to integrate sustainable products into the design construction and maintenance of buildings

One reason for this is the high upfront costs of new products, which can add 3-8% to the capital cost. There is also a

lack of understanding about the credibility of the products, especially those marketed as carbon neutral – a concept about which there is a lot of confusion.

The definition of a carbon-neutral product is product where the amount of carbon taken to produce is counterbalanced by the amount of carbon it saves in operation.

As an example, the production of brise soleil releases carbon into the atmosphere, but the savings in future carbon use and operating costs of air-conditioning in the building can potentially neutralise that carbon use.

It is vital to look at the whole lifecycle of a product and the potential savings it makes throughout that time.

Product choices or off-setting?

Through the process of choices that are made, the design and construction of a carbon-neutral building could be possible, but it comes with many considerations. Architects and contractors need to look at three levels – the fabric of the building is the number one priority, energy efficiency the second, and renewables third. Even with these three things incorporated into the design of a building, it's not 100% possible to achieve net-zero carbon buildings and that's where off-setting can help.

A lot of companies invested in the off-set option straight away because it's easier than incorporating carbon neutral products. If the UK is to meet the net-zero target, the industry needs to consider the fabric, energy efficiency, and renewables before resorting to off-setting.

Know what you want from your supply chain

To increase the standards of sustainable performance, there are particular processes and accreditations that you look for from the supply chain. For example, contractors will only work with suppliers registered with Constructionline, that have sustainable procurement policies in place.

Customers are looking at the circular economy in terms of what can be reused, reduced or recycled in manufacturing processes to reduce the impact on the environment. There is an appetite for suppliers who can support in reducing waste, using principles of a circular economy. A window company that recycles old windows as well as other products is a good example of this and considered more environmentally friendly.

Key takeaways

- There are common misconceptions about the credibility of products
- Register with the Carbon Trust to get carbon neutral accreditation
- Keep up-to-date with changing Government guidelines
- Carbon neutral products can be integrated over time, rather than all at once
- Create a separate budget for sustainable products outside of the budget as a whole



The External Envelope Vision book brings together the opinions and expertise of over 80 industry professionals in one essential reference resource. [Get your copy here](#)

Balcony variety adds interest at significant Southall development

The advent of Crossrail and the introduction of Elizabeth Line services across the capital make West London an increasingly popular choice for home seekers. The area has also provided opportunities for residential developers – with former industrial land close to suburban stations on the line from Paddington seeing significant new building activity.

One such site, just a short walk from Southall's station, is The West Works, a multi-storey development designed by Boon Brown Architects and built by Redrow Homes. Flexibility in delivery of offsite-built balconies – plus the benefit of Sapphire's Rigid Ready Right policy – was a key benefit on this project.

Situated on Merrick Road, The West Works occupies the

northwest corner of the former Malgavita Works site. This was once a pioneering margarine factory and later the home of Walls sausages. Part of the site was until recently a petrol filling station.

With industry long gone, the area is rapidly redeveloping as a modern residential hub, with two other projects already completed on Merrick Road.

Under the guiding hand of Redrow, The West Works provides 489 apartments in a variety of sizes and floor plans, as well as a small element of commercial space. It is a four-core concept, built roughly as a square with a central courtyard, and three core sections ranging in height from seven to 16 storeys. The fourth core of the development is the

22-storey Merrick Tower – in a complementary external design, but with a strikingly different colour of brick cladding.

Giving the development the widest possible appeal, there is a range of apartment sizes, layouts and balcony types.

Balconies in the Merrick Tower and other parts of The West Works are within the building envelope, but to provide alternatives and added visual interest, 92 apartments have Sapphire's Glide-on™ Cassette® balconies. These are of similar appearance to the inset balconies.

The balconies have controlled draining soffits, U-shaped top rails, vertical infill bars and fascias, all polyester powder-coated aluminium.



Offsite-manufactured in Sapphire's specialist facility, the balconies were delivered from storage in phases to suit the construction programme. Careful planning and execution were required to ensure efficient deliveries at all times – especially as unrelated delays on site meant that some balcony deliveries had to be rescheduled at short notice.

On arrival at Merrick Road, balconies were lifted into position by crane and fixed to support arms that were in turn attached to cast-in anchors. The anchors, which have thermal breaks to avoid heat loss, underpin the rigidity and safety of Sapphire's balconies.

While all the Sapphire units at The West Works have the exact basic specification of balustrade, decking and soffit materials, the project involved some variation. For example, while most of the balconies are outside the building envelope, some are inset – with privacy screens where appropriate. And a splayed wall – part of the design to soften corners – necessitated a special infill section on some balconies. Specification for the decking was changed from wood-plastic composite to MyDek at the client's request. ■

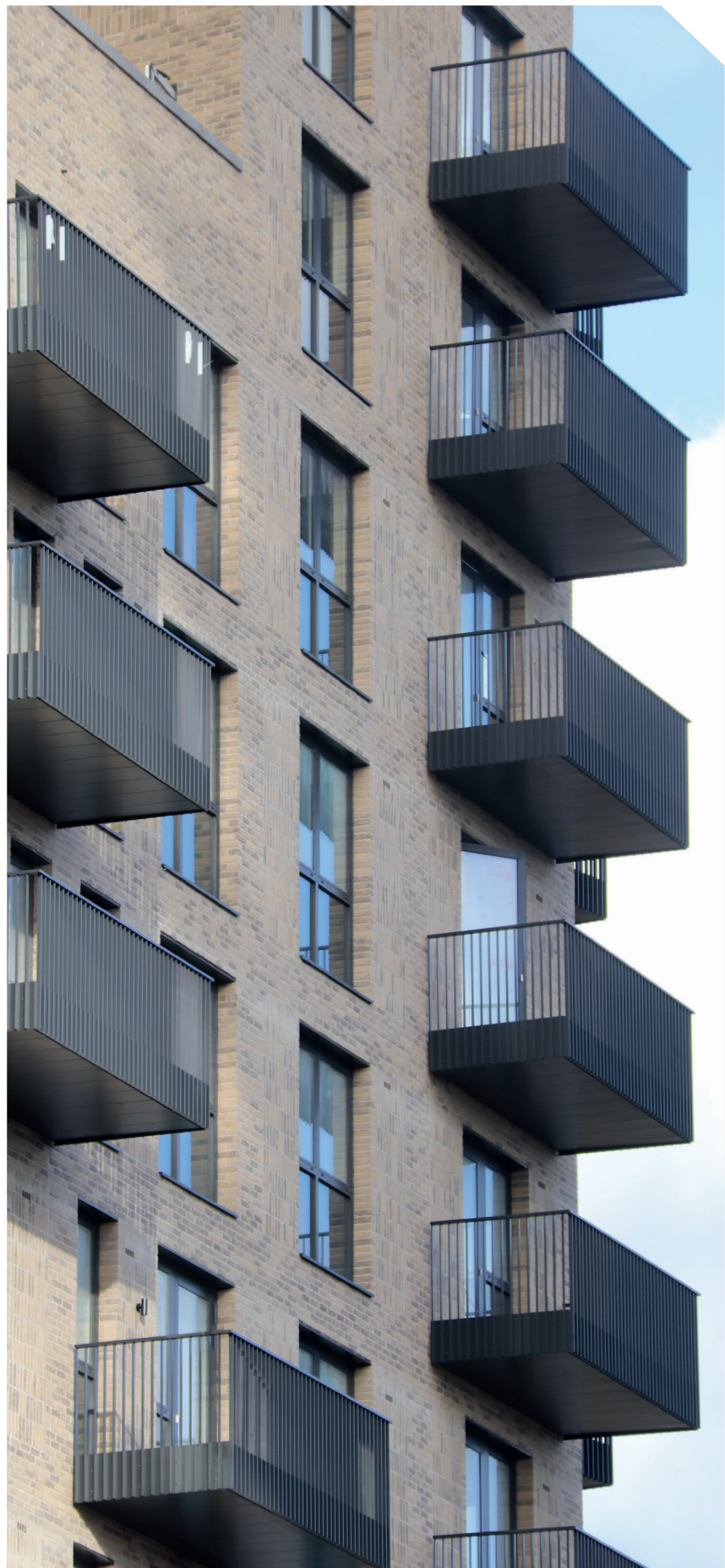
Key Stats

Architect: **Boon Brown Architects**

Contractor: **Redrow Homes**

Balconies: **92**

Location: **Southall**



Ask The Expert



Nick Haughton

Nick Haughton has been a part of Sapphire balconies since 2006; he heads up our marketing team for both UK and global markets. He educates the market through the delivery of technical CPD presentations, early-stage design meetings, events, and industry thought leadership.

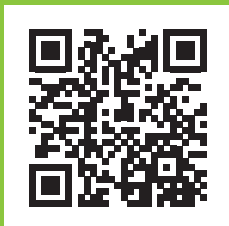
Nick has shared his valuable insights on ‘net zero carbon’ and Sapphire’s approach to achieving it.

Q: What does ‘net zero carbon’ mean for Sapphire?

A: Ideally, it suggests that any materials or processes during manufacture and installation result in CO₂ emissions – embodied carbon – steps are in place to offset any negative effects. This is relatively easy to achieve. But we also have to consider whole lifecycle carbon assessments, to safeguard future generations and the environment when today’s buildings and balconies are eventually demolished. Strictly speaking, ‘net zero’ should mean no carbon – ever.

Q: Can Sapphire actually achieve net-zero?

A: It’s a tough call for any manufacturer because there are so many factors involved. But like all responsible businesses, we have recognised net-zero as our target and are constantly exploring possibilities in terms of more appropriate materials and the processes of production, delivery and installation. We are also aware that management activity may indirectly add to the carbon content of products, so we are looking closely at how we could do business more smartly.



Watch our “Dedicated to Sustainability & Carbon Neutral Balconies” video

Q: What is Sapphire doing right now towards achieving net-zero?

A: A good example is increasing the efficiency of road deliveries by ‘nesting’ our offsite-manufactured balconies. This means fewer lorry trips to the site, with immediate environmental and economic benefits. In the longer term, our support and anchor system incorporating thermal breaks means balconies will not increase heating costs or, indirectly, any carbon emissions arising from energy supplies. It is worth noting that taking our environmental responsibilities is not a new concept for Sapphire – we have been ISO14001 accredited for over 10 years now and therefore sustainability has been part of our everyday business for a long time.

Q: Would greater use of recycled materials help?

A: In theory, yes. But it’s an argument that overlooks the negatives and there is a common perception that recycled is not as good as new. Also, some materials can be more expensive – in both economic and environmental terms – to recycle than to produce. Right now, it’s difficult to source the right materials – new or recycled. We are in discussions with our suppliers to ensure we are getting the best possible deals for the environment.



Balconies add outdoor space to 'town centre' apartments

Creating attractive multi-storey residential accommodation in 'town centre' locations calls for good design and finishes – plus facilities that add a touch of outdoor space to apartments on all levels.

SO Resi (formerly The Appleton) is such a development on the busy Broadway, in London's West Ealing. Built on the site of a former BHS store, it consists of 136 apartments in one, two and three-bedroom configurations – all sold through the shared ownership scheme.

It is one of several recent redevelopments that are bringing new life to the area, which enjoys increased demand for residential accommodation because of its excellent transport links to central London as well as outlying areas.

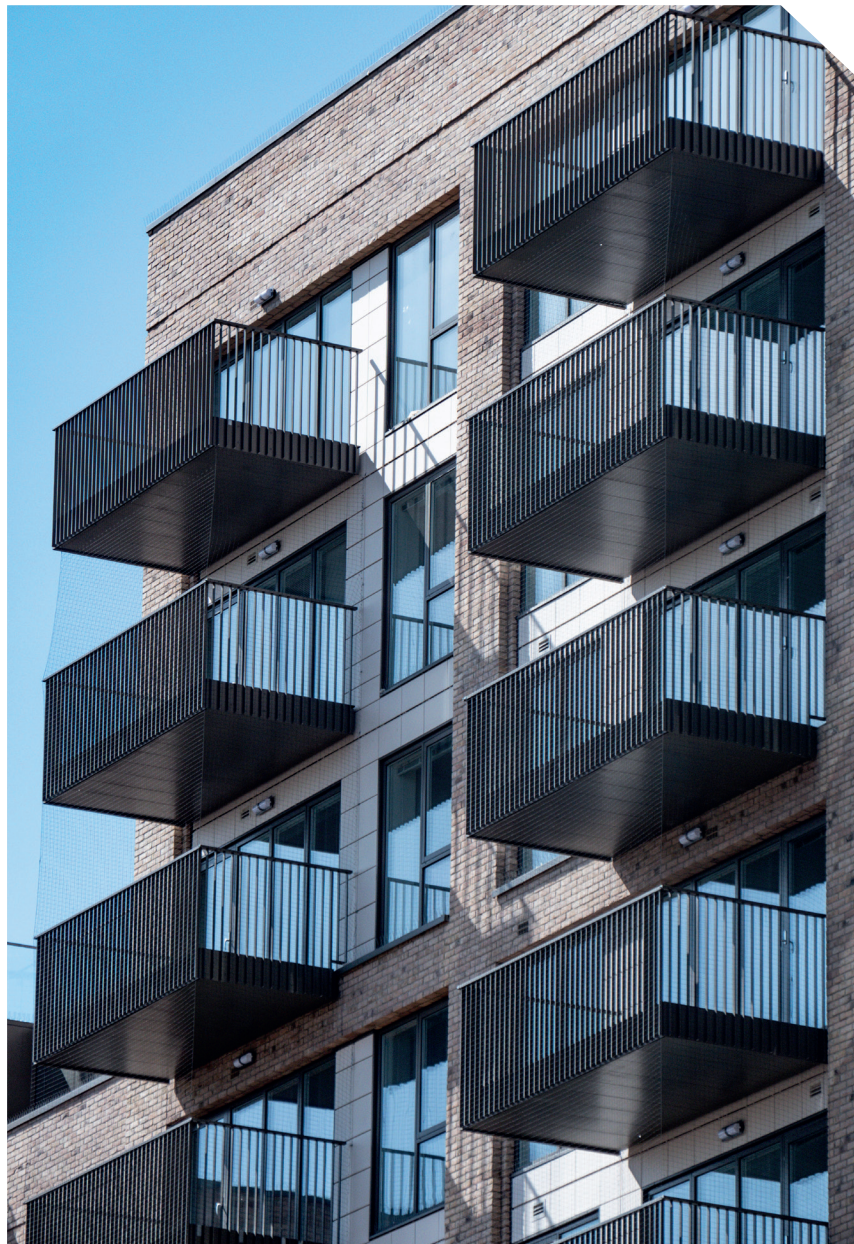
The ground floor is occupied by an entrance, a 15,000 sq.ft retail unit and service areas at the rear. The oblong site has three street frontages Broadway, narrow Brownlow Street to the side and Singapore Street at the rear.

In addition to an attractive roof terrace for residents, 95 of the apartments were designed with private balconies to enhance the lifestyle of occupants – and add to the overall visual appeal of the building. The building was built by Rydon Construction, to designs by London-based multi-disciplinary architectural and building consultant practice, Hunters.

The chosen solution was offsite-manufactured Glide-On™ Cassette® units from Sapphire Balconies – assembled to precise specifications on a dedicated remote production line to ensure consistent high quality. Materials were selected from Sapphire's

extensive range of balustrade, decking and soffit options, which give architects plenty of scope to create distinctive finishes to their buildings.

Two specifications were used, with some balconies featuring





frameless structural glass balustrades and others vertical metal bars. The glass panels have anodised aluminium capping, while all other metal parts including fascias and soffits are polyester powder coated aluminium

The Cassette® units, echoing Sapphire's Rigid, Ready, Right philosophy, are stored, ready for delivery to suit the construction schedule. Units are often 'nested' for more economical deliveries – and usually pre-slung to simplify offloading and subsequent hoisting into position on the building façade.

On site, the first evidence of balconies is when anchors,

incorporating thermal breaks, are cast into the floor slabs, with support arms protruding to the exterior.

With almost no spare site space at SO Resi, balconies were mostly craned direct from lorry to their allotted positions on the façade. The Glide-On™ facility enabled each unit to be positioned easily on its support arms; then securely bolted in place with complete safety for the installers. After securing the final decking sections concealing the bolts, the balconies were complete – and ready for a lifetime of rigidity. ■

Key Stats

Client: **Thames Valley Housing Association**

Contractor: **Rydon Construction**

Architect: **Hunters**

Balconies: **95**

Location: **Ealing, London**

Shard Event

With the Grenfell tragedy still in the public spotlight and pressure growing to reduce the risk of external fire spread in multi-storey buildings, Resibuild brought together a range of industry experts to consider building envelope challenges.

Resibuild is an initiative led by Sapphire Balconies. It includes a valuable resource book *Create, deliver and maintain the external envelope vision*. Launched at the London event, the resource book features the advice of numerous industry-wide contributors.

The launch event, at The Shard, focused on key challenges faced by residential stakeholders. It was also designed to promote networking among construction professionals and other stakeholders.

Four keynote panels covered:

- **Turning learning into action:**
A fire-free future
- **Construction's competency:**
Issue, action and culture
- **A zero-carbon future:**
Creating steps not footprints
- **Construction's technology:**
Modernise, digitise or die

There were also four major presentations:

- Balconies: Productivity in and cost out (Sapphire)
- Mechanical smoke ventilation systems (Sertus)
- Effective passive fire protection for penetrations in buildings (Quelfire)
- Designing for residents (Skize)

The external envelope vision book features 87 unique contributions from an extensive range of organisations and companies involved in the built environment sector. It includes contributions from experts at Clarion Housing, the National House Building Council, the National Fire Chiefs Council, L&Q, Berkeley Homes, Sheppard Robson, and Willmott Dixon.

As a result, the new publication is helping to identify points of convergence between different stakeholders and reinforcing the need for more holistic working practices in the construction sector.



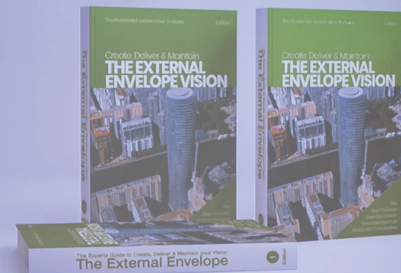
“Great to be part of such an excellent discussion with industry stakeholders”

Andrew Gamblen, Wilmott Dixon



Agenda:

- 4 Panel Discussions
- 5 Partner Presentations
- 4 Roundtables
- Fire Escape
- Phones
- Help on hand



EVENTS



“The knowledge of the panel speakers was impressive and therefore very helpful”
Miguel Silva, Effisus UK Ltd



“Sapphire, in my opinion, is a forward thinking, focused, very commercial company”
Chris Lister, Farrat



“Any opportunity to improve knowledge is essential in this industry and this event has provided valuable insight from very experienced, senior-level construction professionals”

Dan Carter, TP Bennett



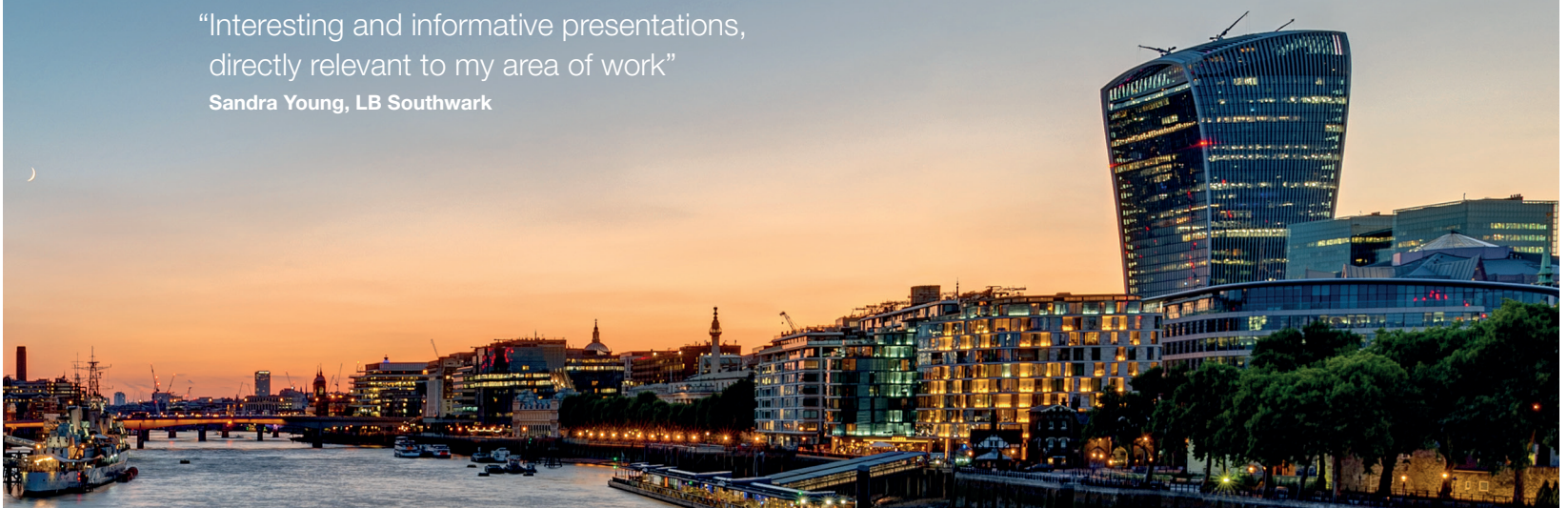
“A useful event, a great book, and a brilliant location”

Nyasa Beale, Scott Brownrigg



“Interesting and informative presentations, directly relevant to my area of work”

Sandra Young, LB Southwark





The case for laminate glass

Under the 2018 ban, laminate glass balustrades were banned in the UK, although permitted in doors and windows. The amendment to Approved Document B banned all combustible materials on the whole of the façade of the buildings over 18 metres tall (11mm in Scotland). The materials must be compliant with fire classification A2-s1 in accordance with BS EN 13501-1:2007 and A1:2009.

In contrast, monolithic glass is permitted (from a fire perspective, but not with regards to the CDM or regulation 7) but itself carries safety concerns in the event of a breakage. Another source of confusion is laminate glass in windows and doors is included in the exemption list, which is not the case in balcony balustrades. It is questionable whether the ban on laminate is intended, entirely justified or seen as a blanket decision born out of misunderstanding its properties. This has caused much confusion and hesitation to use laminate at any height.

Drivers for choosing laminate glass

The main reason for choosing laminate instead of monolithic is that the barrier integrity means it is safer at height and meets Regulation 7.

For many years laminate has been the leading choice over metal railings and solid balustrade systems. Some of the drivers for this have been:

Effects of wind at height

Screening a balcony creates a more comfortable environment for users and provides protection for furniture and plants. One of the most significant housing associations in the UK has stated that, in a post-Grenfell world, it specifies vertical aluminium bars on all their jobs, presuming it would reduce the fire risk. However, when occupied, residents installed makeshift windbreaks using plywood sheets and other materials which were cable tied to the railing. There is now an inherent dilemma about whether the decision to specify railing over laminate mitigated any fire risk.

Privacy

Surprisingly, it is easier to achieve privacy with glass than railings. The interlayers in glass can be switched to obscure ones, avoiding the chance of residents using potentially combustible screens.

General safety

On balconies with railings, items can fall from one balcony to the

next, causing a safety risk. Glass balcony balustrades avoid this problem.

Light

Glass balustrades allow light into an apartment; a metal system is likely to obscure light.

Safety first

Although there is no one test for laminate glass' safety on balconies, Sapphire carried out combustion tests on their balcony model to show the behaviour of the glass under the extreme heat of a fire. While the tests showed that the common interlayer types do combust indirect flame, the performance of the entire balustrade meant that it remained whole. At the same time, the monolithic glass shattered, creating an unsafe void and a hazard to those below. In each area researched, the results show that the likelihood of laminate contributing to the fire load is of a very low probability, even in a potential worst-case furnishing scenario.

From our extensive research with all the UK fire services, no incidents involving laminate have seen it as a primary ignited material and the cause of the fire. Instead, laminates have been damaged by the intensity of the fire spread and the heat of furnishings and other materials on fire in immediate proximity to glass balustrades.

The potential safety of laminate glass is in the hands of everyone involved in a building, from designers to end-users, by ensuring that all elements that make up a balcony work.





Luxura[®] A1 Fire Rated Mineral Composite Decking

A unique and patented high density mineral composite designed to replicate the aesthetic of hardwood timber and is truly the ultimate decking board.

The high-density composite feels both natural and solid underfoot and will never twist, warp or rot. It is exceptionally resistant against scratching, wear and tear and will endure all extremes of weather conditions.

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What to expect in 2022

Price hikes and labour shortages have increased the need for innovative ideas in the construction industry. Here is what the major construction industry trends look like for the year 2022.



Sustainable Buildings

Sustainability and climate change continue to be critical topics within the construction industry globally. The UK Government has set to achieve an 80% reduction in greenhouse emissions by 2050. It is estimated that 25% of carbon emissions come from homes and a further 17% from non-domestic buildings, so a decision has been made to improve energy efficiency in every household.

Modular and Offsite Construction

With fewer on-site workers, modular and offsite construction help mitigate the shortage of labours. Offsite prefabrication is gaining momentum and is primed to take over the market as it becomes more of a necessity.



Skilled Labour Shortage

The construction industry faces a considerable labour shortage due to the increase in the demand for skilled labour. This shortage has led to a rise in labour costs, making quality labour expensive and competitive.

Material Costs

Between September 2020 to September 2021, the cost of building materials and building work soared high. Material shortages and inflation have dominated the agenda of 2021, and it is expected to continue to 2022.

With the changing market, the construction industry must adopt new practices, leverage new technologies, and invest in new projects to reduce risk and gain projects.



