## INSIGHT



The News Magazine From Sapphire





#### 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

The first quarter of 2020 has been a turbulent one bringing many changes to the industry. The quarter began with the terms of the UK's withdrawal from the E.U. and the spotlight quickly moved to the government consultation on building regulations. Before long the news of the global COVID-19 pandemic threw the nation into

uncertainty with many industry colleagues working from home while site teams wait to see if they'll be shut down.

In this issue we'll tackle the updates to the building regulations with a guest feature from Geoff Wilkinson on page 8 and on page 12 we sit down with Sapphire's fire expert Nick Haughton.

## Editor's Overview

If you have any technical enquiries be sure to get in touch.

In this issue you'll find all the resources you'll need to maintain compliance with the latest guidelines but if you have any technical enquiries be sure to get in touch.

Mary McCollum

Mary McCollum



#### **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 event at The Shard on page 16.

Contact me to book a virtual CPD, Fire CPD or Design Meeting today!

### **Events**



#### Hindsight

Reducing Fire Risk in Residential Buildings 6th February 2020

Unlocking the potential for Speed and Scale in the New Zealand market **20 February 2020** 



#### **Foresight**

The ResiBuild Virtual Series seeks to educate construction professionals through a series of collaborative virtual events. The series will tackle a number of topics from well-being during the present crisis to product challenges faced every day on site.

Construction: Working from Home, Learning, & Staying Productive

22nd April 2020

The External Envelope 13th May 2020

Digital Tools: An Accelerator

to Construction **3rd June 2020** 

MMC: The Thrust Behind Construction

23rd June 2020

## Industry Insight

## 2.4 million



36%



The sector contributed

£117 billion to the economy in 2018



respondents say fire safety is the top concern in designing balconies



#### **Technical Advice**

Phil joined us in 2015 as the ESH Manager and works hard to ensure we're not only compliant with regulations but that we exceed safety standards on and off site. Phil has worked closely with the senior team to ensure the health and well-being of staff is maintained particularly in light of current global circumstances. phil.chitty@sapphire.eu.com

#### COVID-19 and Construction

COVID-19 is posing a real challenge for businesses across the industry as we shift our working methods to meet government guidelines. One significant hurdle is how to maintain productivity on site while keeping workers safe?

Official guidance is changing day-by-day while many within and outside of the UK construction industry call for non-essential sites to be closed. As anyone who has been on site will know, hygiene can be a challenge to maintain, particularly considering the potency of the corona virus and the need to maintain a "social distance".

However, with 36% of construction workers and architects classified as self-employed what would site closures mean for the labour force? While they would

be eligible for government assistance this would represent a significant reduction in income for many and may prompt those with families to support to put themselves at risk.

The question of whether sites should remain open continues to divide the industry as it becomes clear that neither option is ideal, and each present their own concerns.

The COVID-19 pandemic presents a range of unprecedented challenges for both the industry and the nation. One thing that remains clear is the need for all of us to support each other as this crisis grows and stick to the guidelines provided by Government and the NHS.

Regards

Phil Chitty

#### **INSIGHT SPOTLIGHT**



#### **Green Park Extra Care**

Curved balconies provide outdoor space for retired residents at Green Park Extra Care, Reading.



#### **Snow Hill Wharf**

Anchors cast-in at Snow Hill Wharf, Birmingham.



#### **Balconies in Storage**

Balconies at one of our storage facilities waiting to be called to site.



#### **Deptford Foundry**

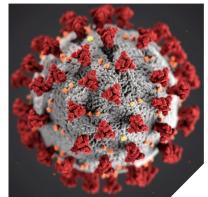
Blue skies at Deptford Foundry, as the industrial design reflects the rich heritage of Deptford.

## Government Announces £330bn Coronavirus Fund

Due to the unforeseen disruption of COVID-19 the government has announced a £330bn fund to back loans to companies suffering the consequences of the pandemic. The support is split between two schemes, one for larger business and another

for businesses with a turnover of less than £45m.

The fund represents part of a larger economic plan from the government in efforts to combat the effects of the COVID-19 outbreak.





## Rick Willmott Calls for Combustible Clarity

In an interview with Construction News Rick Willmott, CEO of Willmott Dixon warned that the government's response to combustible cladding risks going "too far". Echoing what many in the industry have felt since the Combustible Cladding Ban Willmott expressed concerns

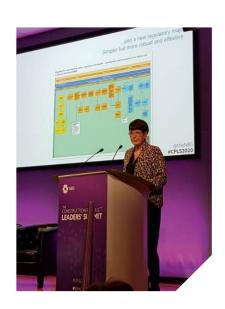
about the loss of pragmatism in the regulations leaving the industry unsure how to proceed.

The solution, he asserted, was greater guidance from the government to alleviate the doubt felt by many developers and avoid "inertia" in the development of much-needed new housing.

## Hackitt Slams Lack of Action in Construction

Speaking at The Construction Product Leaders' Summit Dame Judith Hackitt criticised a lack of motivation and commitment within the industry to change in line with her recommendations, which the government plan to implement in full.

Hackitt warned that companies must start making the changes necessary or feel the force of the new building safety regulator set to go into action in 2021. She criticised the "excuses" she has heard in response to the inquiry and described standard practices as "jaw dropping".



# The Construction Industry: Going 'Beyond the Standard' When It Comes to Fire Resistance



Following the 2018 events at Grenfell Tower, fire performance of building materials - particularly those used in building envelopes at height - have fallen under the spotlight.

Since then, both specifiers and system manufacturers have been reviewing their designs for suitability in the event of fire, against building regulations as well as client expectation.

Subsequent changes in UK building regulations in 2018 prohibits the use of combustible materials in building envelopes above 18m, and great strides have been made in making balconies available, that meet these criteria. Whilst Structural Thermal Breaks currently fall outside the regulatory requirements, all indications are that where compliant materials are available, the overall regulation guidance given

in Approved Document B4 (1) resistance to fire spread, will be enforced and the overall use of non-combustible materials will be standard.

Manufacturers are looking to go that extra mile, even before regulations enforce that they should.

Despite the fact that this regulatory change has yet to come, at Farrat we received something of a deluge of questions from structural engineers and architects regarding the availability of a fire-resistant thermal break material. Our material science team worked to develop a Structural Thermal Break that could not only perform as a highly insulating structural

component but could continue to perform in the most demanding of fire conditions.

Farrat TBF - an A2,s1,d0 rated, inorganic mineral composite - was formulated to harness the natural properties of its inert ingredients, in a form suitable for high demand use in structural details.

The demand for fire resistant materials that go 'beyond the standard' – going beyond just what is legally required and opting for what is the safest possible option – demonstrates an industry that is looking to future proof and ensure the safety of buildings and their inhabitants for years to come.

It seems that where fire safety is a consideration, more specifiers and systems manufacturers are looking to go that extra mile, even before regulations enforce that they should.

Credit to: Farrat





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



Range of CPD Accredited Insightful Presentations



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Developments from Home







## Book Your Attendance Now

## How High is the Cladding Risk?

In December 2018 the Government amended the Building Regulations to restrict the use of combustible materials in and on external walls and specified attachments like balconies.

The Government committed to review the effectiveness of the ban after 1 year so in Jan 2020 they released a new consultation on proposed changes to the Regulations. The new consultation looks at the current scope of the ban, the list of exemptions, and proposals to include additional attachments to external walls in the ban.

Currently the ban only applies to buildings above 18M containing one or more dwellings but there are calls to reduce this to 11M.

The consultation firstly proposes a ban on the use of metal composite panels in and on the external walls of all types of new buildings, those undergoing a material change of use or building work.

Following several high-profile fires there have been calls for the ban to be extended. Currently the ban only applies to buildings above 18M containing one or more dwellings but there are calls to reduce this to 11M. There is currently no robust evidence that there is a significant reduction in risk with buildings between these heights. It is however considered

that below 11m traditional external fire-fighting techniques can minimise the risk. 11M is currently used in Scotland as the threshold for more stringent provisions on external wall construction, although not an outright ban.

Whilst the ban does not apply to existing buildings where no work is being carried out, future legislation will require a case by case risk-assessment and buildings below 11M may need combustible material removed.

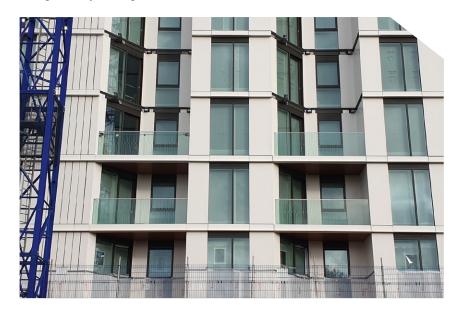
The final proposal to consider relates to the use of laminated glass in balconies. There is currently no laminated glass available which can achieve the appropriate classification (i.e. class A1 or A2-s1, d0) because of the interlayer used to bind the two glass layers together.

The use of monolithic toughened glass in balconies does not solve it either as it creates other safety issues when it breaks.

As a result, it is effectively impossible to design balconies using glass that can achieve all the required safety measures and fire classification.

The ban will remain in place, but the Government intend to commission research on the use of laminated glass to better understand its contribution to fire spread and overall risk before considering whether to exempt laminated glass in balconies. Therefore, it is likely to be at least another year before this problem will be resolved.

Credit to: Geoff Wilkinson - Managing Director, Wilkinson Construction Consultants.





#### THE NEED IS GREATER NOW THAN IT HAS BEEN IN MORE THAN A DECADE

In light of COVID-19 and the profound impact it has had on UK construction workers the need for charitable giving is growing daily. In response to this and showing how we are living and breathing our values we are working hard to support the work of the Lighthouse Construction Industry Charity, and you can help too!

#### **RESIBUILD VIRTUAL**

For every one of our free virtual events you and industry peers attend live we'll donate £1 for every single person. Tune in to Resibuild Virtual Lockdown Learning to improve your performance and productivity while working from home. Hear from key industry panellists discuss the ways they've been overcoming challenges from home and answer your questions live.

#### THE SAPPHIRE DAILY MARATHON CHALLENGE

For everyday Sapphire staff complete a marathon between us the company will donate £50 to Lighthouse. In addition, staff will be individually fund raising to provide as much support as possible. Whether it's a walk, run, cycle or row we'll be going the distance to fight for construction workers in need.

#### WHAT DOES THE LIGHTHOUSE CONSTRUCTION **INDUSTRY CHARITY DO?**

Lighthouse is the only charity that provides financial and emotional support to the construction community and their families in times of need. They provide:

- 24/7 Construction Industry Hotline
- Emergency financial support
- Advice on welfare and mental wellbeing
- · Support on legal, tax and debt management matters
- Education and training initiatives

## Unlock Free Learning: www.resi.build

# Sapphire's Offsite Glide-On<sup>™</sup> Balconies Overcome Challenges of Waterfront Installation

Vesta Street is a location steeped in British and Mancunian history. It was once the home of Willian Fairbairn, a prominent engineer in the mid-19th century who helped make Manchester the epicentre of the British industrial age. The industrial age transformed life in Britain and beyond and is woven into Manchester's heritage.

his modern development's 169 sleek apartments bring a new lease of life to this historic location delivering views over the Ashton Canal and city-centre living. With tranquil waterside views from Sapphire balconies, the development is sure to provide sanctuary to Manchester's city professionals.

We became involved in the project after Schoeck anchors had been cast-in. As a result, the balconies had to be specifically designed to accommodate for the existing spacing of the anchors while maintaining our high standards of rigidity. Fortunately, aluminium balconies are substantially lighter than steel

balconies, often half the weight, meaning a superior standard of rigidity can be achieved with the Glide-On™ system.

Another design feature of the project which added complexity to the install was that the balconies were situated within the reveal. This meant that the balconies needed to align





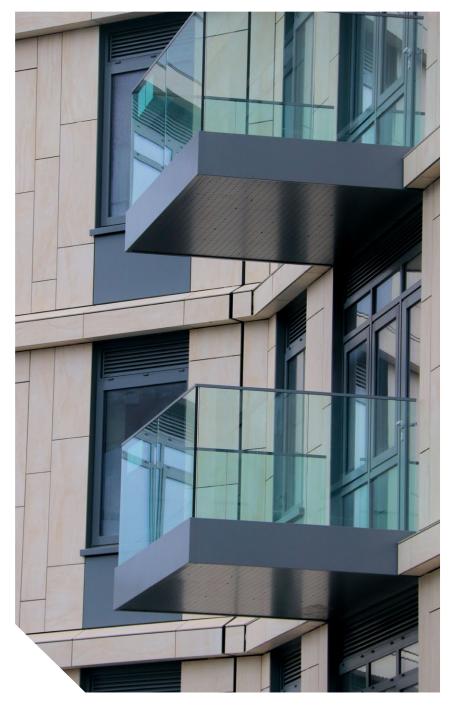
precisely with the specification and façade to ensure a perfect finish on site.

Thanks to Sapphire's offsite manufacture and high standards of quality control, the balconies were thoroughly checked throughout the production and prefinished to exacting standards. The Passport app is used to document each balcony along every step of its manufacture. This means that at every step of the way the balcony is extensively checked, logged and signed off before it can move to the next stage of production. Thanks to this system all of the 15 balconies we completed ahead of the agreed date ready to be called to site as needed. It also ensured that each balcony was produced to the standard and specification required, nesting between the 20mm reveal each side upon installation.

Due to the project's serene waterside location the logistics of delivering and installing the Glide-On™ balconies was more complex than usual. The location required a blind lift over the building using a mobile crane.

The crane operator needed to rely on close communication with the slinger signaller to guide the balconies into position before sliding them onto the awaiting arms. Once in place the balconies slide effortlessly into place nestled between the reveal before being safely secured.

Thanks to our offsite modular solutions once secured in place the balconies were complete without the need for additional trades. Our balconies arrive on site with balustrades, decking and soffits prefinished and installed. This avoids the need



for coordinating multiple trades on site each requiring access to the balconies adding time and cost to the programme.

Despite delays in logistics outside of Sapphire's control, all the balconies were installed in less than 24 hours living up to our reputation for fast, efficient install while meeting the expectations of our Rigid.Ready.Right. guarantee.

#### **Key Stats**

Architect: Chapman Taylor

& Partners

Contractor: Eric Wright Group

Installer: Dantaag

Balconies: 15 Cassettes®

Storeys: 9

Location: New Islington,

Manchester

## Ask The Expert



#### Nick Haughton

Nick is Sapphire's resident fire expert travelling around the UK and abroad to deliver CPDs to construction professionals. Nick's expertise allows him to aid specifiers in ensuring the compliance of their balconies.



#### Q: What's the situation with laminate glass balustrades?

A: Laminate glass balustrades are currently banned, although they are allowed for doors and windows. At Sapphire we're active testing new solutions and lobbying the government to review the regulations and provide an exception.

Monolithic is permitted but carries safety concerns in the event of breakage as it leaves a void until replaced. Crystal Linear is a new temporary solution available from Sapphire, contact sales@sapphire.eu.com for more information.

#### Q: Are the regulations continuing to change?

Yes, the first major part of implementing Hackitt was the combustible cladding ban which is well underway. However there have been several queries and challenges in implementing the ban causing confusion and hesitation, for example regarding laminate glass and decking.

The second major part is the regulator changes which are just starting, and we are yet to explore the consequences.

## Q: I've seen lots about different building heights, what is the key height?

A: Firstly, it's important to note that the regulations specify that the ban applies to the full façade of buildings over 18M, not only the parts above the 18M line.

This hight has been reduced to 11M in Scotland and the government has suggested that this height will be used in defining buildings where sprinklers are mandatory and require non-combustible decking.

New Zealand are following suit, currently consulting on a 10M building height threshold.

#### Q: So, with buildings below 18m can I use any materials?

- A: Theoretically you may be able to, however, this doesn't mean you should. After a major London fire in June 2019 involving an apartment block below 18M the government issued advice note 14. This clearly pointed out two things;
  - 1) B4 of Schedule 1 says external walls should adequately resist the spread of fire
  - 2) Combustible materials should be replaced

## Q: Is there one test for balconies to show they are either compliant or not?

In brief, no. There are some tests for some components but there are many interfaces that all adjoin to balconies, for example facades, cavity barriers, balconies, doors etc. and there are endless possible ways to combine them.

That said, Sapphire have been carrying out numerous tests with Exova (Warrington Fire) as well as our in-house facilities. We've tested various aspects and can provide some of the most extensive test data available for balconies specifically.

#### Q: What aspects should I consider for fireproofing a balcony?

- ▲ There are two key areas;
  - 1) Within the cavity to maintain a barrier. This would involve using a fire stop around the anchor connection, like Stubguard™.
  - 2) On the exterior ensuring that not only the balcony components are all non-combustible but also taking additional fire safety precautions. Adding soffits for example helps deflect heat, restricts the flow of oxygen and contains embers should items on a balcony be on fire.

This is particularly important given the prevalence of combustible items stored on balconies. Many residents make use of bamboo privacy screens, have combustible furniture and dry laundry on their balconies giving any fire ample sources of fuel. It is important therefore to limit the spread of fire from one balcony to another through features like aluminium soffits.

## Q: What balcony construction types are most common in fires?

A: Concrete is the most common balcony type in balcony fires. This is because there is often a significant build-up of waterproofing, insulation, plastic pedestals and decking structures which are often combustible. These elements are largely designed out on metal balconies reducing the fire risk.

In our research 60% of balcony fires occurred on concrete balconies while 30% had either combustible soffits or none at all.



## Standardised Yet Unique: Sapphire Meets Client Demands at Ocean Estate

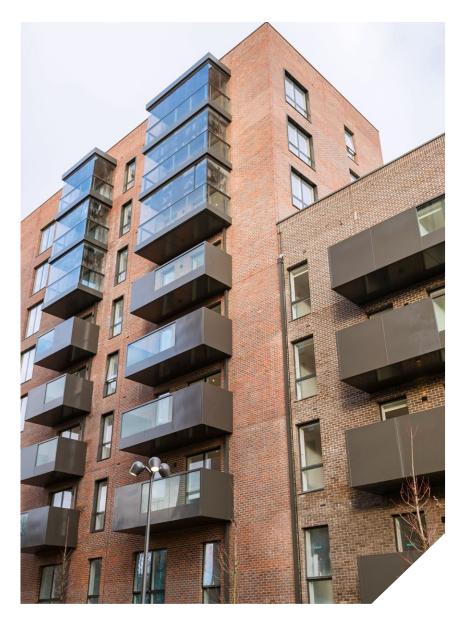
Ocean Estate site H was part of an award-winning £50 million regeneration scheme in Stepney Green. Once one of the country's most deprived neighbourhoods, the scheme aimed to rejuvenate the area into a safe, pleasant place to live.

he client wanted to achieve a unique design to fit the needs of the project and its residents while gaining the benefits of Sapphire's offsite modular solution.

Modular prefinished balconies save on cost and complication by opting for standardised fundamental components while delivering flexibility on key differentiating features.

At Ocean Estate the client wanted to provide residents with both privacy and light exposure by tailoring the balustrade design to these needs. The balconies on this project were unique due to the use of aluminium panel not only to the sides of the balcony, but in the front too. This provides additional privacy and security to residents while maintaining the added light and views offered by the laminate glass panels.

An extra wide handrail was also required to be designed to the exact specification as an additional detail. Sapphire designed and manufactured the custom handrail before installing it on the balconies



and delivered the full balcony units prefinished to site.

The aluminium panels, soffits and handrail were also designed with a very specific high gloss powder coating to add a custom sheen to the building exterior.

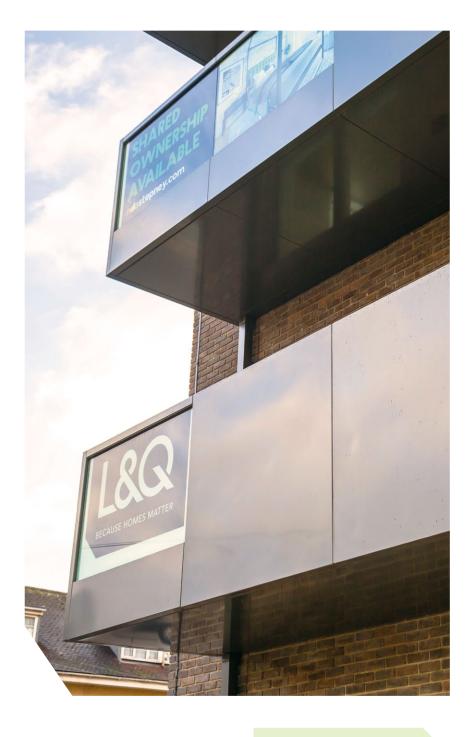
To ensure uniformity across the project the high gloss powder coating on the aluminium soffits and balustrade panels was matched to the colour of the winter gardens which were supplied by a third party. This coordination between the supplier of the winter gardens and Sapphire gave a seamless finish to the building with the benefits of the Glide-On™ system.

The specified high gloss powder coating was also at risk of being scuffed on site or in transit. These would have been particularly vulnerable to damage if the soffits, balustrading and handrail were to be installed on site.

However, due to their being completed offsite the main challenge was ensuring the balconies arrived in pristine condition and were appropriately secured in transit. To protect the balconies, they were each stacked on cushioned support blocks and nested securely on Sapphire's custom trailers.

Once on site the balconies simply needed to be lifted into position before installers, standing behind Sapphire's guarding system, helped guide the balconies onto the support arms. Once the balconies slide into place on the arms the bolts were tightened, and the final lengths of decking were fitted into place.

The balconies provide residents with much-needed private outdoor space in the bustling



London Borough of Tower Hamlets. The project has also enriched the lives of residents with vibrant open spaces and communal facilities. These efforts have led the project to win several awards including 'Best Place to Live' from the Mayor of London in 2015 and recognition in the Royal Institute of Planning's 2016 'Poverty, place and inequality' report.

#### **Key Stats**

Architect: **Levitt Bernstein** 

Contractor: Higgins

Construction

Installer: McKean

**Developments** 

Balconies: 68 Cassettes®

Storeys:

Location: Stephney Green,

London

## Roundtable Summary: The Shard, London

The Highrise Resibuild event at The Shard on the 6th February was a hive of activity with two morning roundtables, 7 CPDs and a keynote speech. The roundtables in the morning involved a gathering of industry influencers, one table discussed the challenge of reducing fire risk while the other debated speed vs quality and the value of MMC. For the remainder of the day we focussed primarily on fire risk in high rise residential construction with a range of CPD providers covering all aspects of high-rise construction.

At the fire roundtable attendees discussed recent residential fires and the standards followed by the industry. One example raised was the difference

between the construction and automobile industries. Car manufacturers must meet the minimum of the MOT standards. but this is the baseline not the standard they aim for. One attendee raised the point of the lack of standardisation in buildings arguing that while the car industry is driven by producing a high volume each building is based on an individual scenario. Hackitt identified this as a major need for change in the industry and that the focus should be on the outlook rather than box-ticking.

At the speed vs quality roundtable there was a lively debate about the benefits and concerns surrounding adoption of MMC. One point raised was that in modular construction there is a strong need to ensure all the components come together seamlessly. To achieve this, high standards of quality

control are needed with greater integration of suppliers.

At both roundtables the consensus was that in each industry challenge an important part of the solution is collaboration and cooperation between professionals throughout the supply chain.

A further point raised was the risk of a skills shortage and the impact this will have on onsite labour. A pitfall of on-site construction is the disparity between what is specified and what is carried out on site. A key point raised was the difference in offsite manufacture is the level of oversight and quality control that ensures the specification is fully carried out.



## Roundtable Summary: Auckland, New Zealand

In February we hosted our first international event in Auckland, New Zealand. The event was attended by and live-streamed to some of New Zealand's leading construction professionals to discuss the key issues effecting the industry.

While seismic and diagonal topics dominated a key point raised was the issue of drainage as New Zealand suffered significantly from the 'leaky balconies' crisis affecting buildings built from 1994-2004. Attendees discussed the difference in drainage strategy and the use of soffits in both the UK and NZ. Request your copy

of our drainage white-paper by emailing regan.cook@sapphire.eu.com

Fire was another important topic as New Zealand has a consultation coming up in June to review the regulations. It is expected this review will bring major change and some will be considering the action taken by the UK in the wake of the

Grenfell Tower fire. Post-fire stability was also a key concern for construction in NZ as well as a minimum of 1 hour fire rating for balconies.

The roundtable was enlightening and interesting as comparisons were drawn between NZ, Australia and the UK in managing key concerns around residential construction.









## 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















www.steelbuildltd.com T: 01234 376990 E: info@steelbuildltd.com

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

## COVID-19 Statement

The recent news about the COVID-19 pandemic has been at the forefront of minds throughout the industry as it transforms all our working and personal lives. At Sapphire we value the welfare of staff, our clients and supply chain above all else.

In light of the government's guidance all office staff are now working from home and we have closed our head office until further notice. We will continue to manufacture balconies while strictly following government guidance regarding social distancing and hygiene. Many of our facilities have implemented multiple shifts to limit the number of staff working at any one time while maintaining production.

In these unprecedented times we are striving to support our supply chain in any way we can.



### How does this affect clients?

Our business model has been designed with risk management at its core. Thanks to our offsite manufacture and Rigid.Ready. Right. guarantee our clients can rest assured that their balconies will be ready for delivery whenever sites need them.

The Ready element of our brand promise ensures that all balconies will be prefinished 1-2 months ahead of our clients' required installation date and safely stored in our secure facilities. This means that in the

current climate we have ample time to ensure the balconies are complete without impacting work on site.

We have been and continue to work closely with our supply chain partners to understand their position and ensure the continuity of our supply. Fortunately, we have a sophisticated supply chain with a range of suppliers in numerous locations around the world which allows us to shift our supply quickly and efficiently.

We sub-contract our final manufacture and assembly across 4 separate supply-partners in various locations in England which means that a crisis in one part of the country or at one of our plants does not affect our total output. Production is monitored daily allowing us to switch manufacture between plants within a short space of time.

Thanks to our offsite manufacture and Rigid.Ready.Right. guarantee our clients can rest assured that their balconies will be ready for delivery

By maintaining close connections with these partners, we can mitigate disruption and ultimately cushion our clients from any changes.



#### How does this affect our supply chain?

It is clear for many across the industry that the supply chain is inevitably under pressure.

In these unprecedented times we are striving to support our supply chain in any way we can.

We are maintaining contact with suppliers and offering improved payment terms on a case by case basis. We continue to make payments as agreed but invite any vulnerable suppliers in need of a review to contact us to discuss how we can work together to overcome these challenging times.

We are confident that we have done as much as possible to mitigate and limit the risks that the current situation poses. I believe we are well-placed to weather a potential disruption of between 1-8 weeks without jeopardising our commitment to fulfilling your requirements.





