

INSIGHT

THE NEWS MAGAZINE FROM SAPPHIRE



**Combustible
materials ban:**
Unsure of how
to conform?
Ask the experts.

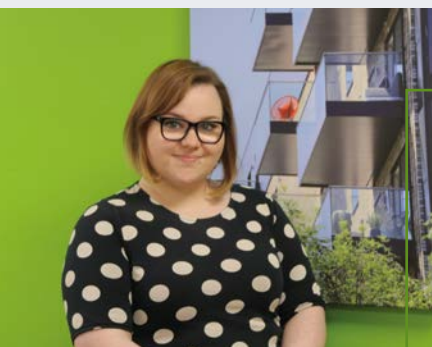
2019
Q1

Does 'The Ban' ban
balcony decking?

Read more on page 12

PLANT PROFILE
*Spring-
flowering
trees*

of blossom provides a
vibrant sight at the end
of winter when the trees
are in full display.
They are also a great
choice for planting in
containers.



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



Event Coordinator

Hello I'm Regan, 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 regan.cook@sapphire.eu.com



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

Editor's Overview

In this issue of Insight the focus is on fire and the drastic changes the industry faces as a result of the government's ban of combustible materials in high-rise residential developments. The ban has spurred significant changes and left some reeling unsure of how to conform to the new requirements. In this issue we will explain the key points of the new legislation with expert advice from Andrew Parsons and present a non-combustible decking option with a guest feature from our supply chain partner, MyDek.

42% of balcony fires in the past 2 years were caused by cigarettes.

£200m Government Cladding Fund Announced

The government has announced a wave of funds totalling £200m to be made available to building owners to replace combustible cladding on private high-rise buildings.

Following the tragic fire at Grenfell Tower, 176 privately owned high-rise residential buildings were identified as at risk due to the use

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of aluminium composite material (ACM) cladding. The vast majority of these have failed to replace the cladding and many have

to pass responsibility to leaseholders and residents instead.

Communities Secretary James Brokenshire MP said "I am now calling time on the delay tactics of others. If these reckless building owners won't act, the government will". Owners will have 3 months to access the fund.

Strategy Day Success

Sapphire launched its strategy for 2019 at a successful company event featuring fun-filled team activities and presentations. The day provided the perfect opportunity to combine a mix of humour and serious thinking as the team reviewed the company's strategic objectives for the year.



A video montage can be viewed at www.youtube.com/watch?v=JB8m9IGgWZg
The event inspired the team and solidified the Sapphire vision for 2019.



Charity Events

Sapphire Staff Support the BHF London to Reading Bike Ride.

On 23rd March 5 members of Sapphire staff supported the British Heart Foundation's charity bike ride from London to Reading. Nick, John, Ruth, Hannah and Jo all lent a helping hand distributing food

and refreshments to the riders provided by the Rapid Relief Team.

The event raised funds for research into life saving treatments for heart disease and other circulatory conditions. A big congratulations to all involved in supporting such an important cause!



NHBC Reveals 2018 Registrations

Developers registered 159,617 new homes with NHBC during 2018, a 0.5% decrease on in 2017. The private sector was down 1%, with the affordable sectors and new home completions essentially level.

Over the year, 8 of the 12 months showed an increase in registrations on the previous year. Including 7 straight months of growth following the slow start to the year due to freezing weather conditions and uncertainty around Brexit. Q4 saw a 2% increase in the UK's new home registrations.

Overall, there was growth in 6 of the 12 UK regions in 2018 compared to 2017. In London, new home registrations were down 10% in 2018 at 16,069, with the private housing market bearing the brunt of continuing political and economic uncertainties.

"The full year figures of nearly 160,000 new home registrations demonstrate the resilience of the UK housebuilding industry. 2018 was a demanding year, with the extreme weather conditions in the early part and the continuing political and economic uncertainties, which are extending into 2019."

Steve Wood – NHBC Chief Executive

Building Better, Building Beautiful

The housing minister Kit Malthouse has called for a “golden period of housebuilding” with housebuilders “building the conservation areas of the future” to win over communities. Sending a message to the recent Ministry of Housing, Communities and Local Government’s Better Design for Better Places conference in Birmingham, Malthouse said that with the increase in housing output, he was seeing more resistance to development from a design perspective. “People are feeling what’s being designed is ubiquitous and not

fitting in with communities,” he explained.

With the government’s target of 300,000 homes a year, “there’s going to be no part of the country untouched by construction,” Malthouse continued. Under the government’s Building Better, Building Beautiful Commission, launched last Autumn, he said the focus will be on beauty and design and he hoped to “persuade” the industry to collaborate with residents to create places that would enhance communities and instil pride.



The conference, which addressed various aspects of design quality and what constitutes beauty in the built environment, also featured discussions on the challenges for government in delivering design quality. These included defining good design, sustainability and the housebuilder role.

Developing Urban Centres

A report by planning and development consultancy, Turley, says that more than 45,000 homes could be delivered by developing existing vacant space in UK town and city centres. It says town centres need to embrace

mixed-use development to thrive in the future and that there is currently 8 million sq m of unused floor space across the UK’s urban centres.

The report says that adopting this approach could deliver much needed housing and

help turn around the fortunes of places that are currently struggling. It also said that consideration should be given to the heritage of an area and the quality of the public realm available.

Modern Methods Momentum



Since Mark Farmer’s ‘Modernise or die’ report was published in 2016, Modern Methods of Construction

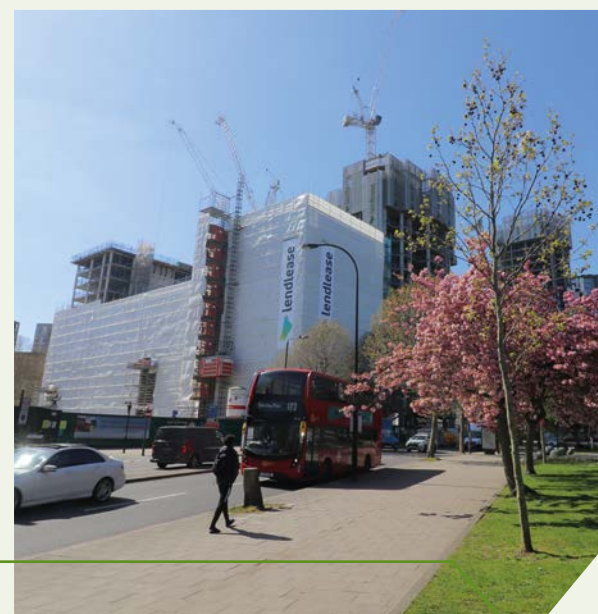
(MMC) or Offsite manufacturing has been under the spotlight. There has been a significant increase in the number of publications and events surrounding the topic, as well as many developers heading for the potentially priceless ‘early-adopter’ title.

In recent years we have seen some major players purchase

their own manufacturing facilities to allow for panelised and volumetric production. Those not committing to such a high level of investment, are instead turning to offsite contractors. This enables them to benefit from increased delivery time & efficiency.

One thing is clear, MMC is a trend to watch out for.

In Brief



This Lendlease development at Elephant Castle will provide residents with a view of the hustle and bustle of South East London from their Sapphire balconies.



Balconies installed without a crane in limited space at Media City using our roof hoist.



At Trinity in Salford we successfully installed 134 balconies in 6 days, setting a new record! In this image 2 balconies are being installed simultaneously.



Balconies arriving on site at Royal Arsenal using our specialised double stacked trailer.

Sapphire's Innovative Thinking Meets the Demands of Kenavon Drive

Sapphire's flexibility and collaboration proved to be essential at Kenavon Drive allowing significant challenges in the design and install of balconies to be overcome with ease.



The project included several types of balconies and required anchor solutions for each application. This was particularly complex in the corner balconies which required a non-standard bracket.

While the weight of steel and concrete balconies requires substantial penetrations into the slab, Sapphire's aluminium Glide-On Cassette system is lightweight meaning the number of anchors required could be significantly reduced for the client.

For this project Sapphire developed an innovative corner arm and two-piece corner balconies, to overcome the potential deflection issues and the complex interface at the corners.

The project called for 82 Cassette and 71 Juliette balconies which were prefabricated offsite to production line quality standards at Sapphire's production facility in Winchester. A lean one-piece flow production method was utilised to ensure optimum efficiency and precision in the finished balconies. The balconies were finished ahead of the agreed date, safely stored in Sapphire's designated facility and delivered to site when required on a combination of simple flatbed lorries and some lorries with hiabs.

Whilst most balconies were installed using a tower crane, some balconies needed to be installed without it to reduce the cost to the client. This required value engineering and specialised planning from Sapphire for both delivery and install.



Some were installed using a telehandler, while others used the hiab lorries dramatically improving the financial efficiency of the scheme by limiting the number of days a full crane was required.

The balconies were secured and lifted into position before sliding on to the precast support arms and locked into place by installers working from inside the building. The Glide-On™ system does not require installers to work below a live load but rather work from inside the building behind a protective barrier, dramatically improving health and safety standards on site. Only once the balcony is securely locked into place do installers step onto it, finish placing the decking and detach the crane's sling.

Safety standards were further maintained for workers installing

corner balconies by using a Syam harness system which prevented potential falls from the leading edge.

The Glide-On™ system does not require installers to work below a live load but rather work from inside the building behind a protective barrier, dramatically improving health and safety.

Drainage was another concern for this project as the NHBC required the larger balconies over 6 square meters be prefabricated with positive drainage. The smaller balconies on the other hand, were fitted with controlled drainage to

a drip edge at the front. A study of these drainage solutions was done during residential occupation to determine their effectiveness.

You can view a video demonstrating the difference in the case study at the following address <https://sapphire.eu.com/case-studies/kenavon-drive-reading/> ■

Key Stats

Architect:	Goddard Manton Architects
Developer:	Bellway Homes
Contractor:	Bellway Homes
Balconies:	82 Cassettes® and 71 Juliette
Storeys:	7
Location:	Reading, Berkshire

Ask The Expert

Following the tragic events at Grenfell the government has published regulations banning the use of combustible materials in external walls of high rise buildings, and confirmed this now includes balconies.



Andrew Parsons

From 1992, Andrew has always been at the forefront of our technical design. His seat on the BSI committee for balconies gives testament to his technical expertise.

Q: How do the regulations impact balcony construction?





A: It is now mandatory that balconies located within 1m of a relevant boundary or situated more than 18m above ground level must have non combustible decking. The new regulations came into force on 21 December 2018. The regulations do not apply where an initial notice has been given to, or full plans deposited with, a local authority before that date.

Q: Does Sapphire offer a Class A decking solution?

A: Yes. Sapphire is working with MyDek who have developed a ribbed aluminium decking in a range of finishes which carries a Class A classification.



Further Resources

-  Cladding ban summary
-  Fire whitepaper
-  Fire CPD presentation
-  Fire test videos

Access them at:
sapphire.eu.com/balcony-fires

Q: Does the addition of a balcony soffit reduce the spread of fire?

A: Following extensive research by Sapphire at the Exova test centre in Warrington, we discovered that a suitable soffit to balconies offers a substantial contribution to limiting the spread of fire on domestic balconies, for a number of reasons including;

- a) Limiting the supply of oxygen feeding the fire from below.
- b) Preventing burning debris from falling from the burning balcony.
- c) Reflecting and deflecting the heat rising from the fire, and thus preventing it reaching the balcony above.
- d) Deflecting jetting flame from an apartment fire away from the building.

Q: Do Sapphire balconies thermal break connections comply with the new legislation?

A: Yes. Sapphire use a material of limited combustibility in their thermal break. The product is generally located just above the fire barrier, and encapsulated between steel plates, so the possible exposure is extremely low. The revision to AD B confirms this meets the requirements of the regulation.



Salford's Lightbox Highlights Benefits Of Balcony Collaboration

A landmark residential development in Greater Manchester showcases the benefits of offsite-built modules to complete external elevations and collaboration between designers and manufacturers.



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The Lightbox is a twin 19-storey project, delivering 238 waterside apartments – configured as studio, one, two or three bedrooms – for private sale. It is part of the Peel Group's massive Media City development at Salford Quays.

Media City is a major news and entertainment hub, reflecting the decentralisation of broadcasting. The overall development also includes academic and commercial space, hotels and apartments.

The Lightbox project was designed by AHR Architects and built by Bouygues.

Sapphire was contracted to produce 380 Glide-On™ Cassette® balcony units for the Lightbox. There are more balconies than apartments because many of the south-facing three-bedroom corner apartments have spectacular L-shaped balconies consisting of two glide-on units, mitre-jointed.

A key objective for Sapphire was to work with ARH Architects to ensure the design vision was protected and retained in the final built solution. To achieve this, and within budget, Sapphire worked closely with the architects and cost consultants.

Collaboration began with Sapphire visiting the architects to gain an understanding of their vision for the project. Sapphire then produced CAD drawings,

visuals and material samples to assist in decision making. Before the final decision was made, a team visited another Manchester development where a Sapphire-accredited installer completed 34 Cassette® balcony installations in one day.

This close collaboration mean the developers had a buildable solution for balconies that retained the original design aesthetics and incorporated the Glide-On™ benefits - yet was value-engineered to minimise costs.

The balcony design chosen from the Lightbox is based on a cast-in anchor incorporating thermal breaks. This underpins Sapphire's promise of rigid, bounce-free balconies with half the deflection of BS EN limits. Stub brackets were used to allow clear passage for mast-climbers – as well as providing mast fixing points without further façade penetration.

The standard 400mm aluminium-framed Glide-On™ Cassette® features 8+8mm thick clear toughened Crystal® structural glass panels laminated together with a 'Arctic White' obscure 1.5mm PVB interlayer. Top rails are brushed satin effect anodised aluminium capping.

Decking is Enjura WPC composite, fixed with hidden clips. Soffits are of polyester powder-coated aluminium panels, positively draining to the rear and connecting to hopper and downpipes. The Glide-On™ Cassette® units were manufactured at Thetford, Norfolk – one of Sapphire's two



UK facilities set up for custom offsite building on an efficient and quality controlled production line. The units were manufactured and stored complete and ready for delivery in line with the site programme.

Significant cost savings were achieved at the Lightbox through use of Sapphire's innovative roof hoist to lift the balconies into position. The hoist – devised for an earlier contract that Sapphire took over when a competitor ceased trading – allows crane-free installation, so Bouygues was able to strike the tower cranes earlier than expected.

Balconies are efficiently and quickly installed from inside the building. This means installers

work under the safest possible conditions and do not need to step on a newly installed balcony until it has been firmly fixed in place ■

Key Stats

Architect:	AHR Architects
Developer:	Peel Group
Contractor:	Bouygues UK
Installers:	McKeans
Balconies:	379
Storeys:	20
Location:	Manchester

Class A Decking Beyond the Ban

While Grenfell provided probably the worst-case scenario of fire-spread in a residential building, deficiencies in the design and construction of balconies in other apartment buildings have led to considerable damage during balcony fires.

Often traced to irresponsible use of disposable barbecues and cigarettes, balcony fires tend to cause extensive damage to the apartments directly involved and their neighbouring units. As a result, fire authorities have frequently warned about the risks of open-fire cooking, scented candles and smoking on balconies.

In response to this push for higher standards of fire resistance in decking for tall residential buildings, manufacturer MyDek has developed a Class A-rated ribbed aluminium decking board that takes balcony safety to new heights.

With all the practical and aesthetic benefits of the earlier Class B-rated wood plastic composite (WPC) decking products, the aluminium version simplifies compliance with tighter fire prevention regulations – and enhances future residents' confidence in the safety of their homes.



Identical in profile to many WPC boards, the new aluminium decking poses no new difficulties for balcony designers, manufacturers or installers – and it looks perfectly 'normal' to owners and tenants. It is also extremely durable, even in environments of increased corrosiveness.

It's expected to be in big demand as 450 tall residential buildings are already in the pipeline for London, and significant growth is likely in other cities experiencing heavy demand for inner-city accommodation with limited development sites.

Sapphire's Cassette® system balconies are based on Class A-rated metal joists. Lessons from the past are incorporated in the evolving design of Sapphire's balcony systems, and the company has for some time recommended the use of aluminium soffits, which have been shown to reduce the possibility of rising or falling embers affecting surrounding balconies. By switching to ribbed aluminium decking to increase the Class A content, these balconies become fully compliant with the latest regulations.

"MyDek are delighted to introduce the Safe, Smart and Sustainable option for fully non-combustible decking to the market. We've put the product through extensive testing to ensure that it delivers excellent quality, high performance and a long-lasting sustainable solution".

Richard McMullan - MyDek



WWW.ENJURA.CO

Technics:	Wood Plastic Composite(WPC)
Raw Material:	55% Grade A Recycled wood+35% HDPE+10% Additives
Size:	140x21mm (width x thickness) 146mm module inc gaps between deck boards
Length:	3m standard or up to 6m
Weight:	2.55 Kg/m and 20.35 Kg/m2
Design:	Solid boards with grooves for fixing clips
Manufacturers Warranty:	15 years
Slip Rating:	44 PTV when wet 78 PTV when dry
Certificates:	CE EN 14041, BV, SGS (ASTM standard), ISO 9001, ISO 14001, FSC etc



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FIND OUT MORE, SEE OUR
VIDEOS OR REQUEST SAMPLES



NOW AVAILABLE AS CLASS B
OR C FIRE RATED.
(SUITABLE FOR USE BELOW 18M).

ENJURA

Deck finishes which endure



"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 Fountains



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Extra Care With Tolerances Showcases Sapphire's Balcony Skills

Fifty Sapphire balconies grace a six-storey 'extra care' facility – part of a major new residential development on the outskirts of Reading, Berkshire.



Just two miles from Sapphire's head office, the project is set to become a show-piece for successful solutions to balcony challenges. One of these is guaranteeing a bounce-free rigid structure: this is a hallmark of Sapphire's products – a feature sure to be welcomed by future residents. Designed for couples or singles over 55, the 73 spacious two-bedroom apartments for outright sale or shared ownership at Huntley Place provide

a community lifestyle with 24-hour extra care available if needed. The property is managed by Home Group. The building, designed by Broadway Malyan architects, is an integral part of the Green Park Village project, developed by the Berkeley Group's St Edward division. The lakeside development also includes a variety of housing options, apartments, primary school and a transport interchange incorporating a new station

on the Reading-Basingstoke railway line. Challenges on the extra care project for Sapphire included a mix of straight and two-part angled protruding balconies as well as inset balconies, which were complicated by a tight fit with surrounding brickwork. To meet the client's requirements and achieve the best solutions for the 50 balconies required, Sapphire was able to design in appropriate additional tolerance.



Sapphire's Glide-On™ aluminium Cassette® balconies with Crystall® frameless structural glass were specified. Anchors with thermal breaks were cast into the floor slabs and two-piece steel arms were attached. Standard 400mm modular Glide-On™ Cassette® balconies were factory assembled with integral deck and soffit at Sapphire's Winchester production facility. After passing strict quality control checks throughout the manufacturing process, the completed balconies were stored, ready for delivery to site on schedule

– as at Green Park Village – from the top down, while scaffolding is being struck. This helps to save time and cut building costs. As with all Sapphire's Glide-On™ installations, were able to fix each balcony to its arms in complete safety, working from inside the building. And as Sapphire balconies are delivered fully built, all that remains to be done is to replace the Enjura WPC composite decking sections over the fixing points. All the balconies at the extra care facility have 21.5mm clear toughened laminated structural glass panels with a screen-

The panels are topped with 22x22mm U-shaped powder coated aluminium capping. Soffits are of polyester powder coated aluminium panels, free draining to the front of the balcony. Fully modular construction of Sapphire balconies streamlines the installation process by avoiding the need for multiple trades on site. This means fewer people are involved so significant overall scheduling benefits are achievable ■

On site, balconies were slid on to the stainless steel arms by Sapphire's innovative Counter Balance Lifter.

On site, balconies were slid on to the stainless steel arms by Sapphire's innovative Counter Balance Lifter. This offsets the hook of tower or mobile crane, enabling balconies to be installed printed obscure band to conceal the balcony frame. The glass is mechanically fixed to the Cassette® with bobbin point fixings, polyester powder coated to match the obscure band.

Key Stats

Architect:	Broadway Malyan Architects
Developer:	Berkeley Group
Contractor:	St James Group
Installers:	D&A
Balconies:	98
Storeys:	6
Location:	Reading, Berkshire

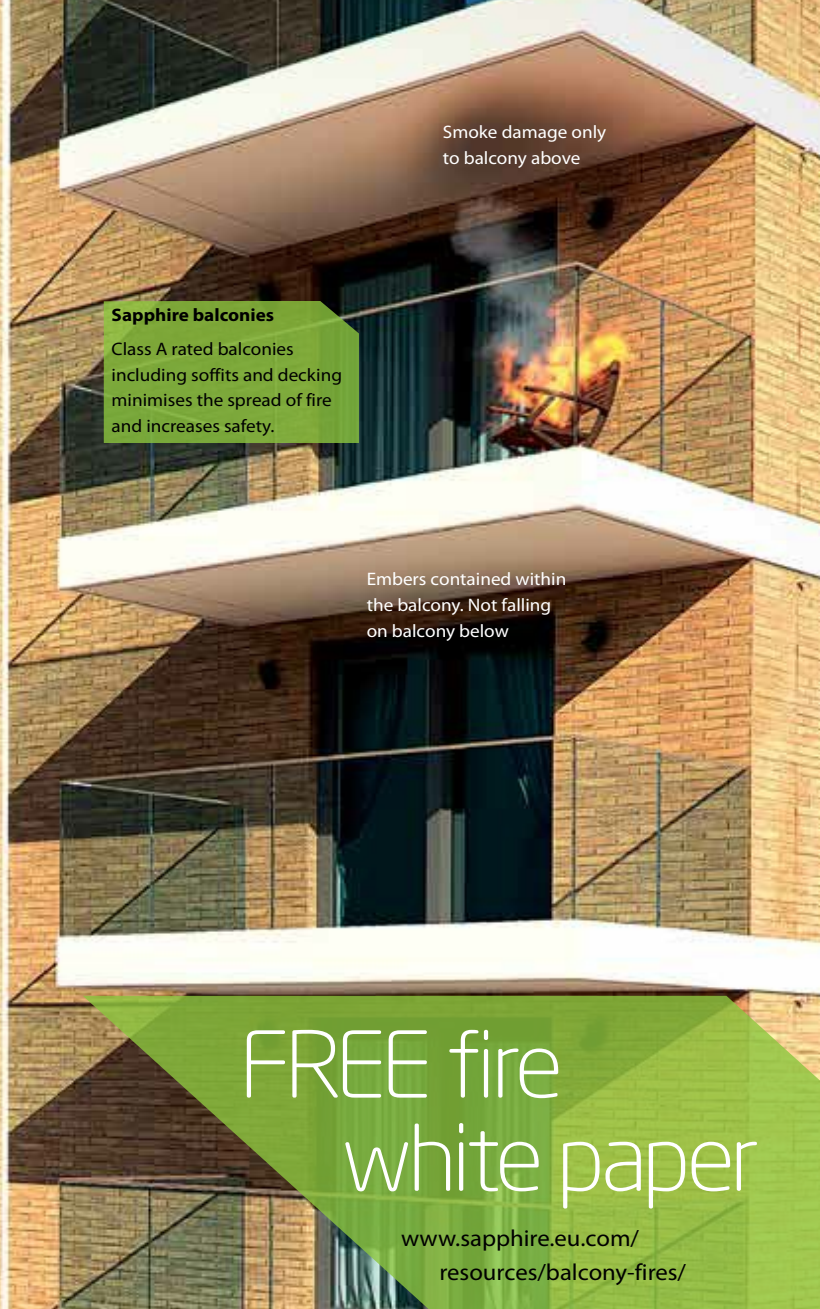


**Traditional approach
(Now banned above 18m)**

No soffits and timber or WPC decking means that fire spreads quickly above and below the source of the fire.

Fire spreads to balcony above

Embers drop to the balcony below



Smoke damage only to balcony above

Sapphire balconies

Class A rated balconies including soffits and decking minimises the spread of fire and increases safety.

Embers contained within the balcony. Not falling on balcony below

FREE fire
white paper

[www.sapphire.eu.com/
resources/balcony-fires/](http://www.sapphire.eu.com/resources/balcony-fires/)

Minimise the danger of balcony fires

Your challenge

Specifying compliant, safe, and beautiful balconies.

Our Solution

Sapphire's proactive approach minimises the risk of fire spreading via balconies. Sapphire Cassette® balconies incorporate Class A rated aluminium soffits and decking to increase safety.

Call 0844 33 00 356 | www.sapphire.eu.com