

T INNOVATING Times

MEET THE ARCHITECTS

James Gott and Artur Zontek discuss how IG Masonry Support Systems assisted in the Oriana Project.

RE-EVALUATING ROOF WINDOW SPECIFICATIONS

New research points to the benefits gained by re-evaluating roof window specifications.

BEYOND THE STANDARD

Jeff Colley, the man behind Passive House Plus discusses building and upgrading to the world's leading low energy standard - Passive House.

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It's good to talk!
Collaboration lies at the
heart of successful construction.
At Keystone we use it to
drive innovation.



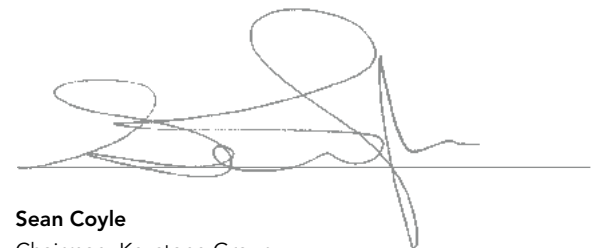
The concept of collaboration between building designer and material producer will increasingly become a reality for all sorts of reasons, not least, the need for clarity on suitability of use, performance and certification.

At Keystone Group this is already a reality as we have long encouraged close co-operation with stakeholders in the design and construction process. These discussions feed into our drive for innovation, aimed at improving a building's performance and enhancing the professionals experience in the specification or construction process.

It's satisfying to have this approach validated by our numerous industry awards but the real gain comes from the knowledge that our investment in innovation is changing the industry for the better. We provide solutions for important issues such as energy saving, aesthetic appeal or the safety of those working on construction sites across the UK and beyond.

We are an independent, free thinking group and we welcome your input. We want to hear about the challenges you feel need solutions, or to talk about opportunities you see for change. So I hope that this edition of Innovating Times will spark your imagination and inform you about the impact our approach is making.

I look forward to hearing from you.



Sean Coyle
Chairman, Keystone Group

Construction 2015 strategy. The joint strategy from Government and Industry for the future of the UK Construction Industry is targeting lower costs, faster delivery, lower emissions and improvements in exports to position the UK at the forefront of international construction. This framework forms the basis of the government's BIM hypothesis:

“Government as a client can drive significant improvements in cost, value and carbon performance through the use of open shareable asset information.”

What is the REAL WORLD opinion of BIM?

We asked
some architects
what is the real world
opinion of BIM?

HGP Architects



Matthew Williams
Director
HGP
Architects

At HGP Architects, our first piece of BIM software was brought in 18 years ago; we started using archiCAD back then. BIM is just a term really for building information modelling bringing a database of essential information together, we have used it ever since. Since then we have purchased over 60 licences, 30 archiCAD and 30 Revit licences. I believe we are one of the most advanced in that area and often you hear Architects saying, they are BIM friendly.

Joe Fallon Architecture & Design



Joe Fallon
Director
Joe Fallon
Architecture & Design

As a director of a small architectural practice employing 5 Architects, 3 Architectural Technologists based in Dundrum, Dublin 14, we are slow to embrace BIM into our company. The main issues would be that we work with a close network of consultant engineers and QS's who have not adopted the system, and hence we cannot interact with their software. Also it is not linked to tendering for government contracts in Ireland. For a small practice it is a big commitment financially to train up staff, and purchase software when it is not a necessity, albeit we are impressed with its capability. The majority of our peers would have a level of knowledge of BIM from a CPD event.

Doherty Architects



Michael Doherty
Director
Doherty
Architects

At Doherty Architects, we started out on our BIM journey back in 2007. We took the plunge and at the time abandoned our 2D CAD software so that we could fully immerse ourselves in BIM.

While 'Statutory' BIM means compliance with the PAS 1192 standards, we have always worked on the basis that the benefits of BIM can and should be tailored to suit all scales of project.

What is clear from our experience, is that BIM is and will always be a journey. Our BIM processes have developed as standards have been published and our knowledge of software has increased. As software has developed with computing power, so too have our opportunities to take advantage of new features.

BIM as 'What You Model Is What You Get' will continue to place more and more emphasis on building performance, functionality and aiding the processes for delivery, all with increased real time feedback. At last BIM means we are in the territory of Computer Aided Design (rather than Computer Aided Drawing) and our designs are better for it. BIM is here, but here is an evolving place.

Oriana Oxford Street London

Glazed Brick Panels & Brick Slip Columns



Oriana is a major redevelopment scheme situated on Oxford Street in the heart of London's West End. This large mixed-use development completely modernised the retail landscape, transforming the elevations of numerous commercial properties, as well as creating beautiful residential spaces, many

with rooftop access, facilitating panoramic views looking across the city skyline. Oxford Street is recognised as the UK's busiest shopping street so minimising disruption was an important consideration within the design process. The logistical challenge was to ensure retail businesses could continue to trade during construction.

The use of offsite prefabrication significantly reduced the impact on productivity from factors such as weather and skill shortages, enabling the contractor to achieve a faster pace of construction. IG's brick slip components provided an effective means of achieving glazed brick façades, produced entirely offsite.



■ Areas highlighted above supplied by IG Masonry Support

Residential / Commercial Development

Oriana Oxford Street
London

Products Used

Glazed Brick Panels
& Brick Slip Columns

Architect

ESA
Architects

Contractor

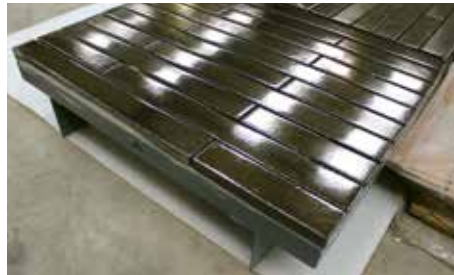
Galliard
Homes

Brickwork Contractor

Claylens
Mills

The Challenge

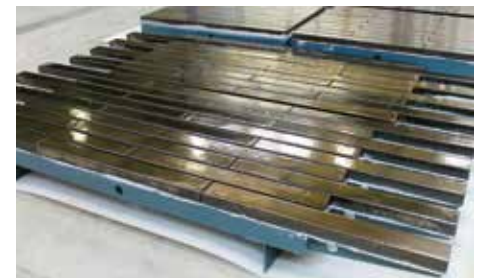
Construction on this scale in London's West End presented very challenging site conditions. Where possible, modern methods of construction were implemented in order to minimise impact on the local retail and residential community and to achieve a faster delivery of this extensive scheme. Offsite construction provides benefits including reduced disruption from vehicle movements, less impact from construction related noise and air pollution. In addition, this approach is credited with the creation of a safer onsite working environment.



The factory produced panels were installed onto Metsec's steel framing system, providing the contractor with maximum adjustability, ensuring seamless assembly of the elevation onsite. Brick slip columns, varying considerably in height, were a re-occurring architectural feature throughout the residential elements of the scheme.

IG produced prefabricated glazed brick slip panels for the front retail façades at Schuh Kids and Sketchers, utilising grey and gold Pyrolave glazed brick types. IG liaised with Metsec to ensure the steel framing system and glazed panels worked together to facilitate effective installation onsite.

Panels were designed in manageable components that could be lifted by hand. The interlocking units slotted together to achieve the bond pattern throughout each elevation, accommodating the two different brick types.

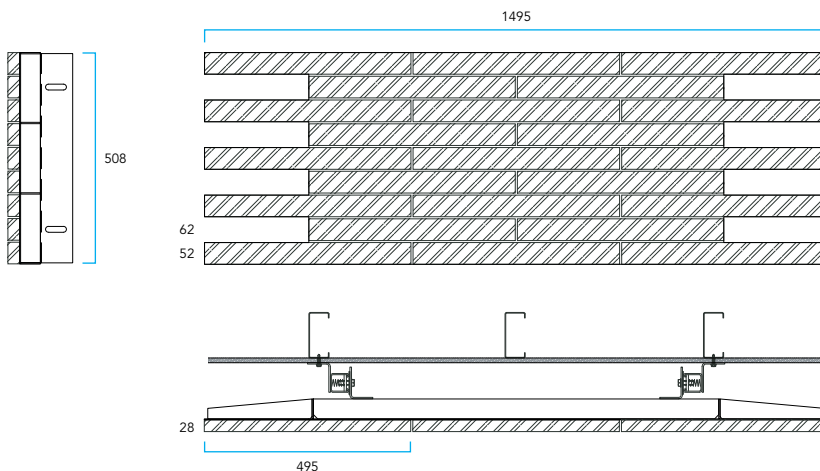


The Solution

IG Masonry Support developed numerous prefabricated building components for a range of different brick detailing applications, including bespoke glazed brick slip panels as an effective means of creating entire façades of glazed masonry.

IG identified a solution capable of achieving columns scaling up to three storeys high. Due to limited storage and handling areas onsite, all prefabricated components were designed in manageable sizes and delivered in accordance with the just-in-time inventory strategy employed onsite.

The brick slip columns were produced in various sizes from 2m to 3.4m in height and accommodated two different brick types, Charnwood Coral red and Stamford Buff. The base and top plate of the columns bolted together allowing the contractor to connect units as they advanced up each storey. The highest column assembly was 9950mm consisting of three columns, restrained to the building's steel frame at each level.



FIND OUT MORE

IG | Masonry Support

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igmasonrystsupport.com

Meet the Architects behind the Oriana Project

WITH
JAMES GOTT
& ARTUR ZONTEK





Scott Denham, IG Masonry Support recently met with Design Director James Gott and Associate Director Artur Zontek of ESA Architects, the men behind the Oriana project.



WHO ARE ESA?

ESA Architecture is over 100 years old and was acquired by Capita in 2012. ESA is one of the UK's leading architectural practices with over 90 staff and offices in London, Cardiff and Manchester.

They focus on providing excellent design and delivery of architectural services. Their projects span offices, residential, retail, heritage, hospitality, transport, interiors, urban design and mixed-use sectors and range in value up to around £100 million.

ESA is a multi-faceted practice and embraces small projects to new build residential and commercial. They deliver sustainable, high-quality and inclusive environments that deliver value for their clients, whilst also providing communities with places and spaces which aspire to form a positive impact on peoples' lives now and into the future.

INTERVIEW ARCHITECT IN FOCUS



What keeps you alive to Architecture?

JG I still get a thrill when a project completes onsite and I get to see the ideas that have started life as a idea in my mind evolve to manifest in reality. It is this transition from a sketch to a space you can inhabit and emotionally connect with that still drives my engagement with architecture. With the scale of projects such as Oriana this process escalates to form the walls of the urban spaces in which we live, work and play.

I believe that architecture keeps its fascination because it is the synthesis of a collaboration of many people bringing their unique skills and interests together into psychological expression. It is because of this that every project offers something new and leaves an enduring marker of this process.

Describe the appeal of the Oriana Project?

JG Oriana is a good example of a multi-faceted project where residential and workplace uses coalesce with the country's busiest and most famous shopping street.



Oriana is a very good example of a multi-faceted project, it is about retail and residential in Oxford Street.



The challenge was to create quality multiple use city centre spaces, living, working and shopping. It is a great example of a series of potentially conflicting social activities coming together successfully and forming an expression through architecture. The constraints for the Oriana project were highly complex so the journey with Oriana involved understanding all the constraints and finding a narrative that harmonised these into a coherent form.

Did the client impose a blueprint from the outset?

JG Absolutely not. The original meeting was a blank piece of paper from a design point of view. It was a difficult site to construct and as the scheme evolved it turned into mixed-use scheme with retail, office and high-end residential. It was commercially driven architecture that understood that high quality design adds considerable value for the client. The project was highly complex in its form which added to the constraint of what could be built within the envelope. I would liken it to a Greek town that develops in a series of open and closed boxes and it became a virtual mountain of connected forms which finally delivered a narrative of residential, courtyard terraces and secret spaces.

Do you have a favourite among ESA's many award winning projects?

JG Oriana has got to be one of my favourite projects. It started in 2008 and was only completed in 2017. I had a 9 year involvement with Oriana in what has probably been my most drawn out and complicated project to date.

AZ Oriana would also be a favourite for me. It was incredibly multi-faceted, combining bits of new build with old and encompassed everything that architecture has to offer. It presented challenges dealing with different façades and elevations including that of Oxford Street itself. Oriana ticked all boxes for an architect because even though it evolved so much from the conceptual ideas, it was built pretty much as designed. There is so much life going on in the West End that you don't see unless you live there, it's really a secret haven.



How did IG Masonry Support Systems help you solve the project's challenges?

AZ When we started to look at the technical aspects of how to build this complex design we investigated several different scenarios. Originally, we felt we would do everything in precast concrete but access restrictions, the dense population and heavy traffic forced us to reconsider. We had no onsite storage and high capacity cranes were not an option so we had to consider how we could deliver elements onsite and these needed to be smaller and lighter.



Oriana would be one of my favourites. It was incredibly multi-faceted with bits of new build and bits of old build and encompassed everything that architecture possibly can.



The solutions from IG Masonry Support systems offered vastly reduced weight than precast and the individual brick detailing elements were smaller and much easier to handle onsite.

AZ During the design process we found a visit to the IGMS factory to be really beneficial. We discussed the problem with IG's engineers and agreed practical solutions. It was also helpful to see the process of manufacture first hand and discuss how we could use the different shapes of bricks and different application of Masonry Support lintels. I think it's fair to say this type of interaction with the material supplier added value to our design process.

The use of Brick Slip Feature Lintels and IG Masonry Support is growing rapidly. What do you find appealing about brick work and its future application?

JG As a young architect in the 90's I was opposed to brick as I felt it was traditional and didn't celebrate contemporary architecture. For the first 10 years of my career I rarely specified brick, then I had a project situated in a conservation area and really looked at brick closely for the first time. During this time, I discovered the beauty of brick and value of materials that weather and develop a richness over time.

I found some of the contemporary architecture that I had loved became dated because of trends in materiality and form and I started to re-evaluate what created timeless architecture. The successful historic use of brick made me realise brick had longevity beyond the cult of the new, appreciate the introduction of colour to a scheme with the natural tones of clay and understand the many variations of brick with hard or soft edges. For the Oriana project different types of brick were used in conjunction with different mortars. Contemporary glazing design sits well against brick detailing and has led to the renaissance of brick use. Good architecture should be timeless and there is a real option to use brick creatively.

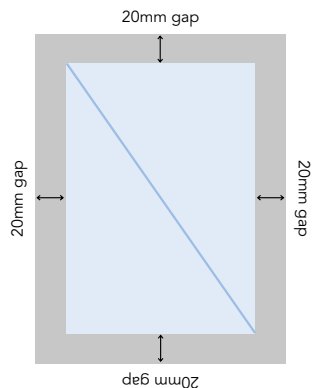
AZ IG Masonry Support offsite Brick Slip System solved the very real problem of non-availability of specialist brickwork skills onsite. The flying beams in our Oriana design could not have been built in the traditional way so we had to look for modern methods of construction. I love brick, it gives texture and scale, and 20 years down the line the weathering will look good.

New research points to the benefits gained by re-evaluating roof window specifications.

Roof windows are one of the products which many specifiers choose to ‘stick with what they know’.

But now, new research into the issues surrounding the installation of roof windows shows that a fresh approach is required, discounting the idea that re-using previous specifications for roof windows will guarantee a satisfactory result.

The issue stems from the 20mm gap which by default is left around roof windows during installation and to understand its impact, Keylite has commissioned several pieces of research by the industry’s leading technical experts.



The first piece of research, carried out by BRE, investigated the impact of thermal bridging on roof window installations. The startling result from the BRE study showed that, for many buildings, a thermal collar around the roof window would be necessary to prevent condensation and mould growth. What makes this so important is that Keylite’s research suggests that over 90% of roof windows in the UK are sold without their proprietary thermal collars recommended by the manufacturers for use during installation.

The findings of the research suggest that re-using old product details from previous specifications on new projects could be failing to address thermal bridging and the associated condensation risks. This is because the increased levels of airtightness plus additional insulation in the roofs, walls and floors of new homes has heightened the cold bridging effect on any remaining poorly insulated junctions. This risk increases in line with internal humidity levels, so popular areas for roof window

installation such as kitchens, bathrooms and bedrooms face an increased condensation risk when the 20mm gap is left uninsulated.

The BRE study showed that for many buildings, a thermal collar would be necessary to prevent condensation and mould growth.

To overcome this condensation risk, Keylite has developed a unique expanding thermal collar which is built into the roof window’s frame. The collar is activated once the frame is fitted in place and expands to insulate the offending 20mm gap between the frame and the roof timbers.

Experts at BRE researched the comparative performance of the window, with and without the innovative thermal collar, using the BR497 conventions for calculating linear thermal transmittance and temperature factors, along with IP 1/06 which addresses the effects of thermal bridging at junctions and around openings. The assessment was undertaken using Physibel TRISCO thermal modelling software.

BRE found that the expanding collar would not only prevent condensation on the frame’s



internal surface, but that the significant improvement in the frame's thermal performance would also enhance the roof window's performance with SAP, as its Psi values exceeded those required as the default values in the latest building regulations.

The second piece of research into the effects of installing a window without a thermal collar was carried out by construction industry consultants Currie & Brown. They pointed to studies which show that, on average, new homes emit 2.6 times more carbon than that estimated during design.

This confirms that the stated energy ratings of materials don't always reflect the reality onsite, with heat loss around windows and doors being one of the most significant contributing issues.

Having specified a roof window, you might of course assume that its performance would be the same in the roof as it was in the U-value tables. However, Currie & Brown completed quantitative analysis of the issue to reveal the true scale of the problem and their findings make salutary reading for specifiers.

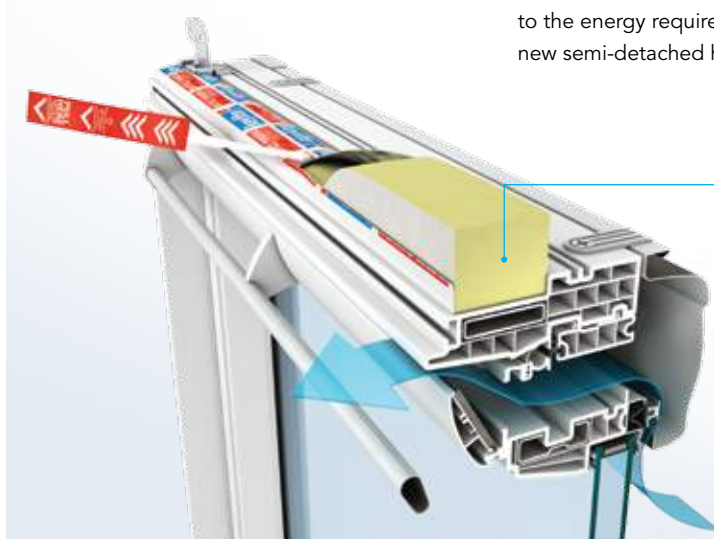
In performance terms, the failure to insulate the 20mm gap around the roof window during installation weakened the U-value for the whole roof opening to 1.74 W/m²k, compared to the manufacturer's quoted figure of 1.3 W/m²k for the roof window alone.

Currie & Brown calculated that the value of the lost energy from the roof windows installed each year in the UK without thermal collars amounted to half a million pounds, equating to the energy required to heat over 3000 new semi-detached homes.

Re-using previous specifications for roof windows is no longer a guarantee of satisfactory performance.

The question you will be asking is why is the appropriate insulation not being installed onsite? Well, there are a number of reasons including a circular argument that low demand from installers leads to low availability from trade sellers and so on. Also, since the collars are additional cost items, not visible when installed, contractors are less likely to include them.

Keylite's innovation however is built into each of its roof windows as standard and reverses the energy loss problem by restoring the performance of the whole roof opening to reflect the specified performance of the window itself. This unique solution provides architects with the comfort that a Keylite specification will deliver the anticipated designed performance onsite as every window is suitably equipped to combat the cold bridging challenge.



Keylite's unique expanding thermal collar.

FIND OUT MORE



Technical Helpline
01283 200 158
Keyliterateofwindows.com

Beyond WITH JEFF COLLEY

the standard



While the Government may have pushed its ambitions for energy efficient new builds back to 2030 there is a growing Passive House movement, keen to go well beyond current standards.

WHO IS JEFF COLLEY?

Jeff Colley is the editor of Passive House Plus magazine. It is the world's first English language magazine focused on building and upgrading to the world's leading low energy standard - Passive House. Published in separate UK and Irish editions, the magazine's focus extends beyond energy efficiency to address the core subjects of indoor air quality, water usage and the environmental impact of materials.

Passive House Plus is impacting the market positively by assisting specifiers to source innovative, sustainable materials and technologies. The magazine is also campaigning successfully for policy change within the built environment.

What is Passive House?

Passive House is a buildings standard aimed at producing ultra low energy use in homes which are also comfortable, affordable and ecological at the same time.

Passive House is more than just a low-energy building.

- A fabric first approach to insulation in exterior walls, roof, floor slab and glazing work to retain heat in winter and guard against overheating during summer.
- A controlled ventilation system consistently supplies fresh air without the risk of heat loss whilst also enhancing air quality by circulating air which can reduce radon levels, if present. A highly efficient heat recovery unit also allows for the heat contained in the exhaust air to be re-used.
- Passive House buildings allow for heating and cooling related energy savings of up to 90% compared with typical buildings and up to 75% compared to new builds.
- Passive House buildings are also praised for their high level of comfort. They use energy sources inside the building such as the body heat from the residents or solar heat entering the building.

Passive House is a building standard that is truly energy efficient, comfortable, affordable and ecological at the same time.



INTERVIEW PASSIVE HOUSE

How does Passive House work?

After the two oil crises there were a lot of madcap attempts of eco housing. However with Passive House it is all about making a building that actually works. The three key factors with Passive House include:

- 1 High and continuous levels of insulation aimed at eliminating thermal bridging
- 2 Airtightness
- 3 Mechanical ventilation

These factors work together to produce the full Passive House effect.



How did you get involved in Passive House?

I started a magazine in 2003 called 'Construct Ireland for a Sustainable future', a magazine which won awards for its campaigning on sustainable building policy. However, the more I learnt about sustainable building, the more I realised that a lot of approaches were not performing and hadn't been subjected to an evidence-based approach. This started my interest in Passive House. It seemed not to suffer from the performance gap issue - the gap between calculated and actual energy performance, an issue which the EU is urging member states to address in building regulations.

Another big challenge is indoor air quality. Low energy buildings without careful design of ventilation can run into problems like condensation whilst a build-up of pollutants risk causing building damage or discomfort.

In the early days these issues caused many people to lose faith in the concept of ultra low energy buildings.



Passive House is an evidence based approach with high levels of comfort.



What are the benefits of Passive House?

Passive House is an evidence-based approach which delivers high levels of comfort to try and ensure the building is always warm but not too warm, has a constant supply of fresh air and costs little to heat. As the efficiency is in the fabric, it should lock in the investment for 50/60 years or more. The same can't be said about approaches that are reliant on bolt-on tech, which has its place - but not at the expense of good fabric.



Is Passive House more expensive to build?

That really depends. The extra cost reduces as the building regulations improve to address issues such as thermal bridging. Any extra fabric investment may also be offset against reduced spend on mechanical systems. So much so that a recent Ulster University study found only a 0.01% cost uplift between certified passive semi-detached houses and identical houses built to Irish building regulations.



At one stage Ireland had the highest per capita number of Passive Houses in the world.

Are there many Passive House builders in the UK and Ireland?

There was a surge of Passive House activity during the recession. Ireland got a head start on the UK: at one stage Ireland had the highest per capita number of Passive House designers in the world. But the UK is catching up, aided by the good work of the Passivhaus Trust, with lots of support from forward-thinking councils, housing associations and universities. The UK now boasts a large number of successful social housing schemes, schools, universities, offices and of course, self builds to the standard - and even the odd conscientious developer.

Anything's possible with Special Steel Lintels

Keystone's bespoke Special Steel Lintels provide an effective means of achieving complex shapes when designing buildings with character. A Keystone Special Lintel is ideal when shape, scale or unusual load requirements call for a bespoke approach in manufacture.

Understanding the special lintel service affords the architect confidence in the knowledge that a partner is on hand to help them deliver the individuality of their designs. This removes the doubt from the designer if delicate detailing can be delivered onsite.

Typical applications include arches over front doors and windows and can be achieved in a variety of traditional styles, from the wide Parabolic Arch to a pointed Venetian Arch. Alternatively Keystone's team of design engineers can create a bespoke solution to accommodate any design.

There are several options including Special Lintels which go to site as bare steelwork and facilitate the creation of special openings utilising the skills of an onsite brick layer.

The second option is more of an offsite solution where the steel lintels can have brick slips applied in the factory and this approach is common for arches and more detailed designs. In this case the brick is sourced from the project's main brick supply and slips are cut and applied in factory controlled conditions for optimum aesthetics onsite.



1

1
A Brick Feature Arch over the main entrance to a Birmingham apartment complex



2

2
Bow Lintels create the feature for these Cheltenham apartments



3

3
Keystone's Apex Lintel adds light to this beautiful sun room in a private residence in Derby

Tall Trees

Private Dwelling
Tall Trees

Products Used
Brick Slip Feature Lintels

Architect
Stephen Langer Associates Ltd

Contractor
Ascent Building Ltd



Tall Trees is a residential development in Kent. The complexity of the brick detailing within the architect's plans presented a significant challenge.

The project specified a range of brick features over a variety of opening shapes and sizes. One of the most striking features is a unique arch over the front porch with brick on three sides.



The variety of shapes and sizes of the brick features required provided a challenge. If constructed onsite, the intricate brickwork at Tall Trees would have been extremely labour intensive using traditional methods.

The level of detail would have required skilled specialist labour onsite and working at heights. Onsite traditional methods can also be subject to delays due to adverse weather conditions.

Keystone's technical department specified a number of pre-fabricated Brick Feature Arches and Lintels to varied specifications, incorporating specially manufactured brick mullions, heads and Bullseye Brick Feature Lintels.

The porch entrance required a Brick Feature Arch with brick on three sides. All of the brick slip products were manufactured in Keystone's factory controlled environment.

Brick was collected from site and each brick was crafted ensuring the decorative brick features captured the architect's vision.



The offsite manufacture of these bespoke solutions ensured optimum conditions for the bonding process and offered a level of quality and detail which would be much more difficult to achieve if produced onsite.

FIND OUT MORE

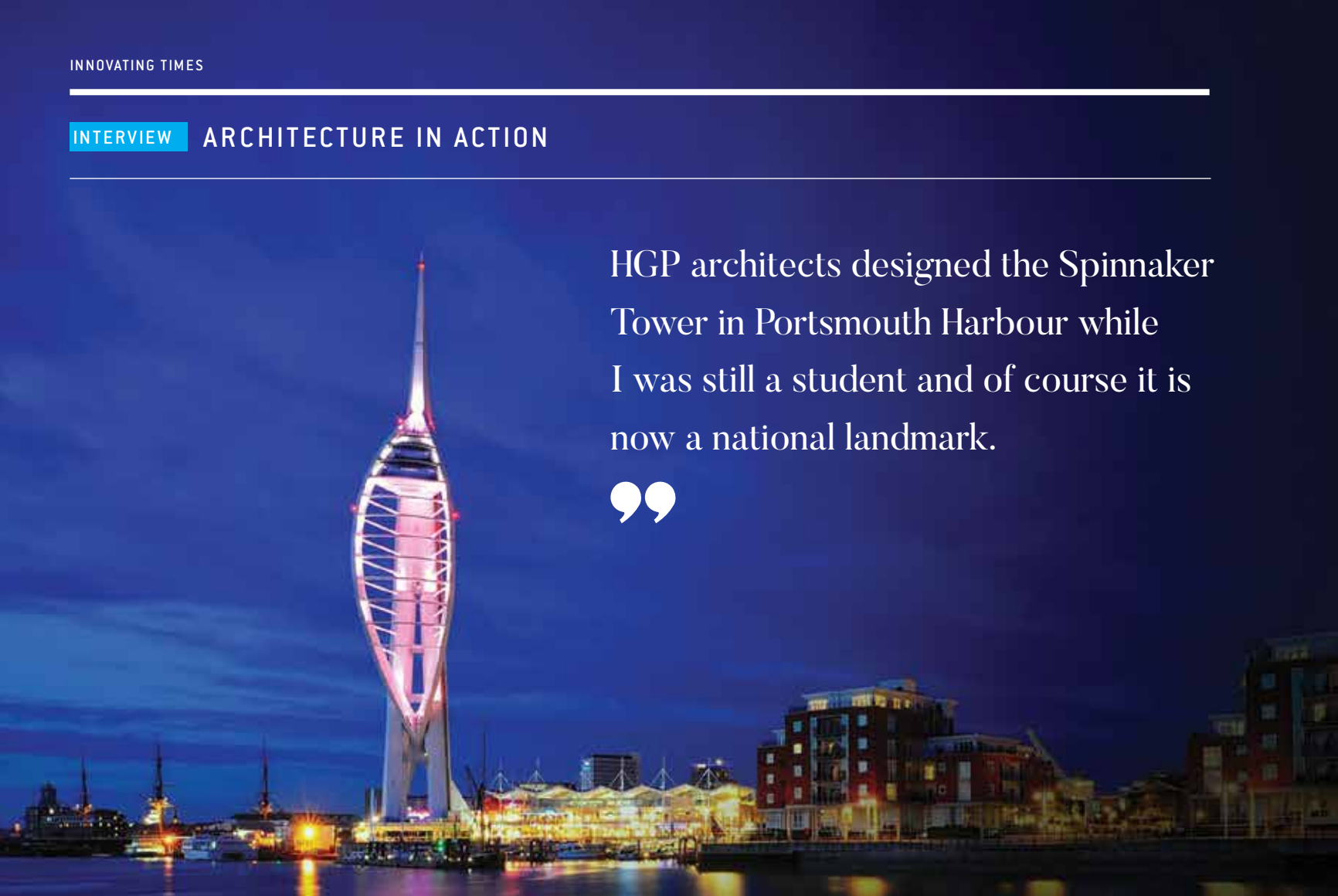


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HGP architects designed the Spinnaker Tower in Portsmouth Harbour while I was still a student and of course it is now a national landmark.

A night-time photograph of the Emirates Spinnaker Tower in Portsmouth Harbour. The tower is illuminated with pink and white lights, standing prominently against a dark blue sky. The surrounding city lights and buildings are visible in the background, with their reflections on the water in the foreground.

Architecture in action, creating landmarks on England's South Coast.

WITH

MATTHEW WILLIAMS

HGP Architects has helped shape the built-landscape on the south coast with award winning projects. Director Matthew Williams shares his views from a busy practice with a special focus on waterside regeneration.



WHO IS HGP ARCHITECTS?

HGP Architects has a reputation built on nearly five decades of inspired building design for clients across diverse sectors.

Established in 1968 on the South Coast, the success of it's earliest projects in banking and office development led to rapid diversification into marinas, residential and other sectors.

The work of the HGP team has attracted industry recognition in recent years with awards that include The Times Conservation Award and RICS Project of the Year Award. The iconic Spinnaker Tower, designed by HGP, is rated among the nation's top five buildings people are most proud of.

How did you get started in Architecture?

I loved architecture and buildings from an early age. I was very fortunate to experience a lot of travelling with my parents when I was younger, seeing different areas of the world. We went to America quite a lot, so I was exposed to the work of architects like Frank Lloyd Wright and Louis Kahn. Interest in a few of their buildings gave me the bug. My family were involved in property development, buying land and building on it, so from a young age I was interested in everything related to construction.

INTERVIEW ARCHITECTURE IN ACTION



Southampton Harbour Hotel & Spa

The founder Hedley Greentree sadly passed away last year but we continue to build on his reputation; the company now has 80 employees, 2 offices and is looking to expand all the time. Our local client base is also spreading its wings so we would like to expand our service with them across the south coast.

What do you love about architecture?

For me it's walking into the finished article and seeing the customer or the client's face light up when they see the final product. I still get a thrill from taking a project from an initial sketch to the point of exploring the spaces with them for the first time. I remember when we were doing the Ben Ainslie Racing Building, walking around the building with Ben when it was finished and he was just so happy with the way the staff interacted with the building. They had moved from temporary accommodation to this fantastic purpose designed facility and they were saying how unbelievable it was to see its impact on productivity with staff in a relaxed mood. The new building allowed them to achieve more because of the way work flow went from the production of the boat to the design of the boat and back again, facilitating how the sailing team could interact with the boat's designers.

How did you get so involved with the house builders?

We are lucky to have developed close working agreements with companies such as Crest Nicholson and I now chair the architect's panel for them. They have 5 practices they currently use and the panel's role is to make sure set procedures are followed, ensuring efficiencies are achieved through the drawing package and into procurement.

We have probably got about 5 large regeneration projects on for Crest Nicholson at the moment, nationwide. We enjoy this relationship and find that when you have repeat business you gain an understanding of their work flows and procedures, this allows us to deliver efficiencies and the clients get quality architecture.

How long have you been with HGP Architects?

I started with HGP in my student days as well as getting some experience in a number of other practices. I came back to HGP Architects and 18 years later, having worked up the ranks, I am now one of the owners. Most of my time is spent working on regeneration projects and within the practice we have developed a specialism in waterside regeneration. We are known for doing waterside mixed-use buildings that include restaurants, apartments and leisure. We have delivered marina schemes on the south coast and around the world.

It's HGP's 50th Anniversary this year and we are marking this achievement with a number of events and celebrations.



For me it's walking into the finished article and seeing the customer or the client's face light up when they see the final product.

HGP architects has been involved in many award winning projects. What has been your favourite to date?

HGP architects designed the Spinnaker Tower in Portsmouth Harbour while I was still a student and of course it is now a national landmark. The main project that is special in my heart has to be the BAR building, that's won 6 awards and its innovation is still being featured in the architectural press. The actual process of delivering that building was done over 18 months from inception of the idea to BAR holding the regatta out of the building. To achieve this, we utilised offsite fabrication and BIM played a major role in its development.



How relevant is the expansion of offsite construction to architects?

I hear all the time from my clients and site teams that they can't get the quality of tradesmen now that they had in the past. The required levels of quality and expertise onsite are getting increasingly rare, we are happy to encourage the use of offsite fabrication to maintain the quality. This is a trend I can see developing further, at pace. The brick laying trade is particularly difficult and for example, they were really badly affected by this year's weather, a lot of sites were snowed off. Offsite fabrication is not weather dependant and no matter what time of year you go to site, the quality is still being maintained.

As far as integrating offsite fabrication into our design model, it gives us a better idea of how the co-ordination is going to work. We use BIM Models from the manufacturer and can rely on those details being accurate onsite, so this is a great boost to the design management of the whole project.

Levels of quality and expertise onsite are getting increasingly rare so we are happy to encourage the use of offsite fabrication to maintain the quality.



Understanding the role of offsite components in response to the UK’s housing challenge.

The offsite sector now accounts for an estimated 7% of total construction output in the UK, worth £1.5bn to the economy and growing annually as offsite technologies become recognised as a solution to some of the industry’s most pressing challenges.

These include the severe skills shortages, a housing shortage plus the drive to eradicate risks to workers’ health and safety onsite. The debate surrounding housing supply and the Government’s plan to build two million homes by 2020 has clearly identified the need for a rapid switch towards alternative construction methods as an important step towards making this target achievable.

House builders are now actively pursuing relationships with offsite manufacturers in a bid to develop solutions which will shorten build programmes. The much reported skills shortage is growing as Brexit uncertainty is increasingly deterring foreign workers from entering the UK, adding further impetus for change.



Offsite solutions come in different shapes and complexities and while the number of complete factory built, or modular houses is growing, they are still not appearing in very significant volume. On the other hand, the use of offsite components to assist traditional build is now widespread.

Offsite is not being promoted as the answer to every situation because for some bespoke builds with a high degree of personalisation, factory built offsite solutions may not be cost effective. For many house builders however, new offsite options are delivering welcome advantages for both the designer and the client.

A dormer window would be a good example of a labour intensive task for a skilled joiner onsite, requiring multiple trades to construct. Compare that process to a factory built dormer which benefits from economies of scale and enhanced quality as it is managed at every stage of production. The process to insulate the dormer in a factory environment for example is likely to result in a far superior finish without the voids or gaps in insulation which often occur onsite, resulting in cold bridging issues.

High quality build detailing is a positive benefit for house builders presenting properties for sale and the value of kerb appeal is not going unnoticed. This, together with the skills issues are just two of the reasons house builders are increasingly turning to IG Elements for practical solutions.

Liam Kelly, MD at IG Elements, explains the company's approach to the market's challenges.

Innovation

In an increasingly unpredictable world, we believe the best response is to focus on innovation which enhances the way we work and meets the challenges faced by the industry today.

Closing the gap between designed and built performance should feature heavily within the R&D team of every building material producer. It is important that the construction industry delivers a build quality and performance that matches the architect's vision, unhindered by an onsite shortage of skills or labour.

This is our challenge as a material producer and we are responding with innovation which is delivering effective, simple-to-use products, which facilitate the realisation of that vision.



Working in partnership with Architects & House Builders

At IG Elements, we are addressing these challenges through a process of continuous improvement and welcome feedback with both architects and house builders to understand their views and priorities.

Early engagement in the build process reaps benefits as being involved at the design stage adds efficiency, streamlining the process as details are incorporated into drawing packages. This early intervention also ensures the products are developed to meet site requirements cost effectively but most importantly, in a way that won't threaten the original design.

At IG Elements, we take time to understand our customers, their build process and how best we can ensure the smooth running of the supply process.

We liaise with the build teams at every stage, from the pre-start meetings, right through to after sales support.

The future

We will continue to engage further and deeper with those in the industry looking for new solutions to their everyday needs in the face of changing demands. Ease of installation combined with quality detailing is vital as the labour market tightens and skills shortages mount. Our job is to innovate for easier installation, reducing the number of tasks to be completed onsite while at the same time raising energy performance levels.

Predicting what the future has in store for our industry is a challenge but one thing for sure is that it will involve more change. At IG Elements, our response is to increase investment in innovation with a clear focus of helping the industry overcome the barriers currently in the way of greater output and higher performance standards.



[FIND OUT MORE](#)

IG
Elements

Technical Helpline
01283 552 205
igelements.com

Winning lines

The crisp lines of this award-winning project were facilitated by an innovative masonry support brick slip panelling system.

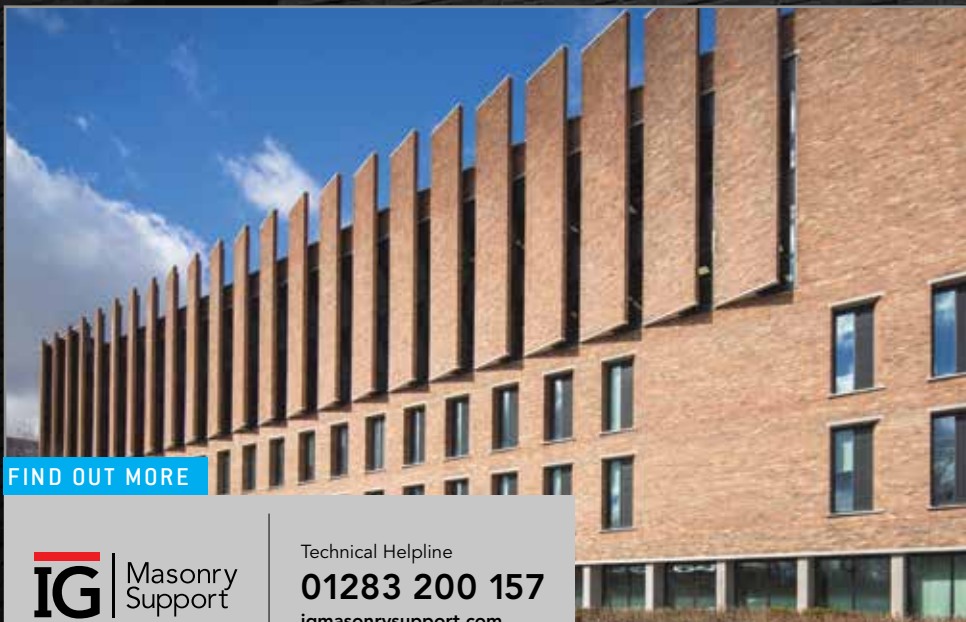
Description

Brick elements are a key feature of Coventry University's new Science and Health Building. Brick clad fins replicating those on the neighbouring Coventry Cathedral were one of the stipulations in the planning permission.

BAM Construction required a lightweight solution to achieve this incredible architectural detail. IG's technical team designed a brick slip panelling system, which secured to the pre-installed steel railing system, accommodating the unusual dimensions of the handmade brick by Petersen Tegl.

The Challenge

The brick slip fins featured throughout the south elevation of Coventry University's new Science and Health Building required a collaborative construction approach, utilising modern building technologies to achieve 23 large scale prefabricated installations. IG's brick slip panel board system proved an effective means of cladding the 12340mm tall and 2628mm wide fins, providing BAM Construction with a lightweight solution that could secure easily to the pre-installed steel framing system. In accordance with planning authority requirements, the Petersen Tegl D38 brick type was specified throughout the development. The unusual dimensions of the handmade brick, 238 x 108 x 54mm, were accommodated by IG's innovative interlocking brick slip system.



FIND OUT MORE



Technical Helpline
01283 200 157
igmasonrystsupport.com

Coventry University

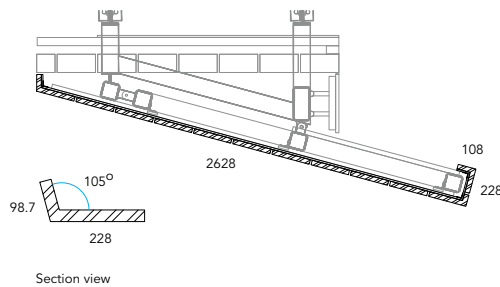
Educational Development
Science and Health Building

Products Used
Brick Slip Fins

Architect
Broadway Malyan

Contractor
BAM Construction

The Solution



The BBA approved panel board fixed to the steel framework using 316-grade stainless steel self-drilling screws. Each fin consisted of three brick clad steel sections, lifted individually into position by crane and restrained back to the railing system.

The lightweight prefabricated solution enabled quick and effective assembly onsite.

IG received a consignment of the Petersen Tegl D38 and arranged brick cutting to suit the complex requirements. Brick slips were cut to various specification, including a 105° slip to accommodate the angled return of the fin, this ensured the left-hand edge was flush against the main building façade.

The finished development compliments the historic and architectural context of the area, with carefully selected materials and sensitively designed brick elements.



New Approach

Raising Standards and the Roof!

Smartroof's offsite modular roof system attracts architects and builders alike. Smartroof is manufactured in a factory environment governed by strict quality procedures. This helps eliminate any risk of cold spots that may arise from trade methods onsite. This is an important factor in the drive to close the performance gap.

The Performance Gap

The performance gap is a term commonly used to denote the disparity that is found between the energy use predicted in the design stage of buildings and the energy use of those buildings in operation. In recent years, the construction industry and government have grown increasingly concerned over the potential gap between design and as-built energy performance. It could undermine a building's vital role in delivering the national carbon reduction plan and damage consumer confidence if energy bills are higher than anticipated.

Improving Energy Efficiency

There is a strong argument that focusing on the fabric of a building is the most cost effective, reliable and robust method of achieving compliance with future building regulations, as getting the fabric right will save energy throughout the whole life span of the house.

As designers focus on improving the fabric of the buildings by reducing wall, floor and roof U-values, the proportion of heat flow through thermal bridging becomes greater and Part L 2013 has much greater emphasis on thermal bridging as these heat losses were often over-looked in the past. Statistics show that up to 35% of the heat loss in a well-insulated house is through thermal bridges. With 41 different potential thermal bridging junction types being identified within the SAP 2012, it's important that designers address the thermal bridging details to minimise heat loss.

How Smartroof is addressing the Performance Gap

Smartroof offers consistent and predictable thermal performance that can be computer modelled in advance to accurately assess the thermal efficiency of individual buildings at the design stage. The Smartroof system's interlocking design makes it an ideal roof solution for those developers adopting a fabric first approach.

In traditional structures the junctions between elements of the building fabric often require special detailing so as not to compromise the overall SAP calculation, but Smartroof's factory insulated panels eliminate voids or cold spots. Production of the Smartroof system in a factory environment makes it easier to enforce strict quality standards more effectively than with multi-trade teams onsite. The Smartroof solution offers significant increases in design flexibility as its insulation levels can be easily upgraded. This allows the client to 'future proof' their roof as U-values as low as 0.09 W/m²K can easily be achieved.



Smartroof has revolutionised room in roof construction in the housing sector with it's innovative panel system that can be installed in hours, not days.



Rethinking Roof Construction



Specifying Smartroof can also help your client overcome the following challenges:

- ✓ Health & Safety
- ✓ Skills Shortage
- ✓ Build Speed
- ✓ Quality of product
- ✓ Cost Savings

Health and Safety Benefits

Smartroof is delighted to have won the 'Best Health and Safety Product' award at the 2018 Housebuilder Product Awards. Traditional room-in-roof construction is vulnerable to major risks caused by numerous factors including the erection of scaffolding and manual handling whilst working in confined spaces and with falling brickwork.

In addition to these, there are risks involved in working at height on attic trusses or top-hats and purlins. This means that the roof can take weeks to erect, insulate and make watertight. With Smartroof the number of hours working at height are dramatically reduced, while the risk of falling blockwork, use of power tools in confined spaces, and manual handling of steels is completely eliminated. Like all Smartroof products, the Classic system arrives in a single load, reducing materials handling and vehicle movements onsite.

Sean Og Coyle, Smartroof Managing Director commented, "Site safety is a major priority for Smartroof, so we are thrilled to have won the award for Best Health and Safety product. We have worked hard to develop a product that overcomes the health and safety risks associated with traditional roof construction and addresses the issues our customers face."

Addressing the Skills Shortage

The construction sector is in the grips of a skills shortage which is limiting construction activity and increasing labour costs at the same time. The shortage has recently hit its worst recorded level and it is expected to worsen over the coming years and decades, with the recruitment of new talent failing to keep up with the rate of retirement.

The Chartered Institute of Building (CIOB) has reported that the industry will need to find 157,000 new recruits by 2021 in order to keep up with demand. Smartroof is a factory fabricated room in roof system and can be installed in one day. This helps to free up the house builders skilled trade onsite to speed up the build programme.

FIND OUT MORE



Technical Helpline
01283 200 199
 smartroof.co.uk

DIAMOND ANNIVERSARY IG LINTELS HITS 60

60 Years of Innovation

Defining the way we build today

IG founded	IG invented the first open back lintel	IG introduces first insulated lintel	IG became part of the Keystone Group	1st steel lintel company to be awarded ISO 14001	Hi-therm Lintel launched	Overall Housebuilder Product of the Year Hi-therm Lintels	Housebuilder Product Awards Hi-therm Lintels	Hi-therm+ Best Building Fabric Product, Housebuilder Product Awards
1958	1967	1984	2006	2010	2011	2013	2014	2018

“
Millions of UK homes have been built using steel lintels as a result of IG’s innovation.

When it comes to steel lintels, the name IG will be familiar to most architects, but not all may realise that IG Lintels in Wales was the company that brought the first steel lintels to the market.



So now, sixty years on, IG has earned the remarkable right to claim that it has defined the way we build houses today. But of course, the story doesn’t end there, because over the past sixty years, IG has continued to innovate and now leads the way in energy efficient lintels.

The latest development, and already an award-winning product was launched earlier this year in the form of Hi-therm+.

This high performance lintel tackles the issue of thermal bridging through the application of an innovative composite design which combats thermal bridging

to deliver thermal efficiency up to five times greater than a standard steel lintel.

The relevance to the architect comes in the assistance which this new lintel technology brings to compliance with SAP and as a fabric first material this has the ability to reduce a house design’s reliance on secondary, bolt on technologies which can often interfere with the integrity of the architectural design. The additional performance within SAP could also remove the need to increase cavity width from 100mm to 150mm, which over the floor plan of the building saves valuable interior space.



IG has developed additional means of support for architects, including a helpful Psi Value Calculator tool on its website which allows designers to compare the thermal performance of differing wall construction options when using Hi-therm+.



TECHNICAL SUPPORT

Strength in numbers

With over 80 qualified technical engineers in our team we are driven by innovation and are dedicated to delivering industry leading technical support.

Please refer to our Hotline numbers for the appropriate technical team.

Lintels, Windposts

& Brick Feature Lintels

T 01283 200 150 (UK)

T 028 8676 2184 (NI / ROI)

IG Lintels
T 01633 486 486

IG Masonry Support
T 01283 200 157

Keylite Roof Windows
T 01283 200 158

IG Elements
T 01283 552 205

Smartroof
T 01283 200 199

Wyckham Blackwell
T 01675 442 233



Book CPD Seminars

Our current CPDs are available as follows:

[Keylite](#)

Improving natural daylight through a range of innovative roof window solutions.

A best practice guide to optimising natural light and energy efficiency.

Bookings can be made online

keylitteroofwindows.com/cpd-booking

or by contacting us at

T 01283 200 158

or email

CPD@keylite.co.uk

[Keystone / IG](#)

A Fabric First approach to sustainable construction.

Understanding the impact that lintel innovation can play in improving the fabric energy efficiency of a building.

Bookings can be made by contacting

T 01283 200 150

or email

CPD@keystonelintels.com



Download CAD Files

A range of Fastrack CAD drawings are available for download.

[Lintels](#)

keystonelintels.com/cad-access

iglintels.com/technical-information/cad-drawings/

[Keylite Roof Windows](#)

keylitteroofwindows.com/architects/downloads/cad-drawings



Download White Paper

Keystone have produced an informative white paper which contains a useful introduction to the issues surrounding energy efficiency and Part L 13.

keystonelintels.com/downloads



View BIM Models

BIM models for our steel lintel range are available to download on the IG and Keystone websites.

keystonelintels.com/bim-downloads/
iglintels.com/bim-downloads/



Calculate Psi Values

Our unique Psi Value Calculator enables you to print a certificate for the Psi value of your chosen wall construction when using Hi-therm+ Lintels.

iglintels.com/hi-therm-lintel/psi-value-calculator/

keystonelintels.com/hi-therm-lintel/psi-value-calculator/

Hi-therm+TM

LINTELS

We've **cracked** it...



The **low cost** solution
for reduced carbon emissions

Available from



Find out more hithermlintels.com