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# INNOVATING Times

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## MEET THE ARCHITECT

Paul Jolly from Dixon Jones Architects discusses how IG Masonry Support assisted in the Marlborough School project.

## PEOPLE & PLACES

Eddie Weir, President Elect of CIAT, discusses his favourite building and his new role in CIAT.

## JOINED UP THINKING

Peter Caplehorn from the CPA discusses post Hackitt how the construction industry must engage more closely on product performance and certification.

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Without change there is no innovation, creativity, or incentive for improvement. Those who initiate change will have a better opportunity to manage the change that is inevitable.

William Pollard

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Wise words indeed and I trust as you read the articles in this edition of Innovating Times you can see that the thirst for change and continuous improvement is what drives the very best people in our industry.

Innovative people are those who look to wider horizons to find new ways to make things better. These people know the value of engaging with others

as a source of learning and exchange for ideas, they are the opposite to those who look to the past for inspiration or seek to close down the widest possible collaborations.

I hope you are inspired by stories such as the award winning architecture of Marlborough Primary School, set deep in central London. It is an example of how our engineers have developed new ways to facilitate stunning brick detailing in modern buildings.

In the past, construction relied on a vast local workforce, now, our business has developed efficient offsite capacity to deliver high quality solutions to sites anywhere in the country.

We need innovative people working at every level in our industry; in design, in manufacture and commercial support. We need to work closer together across disciplines to deliver solutions to some of the big challenges facing us this year and beyond.

At Keystone Group we are encouraged to learn more through collaboration and push ahead with new thinking.



**Sean Coyle**  
Chairman, Keystone Group

How do you see  
the home of the

# FUTURE

being designed  
and built?

**I**n a constantly evolving world that is becoming more technology driven, we have to look at future trends and house types.

The demographic structure of the population is changing. In well developed countries, the ageing population continues to grow and such a population has different needs and different style of living.

Homes are also becoming increasingly digitised. We are no longer at home alone; as the space-race era predicted, technology has transformed our daily lives.

With all these changes, it will certainly make an impact on the home of the future.

We asked some  
leading professionals  
their thoughts  
on the future home?

## Roberts Limbrick Architects



**Aaron Terry**  
Director  
Roberts Limbrick  
Architects

Over the last 20 to 30 years the main focus within the residential sector has been on increasing densities of site. I believe that the sector is now starting to value and understand the importance of place making, and in the future I hope that this becomes the benchmark for the sector.

## Dixon Jones Architects



**Paul Jolly**  
Associate Director  
Dixon Jones  
Architects

Advances in BIM and increased demands for more affordable housing will inevitably lead to more investment in offsite fabrication. It is also clear that architects and the industry as a whole are going to have to do more to build sustainably in light of global warming concerns. However this must also be led by clients and developers to have an overall commitment to delivering high quality schemes that are built to last rather than selling off and moving onto the next development.

## CIAT



**Eddie Weir**  
President Elect  
CIAT

I suppose that depends on how far into the future we are considering. I would like to think that smart forms of construction would be the norm. Affordable and sustainable 3D printed buildings made by robots using recycled construction materials... possibly made offsite in sections and erected onsite in a day. There are lots of discussions at the moment which refer to the term 'disposable housing' which would meet the demand for our ever growing population. The question is... what would be the lifespan of such a building?

## Construction Products Association



**Peter Caplehorn**  
Interim Chief Executive  
Construction Products  
Association

I think overall the information and sophistication of choice is going to get much better and also for people to be able to try it out in virtual reality before its designed and certainly before its built. I think the home of the future requires a very collaborative process using digital tools that home owners can use as easily as the specialists can use. I think it's about people being able to not just focus on what it looks like, but also being presented with techniques which show how it performs, how easy it is to clean, how easy it is to maintain and where the materials come from.

# Marlborough Primary School London

## Overview

**T**he Marlborough Primary School development is part of a large regeneration project within Kensington & Chelsea. The carefully considered design replaces the original Victorian building, creating a modern and vibrant learning environment. The new school exhibits a rich variety of materials, with particular attention paid to the brick elements.

IG's prefabricated solutions enabled quick and effective installation of challenging architectural features. The large bullseye portholes throughout the main façade of the building addressed the development's requirement for natural light.

Each of the circular openings are supported by IG's brick slip bullseyes with a single course of glazed green brick creating an eye-catching detail.

**Architect**  
Dixon Jones

**Contractor**  
Mace

**Brickwork Contractor**  
Lesterose Builders Limited

**Location**  
Kensington & Chelsea,  
London

**Products Used**  
Glazed Brick Slip  
Bullseyes & B.O.S.S.®



## Challenge

Marlborough School's new state of the art facilities have created a more spacious and vibrant learning environment. The architect's design addressed the requirement for natural light within the dense urban landscape by incorporating lightwells and large porthole windows.



© Paul Riddle





© Paul Riddle

Each brick slip bullseye required a single course of glazed green brick to surround the opening, creating a distinct and colourful feature. The use of glazed brick helps to increase the reflection of light into the building, further contributing towards the light intake of each porthole opening. Lesterose required seven bespoke bullseyes with an internal diameter of 2915mm and two smaller variants of 910mm. Lesterose also required IG's B.O.S.S.® (Brick On Soffit System) to achieve long spans of complex brick soffits throughout each floor of the development.



## Solution

Two variations of the brick feature bullseye lintels were required onsite. The smaller bullseyes were delivered to site as one-piece prefabricated solutions. However, for logistical purposes the larger bullseye installations were delivered in two components and bolted together onsite.

Using brick from site, IG bonded pistol slips to the structural steel backing lintels, ensuring colour and texture remained consistent with brickwork onsite.

Each of the larger bullseye arches required 102 pistol bricks. These pistol slips were made to accommodate a 10mm chamfered edge around the full circumference of the bullseye feature, providing a drip detail to ensure durability of the brickwork.

The finished glazed brick elements enhance the façade achieving dramatic contrast, defining the form of each bullseye opening. In addition, B.O.S.S.® units were also installed allowing the contractor to achieve continuous brick soffits, with complex bond patterns.



FIND OUT MORE

**IG** Masonry Support

Technical Helpline  
**01283 200 157**  
 igmasonrysupport.com



# Making Capital Out of Brick

WITH  
PAUL JOLLY

Architect Paul Jolly relishes the challenge of delivering great brick buildings which make a positive social impact in London's complex built environment.

**P**aul tells Scott Denham, Sales Director at IG Masonry Support about his background, the work of Dixon Jones Architects and his contribution to the Marlborough Primary School project.

## The Story So Far

My father was an architect who designed many schools for Surrey County Council. I grew up in a house where he had his own study with a big drawing board where he used to work away listening to loud jazz music smoking roll-up cigarettes. I thought that's the job for me!

After graduating I spent my first two years of professional practice working in Dublin which is a fantastic city for an architectural graduate. I also met my wife whilst working in Ireland and she now runs her own architectural practice in London. In 2002 I joined Dixon Jones and have been very fortunate to have worked on some prestigious projects, including arts and education buildings.

## Where's The Buzz?

Ultimately it's about delivering great buildings that improve the everyday experiences for the people who use them, as well as making positive contributions to their surroundings. It's always great to have the recognition from your peers when winning architectural awards (Marlborough Primary School has won several) but unless the scheme works well for the people who use the building it cannot be regarded as a true success.

I'm particularly interested in the problem-solving aspect that architecture brings. It's those first formative steps where you can unlock the full potential of a client's site and push the design further rather than simply complying with an outline design brief. It takes the skill of a good architect to find innovative new approaches that have yet to be considered by the client team.







INTERVIEW MEET THE ARCHITECT

## Define Dixon Jones

The practice was established 30 years ago by Jeremy Dixon and Edward Jones to work on the redevelopment of the Royal Opera House. Several high profile cultural projects followed including additions to the National Gallery, the National Portrait Gallery and Somerset House. Our work has since expanded into a wider portfolio to include projects in the education, residential and commercial sectors as well as large scale master-plans.

We have a particular interest in the civic contribution that buildings make to the city and the potential to connect internal and external public space to define new routes. This approach considers the wider setting for buildings beyond the confines of the site boundary to explore the positive contributions schemes bring to their wider urban context. The public spaces between buildings can be just as important, if not more so, than the buildings themselves.

## Stand Out Moments

Marlborough Primary School will always remain a special project for me as I was responsible for leading the scheme from inception through to completion which took the best part of five years. It's always rewarding to go back to the school to see how much the staff and children are enjoying the building and the rooftop play areas.



Our work has since expanded into a wider portfolio to include projects in the education, residential and commercial sectors as well as large scale masterplans.



Another favourite would have to be Kings Place where I was responsible for leading the concert hall element of the project. The scheme was completed 10 years ago and is widely regarded by musicians as having one of the best interiors with the finest acoustics in London.

## The Marlborough School Project

The Marlborough Primary School project required an innovative design solution. New schools require large external areas for outdoor learning and play but the confined urban site meant we were unable to accommodate expansive playgrounds at ground level. The massing constraints posed by a 10 storey apartment block to the east contrasted with a 5 storey blank party wall to the west resulted in a stepped section across the site establishing a series of cascading 'garden terraces' offering a rich diversity of rooftop play areas accessed directly from classrooms. The stepped section allows larger communal spaces to be created underneath where the main hall and multi-use space form the social heart of the school.

The redevelopment brief was extremely challenging. In addition to requiring a larger primary school with over 2,500m<sup>2</sup> of external learning and play areas, the Council also called for a new Commercial Building (offices / retail) and a new pedestrian link to be provided across the site. We were essentially asked to provide accommodation that was the equivalent of 3 times the area of the site footprint.







## Offsite Solutions From IG Masonry Support

When developing the detailed design proposals alongside Mace & Lesterose, IG Masonry Support was proposed as the most effective solution for delivering our design intent for the deep brick soffits and the large circular bullseye windows which were key architectural features for the project.

The masonry detailing on the school was developed to evoke the massing and solidity of Victorian architecture with the expressed brick reveals, rooftop playground walls, deep brick soffits and characteristic stone banding all serving to convey an impression of solidity and permanence. IG's B.O.S.S.<sup>®</sup> (Brick On Soffit System) was also used to achieve 12m long spans for the brick soffits on the playground elevations.

Each of the larger bullseye windows were 2.9m in diameter and composed of 102 glazed pistol bricks incorporated a chamfered edge and projecting drip detail. These huge brick surrounds were produced as IG brick slip structural lintels which were delivered in two halves and bolted together onsite.

The challenge was therefore how to achieve a significant increase in density across the confined urban site whilst creating a fitting replacement for the original Victorian School which had stood on the site since the 1870's.

A London Stock brick with stone string coursing was proposed as the predominant facing material to respond to the prevailing local context and to reference the materials used in the original school. The use of high quality facing materials was paramount on this constrained urban site given both the school and commercial building are built hard against the pavements to maximise density.

The glazed bricks draw their influence from the materials used in the nearby Michelin Building which is Grade II listed and dates back to 1911.



IG Masonry Support was proposed as the most effective solution for delivering our design.

## The Future of Offsite

I think with the advances in BIM it is inevitable that there will be a greater focus on offsite fabrication over the next five years. There are obvious advantages to this in terms of managing quality control inside a controlled environment rather than constructing out onsite and we are seeing this being used increasingly on some of our larger projects.

Most modern brick buildings tend to be composed with non-load bearing façades only a single brick thick. Architects will however often want to express the solidity and mass of brickwork through the use of full brick reveals and deep soffits. So, as long as quality control can be maintained, offsite can work well.

The increased demands for more affordable housing will inevitably lead to more investment in offsite fabrication. It is also clear that architects and the industry as a whole are going to have to do more to build more sustainably in light of global warming concerns. However this must also be led by clients and developers to have an overall commitment to delivering high quality schemes that are built to last.



# Spanning Suburbia with IG Lintels

RIBA Journal, challenged readers to rethink suburbia with a design for a home that meets the needs of contemporary suburban occupants.

## RIBA J

Offering a cash prize of £2,000 for the winner and £500 for each of the three commended entries. The competition asked entrants to use IG's Special Lintels and Brick Slip Feature Lintels to create a one-off 21st century suburban family home.

The brief was to rethink suburban living by designing a domestic house to meet the needs and aspirations of a new generation of suburban family. Literally and metaphorically supporting these ideas must be the lintels themselves.

RIBA stipulated that the main construction material should be traditional brick or block, and the main structural support should be the steel lintel. Each entry had to incorporate at least three of a range of lintel features such as the gothic arch, brick slip feature lintel, corner lintel or bullseye lintel (a full list is available on IG Lintels' website) – all key products specified in well-designed residential homes.



**DERRICK MCFARLAND**

Managing Director  
IG Lintels

**W**e are delighted with the response to our challenge to 'rethink suburbia' and the many interesting interpretations of what suburban living might look like through the eyes of an architect.

It may be true that in the race to solve the housing crisis and build as many homes as possible, stylistic concerns have been forgotten. It may also be true that unavoidable densification and a chronic skills shortage mean it is easier (and more profitable) to build 'boxes'. We believe the suburbs deserve more than that. On closer inspection, suburbia is home to a rich architectural heritage that deserves our attention and respect. We set this challenging competition because we strongly believe interest and variety can be brought to suburban projects without adding cost or delays.

Through our involvement in the judging panel, we really started to understand the diversity of suburbia, from stunning architectural schemes to traditional

projects, and from single houses to scalable designs. The ambition and imagination of some of the entrants created an enthusiastic debate among the judges, and while a worthy winner was agreed on, others were rightly highly commended.

We were impressed by the fact that the eventual winner gave careful thought to the whole of the suburb and how the design might be built at scale. While individual and creative, the design has an air of humility and it's easy to see it as part of an interesting scheme by a large housebuilder.

Modern technology means there is no need to build suburban houses that all look the same. Architects can design unique homes to truly inspire their occupants, while staying within realistic, scalable parameters. Certainly if the nation's housebuilders were to embrace some of the designs submitted to this competition, it would be enough to make homeowners fall in love with suburbia again.





## Winner Villa Trio

### A Semi-Detached House for Chingford

**Tom Atkinson**

Tom Atkinson's winning design, Villa Trio, is designed to be adaptable enough to keep pace with a changing suburbia.

Villa Trio rests on the prominent use of arched lintels: the home's defining feature is a repeatable arched base which accommodates mixed uses at street level. Garage, garden-centred living area or annexe flat – the design foresees changing needs with time.



It's putting the lintels where people can interact with them, anchoring the building to the ground.



Suburbs must not lose their sense of the wild, writes Atkinson

Find out more  
<https://spanning-suburbia.iglintels.com>



PRODUCT INNOVATION ARCHITECT COMPETITION

# Commended Suburban Loft Surbiton

**Andrew Drummond**

Drummond's design appropriates and updates familiar tropes of suburban architecture: traditional red brickwork and detailing; asymmetrical composition and massing; an oversized full arch entrance and feature bullseye windows.

➤ Gone are mock-Tudor beams, replaced by an exposed steel structure.



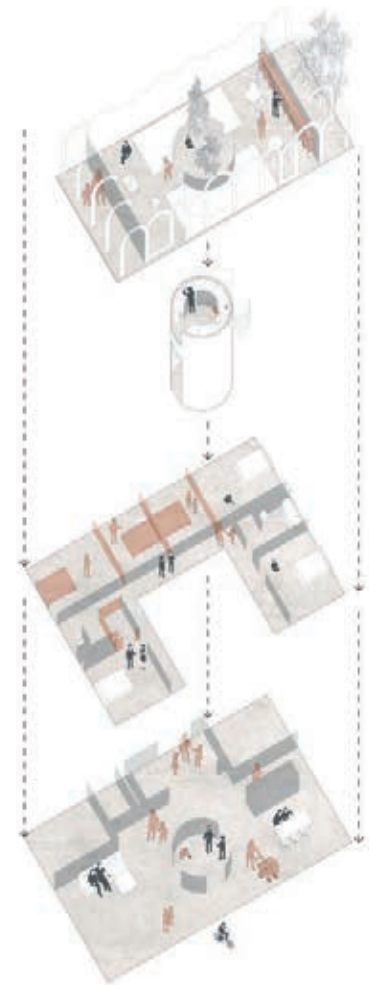
# Commended Villa ME!

**David Parsons**

Parson's concept is to balance the shared social needs of a 21st century family with individual needs for privacy and personal space. Based on a courtyard villa, its rooms are organised around a shared central area topped with a roof garden. This open space cuts through three levels, in which rooms graduate from public to semi-private to private.

⤴ The exuberant vertical stacking of lintels resembles an expo pavilion.

➤ Rooms graduate from public to private in an exploration of privacy in a shared family home.



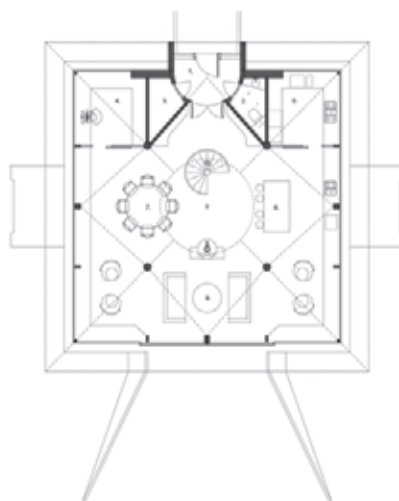




## Commended Dovecote House

**Kenneth Fraser**

Fraser draws on Rykwert's book 'On Adam's House in Paradise', which charts the typology of the four-square freestanding house: Dovecote House has four similar facades, arranged with an entrance facing the principal approach, and grander rooms facing the landscape.



Axonometric indicating positioning of lintels within the structure.



Ground & first floor level plan views.

## IG Lintels available on NBS+ and NBS BIM library

### NBS+

Specifying products from IG Lintels has never been easier with all products now available at the click of a button in NBS+ format. Architects and specifiers can access the full range of products within the National Building Specification's centralised NBS+ library, the industry standard specification authority for the UK.

### NBS BIM Library & BIM Store

IG Lintels BIM models are now available on NBS BIM library, the fastest-growing building information modelling (BIM) library in the UK and also on BIM store. Building Information Modelling (BIM) is the process of designing a building collaboratively using one coherent system of computer models rather than a separate set of drawings. BIM offers enormous gains in both cost and time saving, much greater accuracy in estimation, and the avoidance of error, alterations and rework due to information loss.

### New Hi-therm+ Animation

Architects can discover the benefits of Hi-therm+ in just over a minute with IG's new video. Highlighting the key features of Hi-therm+ and how it offers a low cost solution to reduced carbon emissions.



FIND OUT MORE



Technical Helpline

**01633 486 486**

[iglintels.com](http://iglintels.com)

INTERVIEW CIAT

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TITANIC BELFAST

Eric Kuhne of Civic Arts was responsible for the original design concept, while Belfast practice Todd Architects and interior designer Kay Elliott worked alongside them to deliver the project. The building contract was £77m within a £101m total museum cost.





# People & Places

WITH  
EDDIE WEIR

In the first of a series, we ask a professional about their favourite local building and what inspires them in their role. First up, is Eddie Weir, President Elect of CIAT and Principal Partner of ADP, based in Holywood, County Down.

**B**elfast has many wonderful buildings, both new and from our Victorian industrial past, however none have achieved an overnight iconic status to equal that of Titanic Belfast. It is an amazing building which creates a dramatic skyline which is why I chose it as a backdrop for one of my manifesto videos for the CIAT presidency.

INTERVIEW CIAT

## First Steps

Since childhood, I've had a fascination of knowing how things work and are made, then I developed a love for buildings and design, so I suppose this combination was always going to lead me down the path of a career in architectural technology. Along the way I learnt about the value of team work and that's why today I am so passionate about sharing knowledge and the role of CIAT.

## Inspiration

It is an exceptional feeling to look at a finished building in the knowledge that you created the concept for something that has the potential to improve the quality of people's lives. We have the privilege and opportunity to change our landscape and leave a legacy for others to enjoy. What's particularly exciting about the role of architectural technologists is that we design holistically, taking our conceptual designs right through to the technical solutions for the build.

## CIAT

I attended my first CIAT event while at university and was very quickly hooked and soon involved with the Regional Committee. A few Officer positions followed before becoming the Regional Chairman and eventually Vice President Practice. Words can't describe my excitement now, in advance of my inauguration this November as the next CIAT President.

We now have 16 regions throughout the UK and 7 international centres throughout the world representing those practising and studying within the discipline and profession. The Chartered Institute of Architectural Technologists is dynamic, forward-thinking and globally inclusive.



CIAT sets and maintains education standards (at Honours and Masters degree level). It sets and maintains our standards of practice through these professional qualifications and our Code of Conduct.

We are also excellent at collaborating with like-minded organisations to improve skills, knowledge and professionalism in the Built Environment. CIAT recognises excellence in Architectural Technology at its prestigious AT Awards event. This is a truly unmissable event and takes place at the Village Underground in Shoreditch London.



CIAT is dedicated to improving collaboration and competence because we believe the industry works best when all the professionals co-operate.



## What's next for construction?

The insatiable need for more housing across the UK is of course a major driver for new ideas in construction. Offsite products will play a massive and fundamental role in helping to meet this. It is a complex issue but offsite products can offer many advantages to the construction of new homes such as, efficiency, predictability, sustainability and safety. This will inevitably lead to a decrease in build times therefore leading to more housing.

Construction must respond to the big issues such as climate change, skills shortages and the changing profile of our population. 20 years ago, Modern Methods of Construction (MMC) was considered as ground breaking and innovative, but now with the use of continually advancing technologies and a greater understanding of their importance, MMC is being given its proper place in the industry.

Currently we tend to design a hybrid of both traditional forms and encourage the use of offsite elements of the building fabric where the design or the brief permits. Looking further into the future I would like to think that smart forms of construction addressing the big issues would become the norm.

Construction must respond to the big issues such as climate change, skills shortages and the changing profile of our population.



## How will CIAT respond?

CIAT is dedicated to improving collaboration and competence because we believe the industry works best when all the professionals co-operate. To that end - we have quite a few task groups working on a wide range of initiatives such as; 'Building a safer future', ensuring failures such a Grenfell cannot happen again. 'Building communities' by ensuring that a holistic approach is the focus when designing.

We are also working with members on the "climate emergency" targeting actions to attain the UK Government's zero carbon commitment. Also, assisting those that deal with public procurement in understanding the importance of fair competition and inclusivity in respect of invitations to tender.

We have set up a Technical Standards Task Force to scrutinise all current standards to ensure their objectives are met sensibly, that they are workable and avoid conflicts.

Finally, we continue to advocate for higher standards of Health and Safety in all construction projects, without forgetting about the mental health issues prevalent in these times.



Drawing Room, Titanic Hotel, Belfast

# Luxury Living In Berkshire





IG designed bespoke brick slip solutions to achieve numerous complex brick requirements throughout the interior and exterior of this luxury residence.



#### Architect

Gregory Philips Architects

#### Contractor

Relicpride

#### Location

Berkshire

#### Products Used

Brick Slip Masonry Support,  
B.O.S.S.® & Brick Slip Lintels

## Overview

**T**his Berkshire property is located in a beautiful woodland area, surrounded by green space.

The modern design of the property, with large areas of glass and cantilevered balconies, immerses the residents into nature. The north and south facing elevations utilise contrasting materials, to compliment the brick elements and surrounding views.

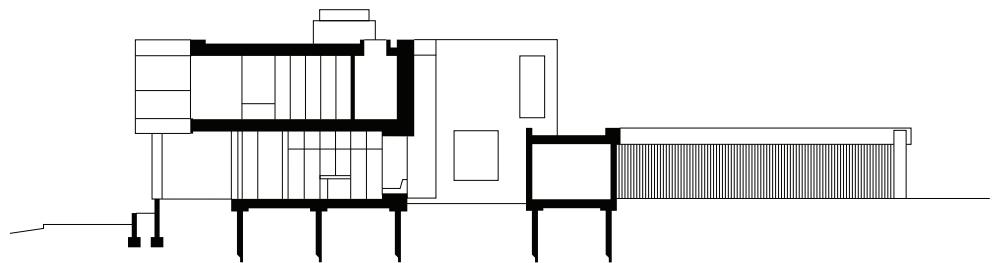
Relicpride specialises in prestige high specification homes. Their team contacted IG to develop a range of bespoke brick slip products to achieve intricate brick detailing on both the exterior and interior of the property.

CASE STUDY PRIVATE RESIDENCE BERKSHIRE

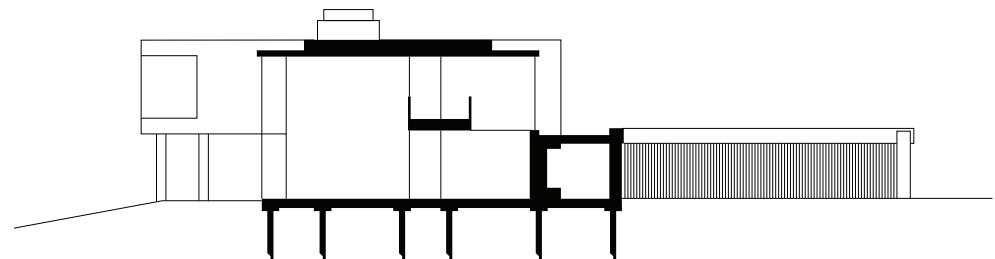


## Challenge

The brick elements played an important part of the architect's vision for this contemporary, high specification home. A variety of openings of different sizes throughout the exterior of the dwelling created the need for numerous brick soffit solutions. The brick detail on the fireplace inside the property required a continuous brick soffit that spanned over 2.5 meters in length; this was just one of the intricate challenges this Berkshire project posed. To achieve the details traditionally, onsite, would have been a time consuming task that required brick cutting and additional skilled labour.



East facing elevation

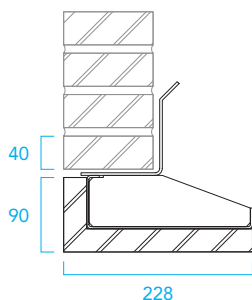


West facing elevation



## Solution

IG's Brick Slip Lintels achieved the brick soffits over the smaller span openings on the north elevation of the dwelling. Internal openings and along the south elevation, IG employed welded masonry support and B.O.S.S.® (Brick On Soffit System) bolt up technology. The handmade Petersen Tegl D91 brickwork featured throughout exterior elevations also continues inside the dwelling. IG's technical team developed a bespoke brick slip masonry support system for a number of internal applications including the fireplace in the dining room, demonstrating the versatility of IG's brick slip products.



Section view

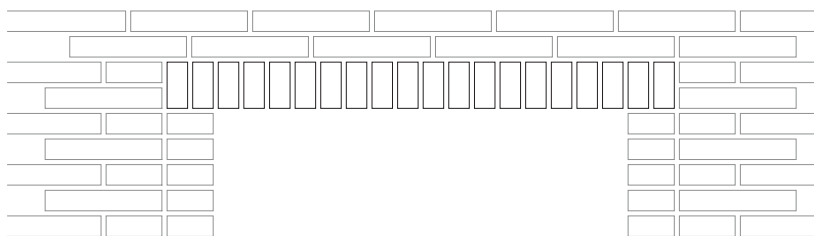


The offsite prefabrication of these components offered us the assurance of a strict quality controlled product, combined with a considerable time-saving on installation.

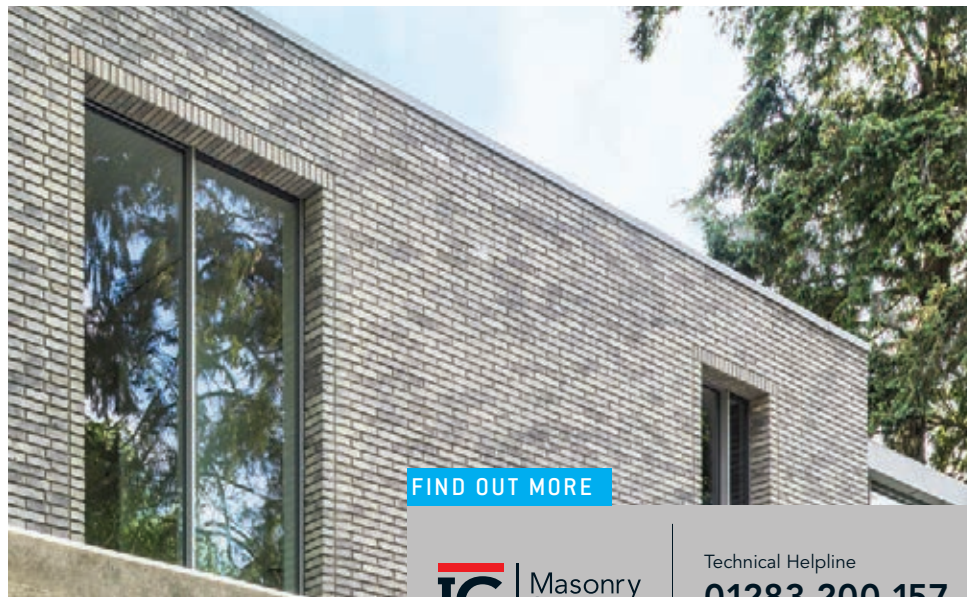
Eamon Coyle  
Director, Relicpride Limited

A consignment of the brick being used onsite was collected by IG to ensure that the prefabricated components blended seamlessly with the brickwork onsite.

The finished high specification dwelling has been recognised for its architectural excellence at the International Architecture and Design Awards, winning the Luxury Residence Europe category in 2017 and has also won a RIBA Award in 2018.



Elevation



FIND OUT MORE



Technical Helpline  
**01283 200 157**  
igmasonrysupport.com

# ‘But Westward, Look, the Land is Bright’

WITH  
AARON TERRY

With over 110 staff, Roberts Limbrick Architects is one of the largest practises in the South West. We speak to Director Aaron Terry for an insight into this regional practice.



## Honeybourne Place

Honeybourne Place is a landmark new office development in the heart of Cheltenham's business quarter providing 65,000 sqft net office space over six floors. The striking contemporary design and high-end specification set it apart and raises the bar for offices within Cheltenham.





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## What is your current role?

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**O**ver the years I've had quite a lot of experience in every sector but my focus is now firmly on residential work with commercial clients, leading a team of 38 people. Together we offer master planning, design, planning and technical solutions to regional and national house builders.

I take huge pride in the level of service we provide and thankfully that is reflected by 85% of our work being generated from repeat business. We benefit greatly when people move around in the industry, because inevitably we get a phone call asking 'can you come talk to me at my new company'.

Architecture plays such an important factor in every aspect of work and in life. It's about creating a sense of place and good environments for work, learning or health that makes a real difference to peoples lives.

## What type of work does Roberts Limbrick handle?

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We've currently about 110 people across the offices in Gloucester and Newport. We set up Newport about five years ago and that's up to 21 people now. Our work is multi-sectoral across residential, commercial, retail, health care, education, sports and leisure. Our wider sector experience has provided us with opportunities on mixed use schemes where funding is needed from a privately led sector to help fund a public sector scheme.

Likewise, many of the academies we work with are cash poor but land rich, so we can help them with a range of advice and services when they opt to sell land for residential development. These sales can generate large sums of capital for the academy which they can use to expand their education facilities.

I've also been involved with some luxury residential projects including a £20 million house for an industrial client, and some very well specified apartments in the Channel Islands.

**INTERVIEW** ARCHITECTS IN FOCUS

**Do you have a favourite project?**

Yes, the client came to us with an ambitious and important brief for a landmark building to act as the catalyst for wider regeneration of the area around Lower Commercial Street in Newport. Although there has been substantial investment to the wider Newport area, this area had missed past opportunities. The project was an apartment scheme for age-restricted housing for the over 55's. The major challenge for the site was in the form of a large and over-bearing concrete multi storey car park which adjoined the site to the rear.

Our design solution managed to totally screen out the car park and at the same time we designed rooftop gardens, creating different break out areas for use by the residents. Usually on these types of projects we almost expect our proposal to get watered down due to funding, but here, the client was adamant that the quality in the scheme would be maintained so the project would act as the catalyst for wider regeneration. Its always nice to be involved in a project where the brief is valued so highly and retained all the way through.

The project is due to be completed next year but it is already attracting more investment into the area and is being supported by various stakeholders including the Welsh Assembly Government. From our perspective it has been a very rewarding experience to be involved in a local project which is making such an impact.

**Are you engaging with offsite products?**

Definitely, it's where the future is going, partly driven by the pressure for the earliest possible completions in the residential sector. Typically, we get planning and the following day our clients want to be on site putting in foundations. Clients are now investigating offsite fabrication for entire houses and also looking at offsite elements and part components.

I see this as a growing trend over the next few years which will bring benefits to the whole sector. One particularly positive aspect is the way in which the offsite providers are equipped to engage early on in the design process.



This is refreshing and makes our team's job easier. We've done traditional timber frame, lightweight steel and are currently working on offsite pre-fabricated houses. We also have extensive apartment experience with steel and concrete frames and we are working with the light gauge steel Fusion system at the moment. There is a lot happening in this area and we are constantly engaging with new ideas and systems which we see in the market.

**123-129 Lower Commercial Street**

The scheme provides continuity at the street level through the use of a modern palette of materials which compliments the existing street scene.



## Are you familiar with our offsite Smartroof System?

Yes, and I think the big thing for us is good detailing, clear specification notes, clear information of what tests have been carried out. We value an emphasis on workmanship and support from manufacturers to help with the site installation.

Features like your integrated fire sock at the party walls is exactly what house builders are looking for in terms of good detailing and safeguards.

## What do you see as the 'big issue' currently?

It has to be the fallout from Grenfell and the expected Part B changes in light of the Hackitt report. The extra pressure will come on manufacturers with regards to fire performance and a move away from indicative test reports. At present we have clients who have had to go to Europe to secure fire tests because the UK facilities are fully booked and producers are trying to stay ahead of the game and pre-empt the requirements of any new regulations.



### **A** Cheltenham Racecourse

Our extensive sports and arena experience includes the multi award winning redevelopment of Cheltenham Racecourse.

## Where are you on BIM?'

We ran one of the first trials of Revit about 20 years ago but it never really got going at that stage but we have been using Revit extensively now for the past eight years because of our public sector work in health care, leisure and education. Over the last two years our residential teams have also moved heavily into Revit as our clients have started to adopt it also. It has been slow to integrate at all levels and only now are we really talking about fully integrated models as the industry invests more and we start to see sub-contractors and suppliers get fully up to speed on BIM.

### **<** Forest of Dean College Campus

The design consists of three distinct but complementary elements which include a vocational training college, a sixth form centre and a central hub.



# Bright Ideas

When you listen to anyone enthuse about their experience in a new home, hotel or public building, it is almost certain they will include the words ‘bright and airy’.

**I**n fact, these words are exclusively reserved for exchanges of positivity, suggesting that maybe the driver for this appreciation of natural daylight is more than just emotional.



Every architect is attuned to the process of optimising a new building's orientation in relation to the daily passage of the sun where possible. Similarly, there is a high level of recognition that the amount of glazing as a percentage ratio of floor area should be up to 25% depending on a building's use. In Bream's assessment criteria for visual comfort, daylighting is the factor with the highest credits, again highlighting the importance of a planned approach.

Various research studies into the value and benefits of natural daylight have been carried out around the world in different types of buildings.

The effect of daylight in educational classrooms has been widely investigated. In one US study, it was found that the surveyed students with the most daylight in the room progressed 20% faster on maths tests compared to those students with the least daylight in their classrooms. In Canada, research showed that students who studied in natural light, outperformed by 5 -14% of those learning in artificial light. The same study indicated a reduction in absence of the students studying in natural light.

The working environment has also been researched and results showed similar outcomes with improvements in performance noted, expressed in terms of higher productivity and contentment in their roles.





A review of the research into the impact of daylight in healthcare buildings also shows strong links to significant benefits such as shorter occupation of beds, reduced reliance on pain relief and quicker postoperative recovery.

When planning daylighting in new buildings designers can make full use of both vertical i.e wall placed glazing and also roof based glazing. It is a surprise to many, to learn that roof glazing will provide up to twice the amount of daylight than the same area of vertical glazing. This fact, along with the range and versatility of roof based glazing, makes it a powerful option in refurbishment or extension type projects where often the option for additional wall glazing is limited.

According to Matthew King, Sales Director at Keylite the interest in roof based daylighting solutions is growing rapidly with increasing demand of both pitched and flat roof products. Keylite now have an extensive range of innovative products catering for this demand.

For pitched roofs, the well known roof window format continues to be a versatile choice and Keylite has responded with extensive development in terms of thermal performance for enhanced user comfort and energy efficiency. New options also include a dormer style installation which will maximise the impact with minimum disruption to the external roofline.

Flat roof options for daylighting have come a long way since traditional patent glazing techniques and these now share the developments in glazing units and efficient glazing profiles which are designed to reduce thermal bridging and heat loss.

Together these multiple options combine into a powerful single resource for designers to engage when addressing the issue of daylighting.



Research shows multiple benefits of enhanced daylighting.



FIND OUT MORE



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[Keyliterateofwindows.com](http://Keyliterateofwindows.com)



# Delivering a Masonry Masterpiece







**Architect**  
Purcell UK / Steffian  
Bradley Architects /  
John Simpson Architects

**Contractor**  
Interserve

**Brickwork Contractor**  
Lee Marley Brickwork

**Location**  
Stanford on Soar, Midlands

**Products Used**  
IG Brick Slip Feature  
Arches & Cornice

**Builders Merchant**  
EH Smith



The distinguished façades of the Defence and National Rehabilitation Centre's (DNRC) timeless buildings feature over 1,000 Brick Slip Feature Arches and 3km of offsite Cornice designed and manufactured by IG Masonry Support.





**CASE STUDY** DEFENCE & NATIONAL REHABILITATION CENTRE

Overview

The Defence and National Rehabilitation Centre (DNRC) is a bespoke £300m purpose built clinical rehabilitation centre of excellence based in the Midlands, at the Stanford Hall Rehabilitation Estate near Loughborough.

The classical architectural style of this project extends to over 47,000m<sup>2</sup> of floor space, of which approximately 41,000m<sup>2</sup> is new, purpose-built accommodation. Two storey structures were configured around a series of interlocking courtyards and external garden spaces, creating distinguished, timeless buildings respectful of the existing architecture, including the Grade II\* listed Stanford Hall.

Each elevation features a network of complex brickwork elements. Lee Marley Brickwork collaborated closely with IG design engineers, utilising modern building techniques to create the brick façade and achieve the architect’s vision.

IG Masonry Support manufactured and designed a range of bespoke prefabricated brick slip solutions, including over 1000 Brick Slip Feature Arches and just under 3km of offsite Cornice.

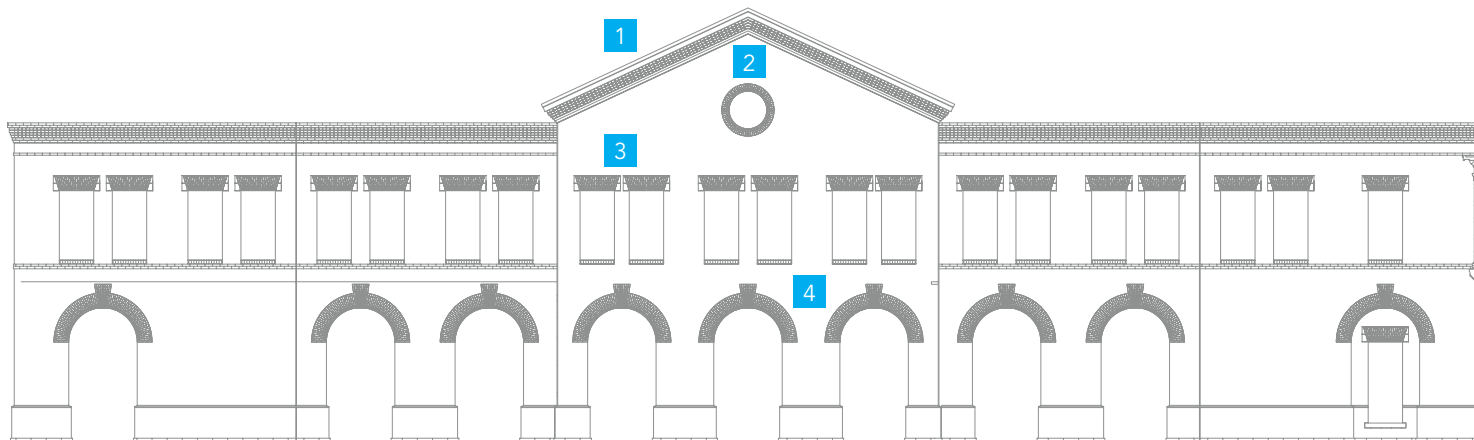
IG’s Brick Slip Feature Arches are one piece prefabricated units, manufactured bespoke to order. The patented perforated stainless steel in an IG Brick Slip Feature Lintel allows BBA approved adhesive to squeeze through the perforations and form a ‘mushroom’ on the inside, providing a mechanical and chemical bond between the steel lintel and bricks. IG collects a consignment of bricks from site, they are then cut into 25mm brick slips and bonded to the lintel. This eliminates the need for a specialist brickwork contractor spending hours onsite, cutting bricks to suit complex brick details. The finished Brick Feature Arch blends seamlessly with the surrounding brickwork.



**Neil King**  
Senior Architect  
Purcell UK

IG Masonry Support was instrumental in achieving over 1000 brick arches and cornices of classical and traditional architectural styles. The IG systems were chosen for their efficiency as prefabricated units and to achieve the desired aesthetics. The quality and craftsmanship is apparent throughout and has delivered on the façade envisioned at the beginning of the project, giving the impression that the buildings vary in age and have grown over time.





## Challenge

Consistency and quality were essential when replicating the complex brickwork elements throughout this 21st century state of the art landmark project. To create the arches using traditional methods would have been a time consuming task requiring a great deal of skilled labour and brick cutting onsite. IG Masonry Support's offsite solutions provided greater certainty for project delivery within the ambitious construction schedule.

## Solution

IG's Brick Slip Feature Arches and Cornice offered the perfect solution for achieving the key architectural features on the exterior façades of the buildings. A clock tower retained from the demolished stable block at the historic estate forms the cornerstone of the main courtyard which features a series of impressive arches throughout its ground floor elevation. The design of the arches vary throughout each elevation, featuring a collection of different classical architectural styles. IG provided Lee Marley Brickwork with Brick Slip Feature Arch solutions that enabled them to achieve grand architectural details with the simplicity of a single piece prefabricated component.

The largest free standing arch installed on the development spanned an impressive 8.7m opening, the base of the arch sits at 9.5m above ground level. This bespoke Brick Slip solution incorporated a 0.3m deep brick soffit and a 0.8m brick face.

- 1 Offsite cornice
- 2 Bullseye lintel
- 3 Flat gauge arch
- 4 Semi circular arch with keystone detail

The arch was fully installed in under an hour, demonstrating how effective modern building methods can deliver large-scale brick features. Crowning the brick façade of each building, the corbelled cornice demonstrated a varying degree of complexity. IG designed and manufactured a lightweight system of cornice units to achieve this architectural element.

The speed at which the corbelled units were installed significantly reduced the amount of time that Lee Marley Brickwork's team were working at heights.

IG Masonry Support's products provide quality and consistency and this proved a major advantage for Lee Marley Brickwork.



FIND OUT MORE

**IG** Masonry Support

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**01283 200 157**  
 igmasonrysupport.com

# Joined Up Thinking

WITH  
PETER CAPLEHORN

During Peter Caplehorn's early career as a chartered architect his involvement in large commercial projects was the start of a special interest in the more technical aspects of construction.

This led him eventually into a series of advisory roles including time with BRAC committee, British Standards and CIC. He has written two books on subjects ranging from Health and Safety to whole life costing, and he has contributed in various ways to the Grand Designs platform.

Now, after a spell with the CPA he is ready to take on the role of CEO at a time post-Hackitt when the construction industry from design through to completion must engage more closely on product performance and certification.

Innovating times caught up with Peter to gain his perspectives on some topical issues.

## What attracted you to the CPA?

What started as a passion for the work of Frank Lloyd Wright all those years ago developed into a passionate commitment to the benefits which architecture can offer society. After a varied career to date I have chosen to use my experience and expertise in a new way which aims to assist construction product producers navigate the next few years. I already knew many of the CPA members and was attracted to the opportunity to be based close to the construction scene in London.

## What special insight will your background in architecture bring product producers?

I am able to draw on my own experience and that from others at the many events and seminars with architects that I have contributed to. I believe the best relationships between architects and product manufacturers are ones that can be proportionate, because architects initially don't want to be bombarded with loads of stuff but they want enough information to put a product in the initial design and sell it to the client. After that, they want reliable and sensible information that will support that initial enquiry enabling them to home in on a project specific choice.

I would stress to producers that the big difference they can make is with technical support once the job is in the construction phase and when the building is finished. Some of the best relationships over time that I've had, have been around the fact that nothing has necessarily gone to plan but the manufacturer has stepped in and given additional information or even in some cases they have corrected problems and got things back on track.





“

I believe the best relationships between architects and product manufacturers are ones that can be proportionate.

**INTERVIEW** INDUSTRY OPINION

## Is BIM working as it was envisioned?

I think everybody had a slightly different vision for BIM 10 years ago because everybody felt that it would develop faster than it has and there are a number of reasons why it hasn't become universally adopted. While architects are now widely equipped for BIM, one of the most significant factors is that people across the industry are still using different methodologies which has hampered their ability to link together, so we have a bit of a commercial issue. BIM is not happening yet because we don't have all parts of the industry operating to the same level of digital competence.

One of the things I've been trying to do in CPA since I got there is improve how products are described digitally as they're the DNA

of all projects, so we must aim to achieve the same level of sophistication in product information as we have with everything else.

BIM will really start to shine when we've got a universally joined up industry and by that I mean a completely digitized construction industry. The future lies in the application of the AR and VR technology which has already appeared in some parts of the industry.

## Describe your favourite building in London today and explain why?

I'm very torn actually because there are a couple that are really good. I think my favourite building is the Shard because it really does identify how UK architecture and UK construction can be world leading.

To me it has something for everybody, it's a great focal point for London, its iconic, people go up to the top of it, people work in it and you can eat it and it's regenerated that part of London as well so it's got a lot going for it. On my top list is also Bloomberg's new offices and also the British Museum.

## Should our industry move to mandatory accreditation for performance critical materials in terms of fire proofing and structural integrity?

We must acknowledge the fact that we do have a sector where some companies have full third party accreditation testing and others do not. Regulations now call for performance criteria to be established but the system currently lacks the process to apply sanctions where the standards are breached. I think this will change quickly and I would suggest that anybody who has not got proper accreditation will be forced out of the marketplace.

## What are your priorities as the interm CEO of the CPA in the next 5 years?

I think the important priorities for the CPA are making sure we continue supporting members, making sure we are addressing their concerns as we face the implications of Brexit and the Hackitt reforms. We as an association need to be up to speed with all of those issues including digital and help members where we can.

We need good connectivity with government, making sure we have a proper dialogue to express our concerns and opinions to try and prevent ridiculous regulations being brought forward. So we're acting as a liaison between the two parties to ensure they understand each other.



The Shard, London





British Museum, London

Our industry notoriously ‘value-engineers’ solutions during the build process. What suggestions might you have to reduce this risk?

Substitution is a real problem across the industry and it has been for quite some time. We are investigating new digital techniques which will allow us to mark each product clearly and precisely so they can be easily identified on site as the specified product. Each product’s digital object would share the same coding in their specification or BIM model, so it follows all the way through specification and procurement. This would help to establish a level playing field and avoid the performance gaps which can occur when products used are not like for like.

We also have another project called Lexicon which is about organising the information for every manufacturers project into the same common terms and the same structure and that will mean identifying from product A and product B will be a straightforward process.



I think the important priorities for the CPA are making sure we continue supporting our members.



The government’s 2025 future home standard seeks to end fossil fuel heat sources. Can we deliver on this as an industry in a relatively short time scale?

I think CPA members are very well aware of the key driver for this is climate change and everybody must be fully aware of the drivers that need to addressed in producing less carbon, making buildings more efficient, therefore everybody is researching and developing products that answer some of these products.

I often say that innovation is done by stealth and if you look at the performance of materials today they are vastly improved compared to say, 5 years ago. There are some very innovative energy ideas coming forward and the manufacturers are pushing hard for improvements so their response is likely to be ‘look we’re doing our bit and this is how we see it going forward’.

# Lovell Homes

## Eaves to Ridge Smartroof System with Timber Dormers & Front Pediment

Lovell Homes previously used traditional methods in the construction of its three storey homes in a process involving masonry gables, attic trusses and hand cut pediments. The Smartroof System was installed in 1 day.

Maintaining maximum site safety was a concern due to the extensive working at height plus the risk of collapse of masonry gable walls during installation. Mitigation methods for these safety issues required the use of both internal and external scaffolding with associated costs. The Smartroof installation process eliminated these risks.



I was very impressed with the entire Smartroof process from design to installation and I will definitely use the system on future projects.

**Chris Nelson**  
Contracts Manager  
Lovell Homes



**Builder**  
Lovell Homes



**Site**  
Heath Farm, Holt Plots 200 & 205



**Architect**  
Chaplin Farrant Limited



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## David Wilson Homes Flat Door Canopies

David Wilson Homes have breathed life back into the Chocolate Works in York. The site was the confectionery factory of Terry's of York, England. Opened in 1926, it closed in 2005, David Wilson Homes has redeveloped this as a mixed-use residential /commercial real estate development.

The challenge on this site was keeping the character and standard of the original building. The solution that IG Elements provided was a number of flat door canopies with bespoke colours to complement the existing building.



IG Elements have been supplying our sites for the past 4 years and they consistently perform in terms of customer service, efficiency and quality.

**Dave Cooper**  
Senior Buyer  
David Wilson Homes



**Builder**  
David Wilson Homes



**Site**  
The Chocolate Works, York



**Architect**  
Studio Partington

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