

# finesse

Project magazine 2014

Industry news:  
RIBA Award Winners  
Museum Special  
Restoring Historic  
Buildings  
Impact Testing  
Cold Bridging



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## WELCOME

London is now the most popular city in the world with tourist figures overtaking Paris - this is all good news for the construction industry and is reflected in on going regeneration schemes including those around Victoria, which Szerelmey are a part of. MIPIM, which Szerelmey exhibited at again, was also a good benchmark for the state of the industry, with attendance figures up and a more positive vibe, doubtlessly aided by better weather.

Weather, or at least heat, is high on our agenda with increasing emphasis on cold bridging and efficient building envelopes. Fixing systems are evolving to reduce thermal loss, something our design team advises on in the early stages of projects - find out more in our technical section.

We are delighted that Tate Britain, see interiors, has won a RIBA National Award, and others, since we completed our extensive work there, as has the Library of Birmingham. Other news includes a report on the newly formed Chichester Stoneworks and Szerelmey Conservation. ■

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## Q&A



**Andrew Bonner**  
Managing Director  
Szerelmey Conservation

**In our last Finesse we spoke to Mark Chivers, Managing Director of Szerelmey Restoration. Here we talk to Andrew Bonner, MD of Szerelmey Conservation. Can you tell us the difference between Conservation and restoration?**

In many cases the line is very fine, and the two can overlap on a single job. Many people don't realise that there is a difference at all. In simple terms conservation involves preserving the historic fabric by employing non-invasive techniques to prolong the life of the original materials in as unaltered a condition as possible. This means that any repairs must be done using exactly the same materials as the original; repairs should, wherever possible, also be reversible and removable without affecting the original material. Conservation is also about preserving the building, monument or object in a way that sustains and where appropriate enhances its significance. Restoration involves returning a building, or part of a building to the way it looked in a previous time.

**How long have you been involved in the industry and can you tell us something about your background?**

I have worked in the industry for over 25 years, having begun as an architectural (banker/carver) mason. I still have a workshop at home where, when time permits, I like to work with stone. I think having a broad appreciation of working both sand and lime stone really makes a huge difference when conserving historic buildings. I spent many years working as a Contracts Manager on a variety of conservation projects before being made a director at Cathedral Works Organisation.

**What are some of the most interesting projects you have worked on in the past?**

I have been really lucky to be involved with some fascinating projects over the years, which have led to two different companies I worked for earning the Royal Warrant. One project that was particularly interesting and rewarding was the work carried out on St George's Chapel, Windsor Castle, following three phases of conservation between 2006-2010.

**Why do you consider conservation is so important?**

We are really lucky in this country to have such a strong conservation ethos and this is reflected in the incredible buildings we have. This doesn't just extend to huge mansions and palaces, but also to small, but historically important buildings too. This legacy means that we now have a cross section of important buildings that provide an insight into our architectural heritage of domestic, royal, public and ecclesiastical buildings throughout the centuries. It is very much a case of preserving the past for future generations and I am delighted to contribute in a small way towards this.

**How do you see Szerelmey Conservation strengthening the Szerelmey brand?**

This is a really positive move, our conservation skills combined with the restoration team can only serve to strengthen the Szerelmey brand. ■

# SZERELMEY WELCOMES NEW COMPANY TO THE GROUP

## INDUSTRY NEWS

2014 started out as a year of big changes in the industry, not least with the **emergence of Szerelmey Conservation**, a new company established by Andrew Bonner, former Director of Cathedral Works Organisation (CWO). Under Andrew's experienced leadership Szerelmey Conservation will continue the specialised conservation and restoration works previously undertaken by CWO, while continuing to expand the Client portfolio. Szerelmey Conservation has been enabled through the support of the Szerelmey Group and will complement the extensive services currently offered by Szerelmey.

Andrew is a trained banker mason/carver with over 25 years of experience in the industry and has worked on some of the most high profile conservation and restoration projects in the country. This includes numerous phases of work at Windsor Castle and at the Chapel of St George following the devastating fire in 1992, along with ongoing conservation projects at the Historic Royal Palaces including Hampton Court and the Tower of London. Szerelmey Conservation undertakes all size of projects from extremely large and prestigious works to small packages that can be facilitated very quickly. Andrew and his team have developed a reputation as some of the most highly qualified, knowledgeable conservation specialists in the industry.



The London-based Szerelmey Group was originally founded in 1855 on the principles of restoration; Nicholas Szerelmey, a Hungarian engineer in the Austrian army developed the Zopissa Induration Process, which was recommended by Sir Charles Barry, architect of the Houses of Parliament, for its restorative qualities. Although the Company expanded its range of services to encompass new stone work, terracotta, internals and hard landscaping many years ago, restoration and preserving Britain's architectural heritage remains a powerful driving force. Szerelmey Conservation will work alongside the Szerelmey Restoration department so the Group can offer holistic services covering all types of preservation, conservation and restoration. ■

# TATE BRITAIN AND THE LIBRARY OF BIRMINGHAM WIN NATIONAL RIBA AWARDS

**Page left**  
Lion Gate  
Hampton Court

**Page right**  
Library of  
Birmingham terrace



**The Royal Institute of British Architects has announced the 56 winners of their 2014 national awards and Szerelmey are delighted to have been involved with two of them! The awards recognise outstanding new buildings and the shortlist for the coveted Stirling Prize is drawn from them. The Library of Birmingham has been selected for the shortlist.**

Tate Britain, which Szerelmey worked on extensively for architects Caruso St John, is a stunning winner of the National RIBA award, the regional RIBA London Award and the RIBA English Heritage Award

for Sustaining the Historic Environment. Another recipient of multiple prizes is the outstanding new Library of Birmingham by Dutch firm Mecanoo Architecten. With its bold, geometric façade composed of shimmering, interlocking rings, the building is an unashamedly stand-out new civic statement, and is also the largest new public library in Europe.

The new library fronts one of three piazzas that form Centenary Square, and is composed of four stacked rectangular volumes that create interesting terraces and spaces including a sunken amphitheatre and rooftop gardens. Szerelmey sourced and installed the Portland based limestone curved fascia and soffit to the sunken amphitheatre as well as the Crossland Hill Yorkstone, with Zimbabwe Negro nosing to the upper level paving, seating areas and steps. ■

# CHANGING SPACES MUSEUM SPECIAL

*“It has been a real honour to undertake this extensive work at Tate Britain, and we are particularly pleased with the new grand staircase which was a complex element.”*

~ John MacEachin, Director Szerelmey

## Tate Britain

Szerelmey were key to the extensive works at Tate Britain, which have been widely critically acclaimed by the press. Not least is the magnificent new, grand riverside entrance approached via the Millbank-facing steps, which were repaired, restored and re-weatherproofed.

The centre piece of the work's package is the spectacular new spiralled staircase that was inserted into the main entrance rotunda. This represents a major addition to the former layout of the museum and redirects the public. The new staircase consists of an elegant, curved steel form with a stainless steel and glass balustrade and twenty-five steps. The top of the stairs are marked with a decorative precast agglomerate balustrade with incised fleur de lis detailing. The agglomerate balustrade was particularly complicated to install and was done so in four large

4.5 metre long sections. Szerelmey installed a second sweeping staircase also constructed from large precast pieces.

Complementing the staircase is the flooring on the upper level in the same black and white with an art deco-inspired pattern. Szerelmey installed a further 2000 square metres of agglomerate flooring to the lower levels of the museum. The Restoration Team cleaned and repaired over 800 square metres of terrazzo flooring and the complicated marble mosaic flooring in the grand entrance hall.

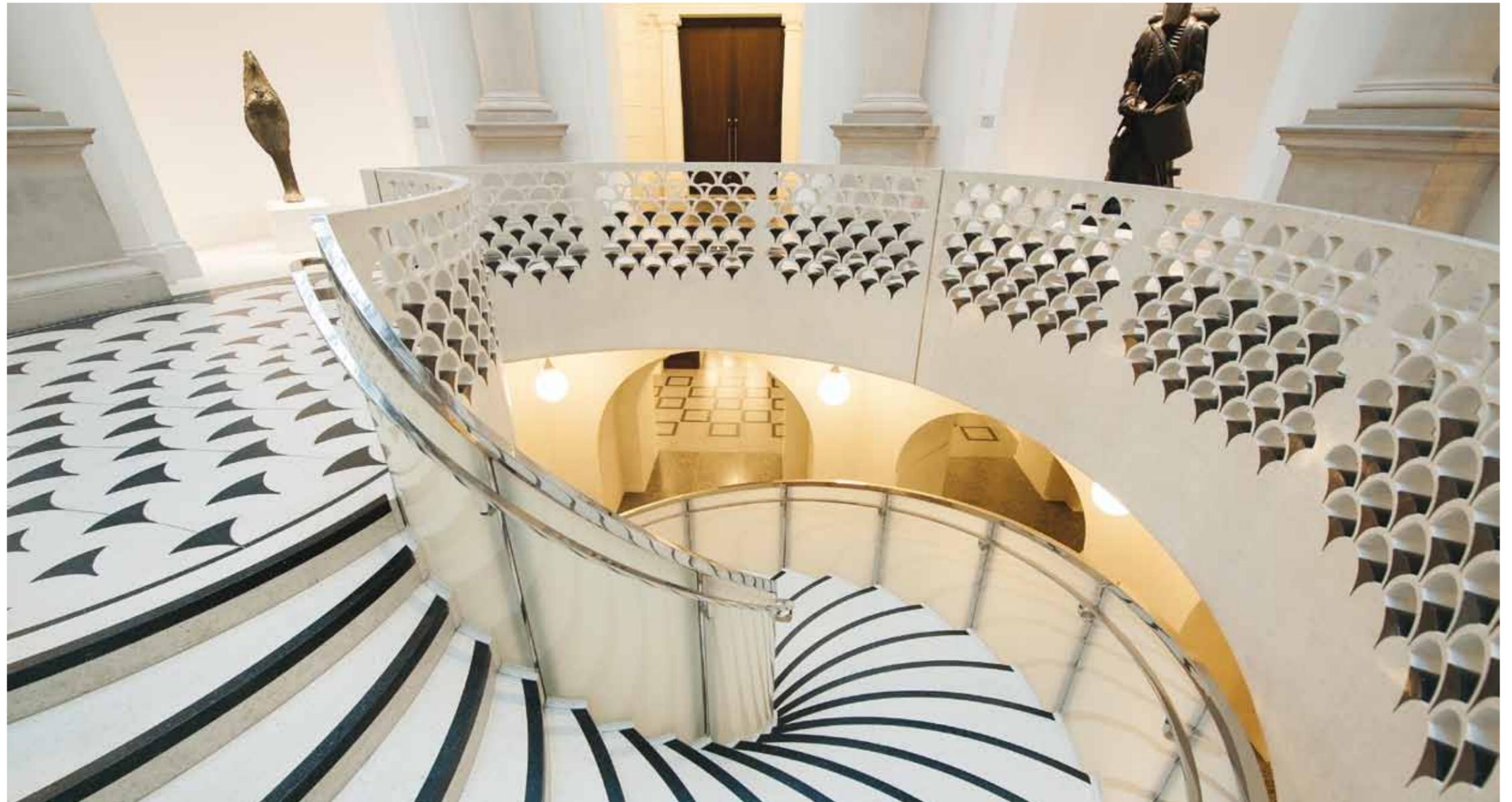
Further changes to the public's circulation have been made through the conversion of existing window arches facing onto the SWQ Garden, into doorways to form the new school's reception entrance. Szerelmey undertook all the stone work and in addition installed the retaining walls in the garden, York paving, railings and floodlights. ■

## INTERIORS

Figures from the Office of National Statistics in January 2014 revealed London is the most popular tourist destination in the world with a 20% increase in visitors since the 2012 Olympics. The **continued growth in the Capital** is reflected in the ongoing level of construction, and is also particularly evident in London's museums.

Both Tate Britain and the British Museum have experienced record visitor numbers over the past couple of years with the British Museum rated the top British attraction according to visitor numbers published by the ALVA (Association of Leading Visitor Attractions). Both museums, like all our UK national museums have free standard entrance. These two leading London museums have recently undergone significant building works to capacitate the increased footfall.

Page centre  
Tate Britain, new  
grand staircase



# BRITISH STONE FOR THE BRITISH MUSEUM

*“Szerelmey worked closely with Mace and the architect from the design development stages, which was of significant benefit. Their high quality workmanship and ability to overcome a number of technical challenges enabled the smooth completion of this complex project – in all, they were great people to work with.”*

~ Paul Davey, Project Director Mace Group

## EXTERIORS

The British Museum is the second most popular cultural institution in the world with over 6.7 million visitors in 2013. It has recently overtaken New York’s Metropolitan Museum of Modern Art, with its surge in popularity based on the quality of its recent exhibitions. This year has seen the long awaited Vikings: Life and Legend exhibition open in the new World Conservation and Exhibition Centre. The museum has recently undergone extensive building work to the interior and exterior, along with restoration work, all of which Szerelmey has played a pivotal role in.

It is particularly appropriate that the British Museum incorporates the use of Portland Stone, which is mined on the Isle of Portland off the coast of Dorset and is one of the most distinctive and prestigious of our British stones. Portland stone has become synonymous with London’s historic architecture coming into widespread use during the 1600s and has continued to be used prolifically on prestigious buildings including Buckingham Palace and St Paul’s Cathedral, to the present day.

The British Museum’s stunning new Portland stone panels were installed by Szerelmey working in close collaboration with Rogers Stirk Harbour and Partners. Each slender panel, weighing approximately 42 kilos, was fixed to the external aspect of the steel structure of the new lift and stair core elevations over an area



of 1,100 square metres. These elevations consist of sleek glazed areas set off against the Portland stone panels that are simultaneously strikingly modern yet sympathetic to the existing building. The fossil heavy Portland roach is quite an unusual choice for externals given its heavy texture, but was chosen for its high level of surface interest and expression.

The installation of these panels was complex due to a primary requirement being they appear completely smooth on the interior as well as the exterior aspects. This posed a challenging design issue in the fixings used to attach the heavy Portland panels, which would normally be fixed through the steel. To achieve this Szerelmey used XBT fixings into the steel; XBT fixings are small steel fixings that are inserted to a pre-drilled hole at high impact. On impact the end of the XBT fixing melds with the existing steel forming an incorruptible bond. Kerf rails were then attached to the XBT and the stone panels individually attached to these. The XBT fixing is a device used in aircraft carriers and ship building and is quick and easy to install. ■

**Page centre**  
Exterior of British Museum showing new Portland stone cladding

# LONDON'S NEWEST SQUARE KING'S CROSS

Page centre  
King's Cross Square

**EXTERIORS**

The transformation of King's Cross station is finally complete with the area transformed from a slightly grungy place to navigate through at speed into a social destination. **Szerelmey were responsible for all the hard landscaping and cladding of the new public plaza to the front of the station, reputedly the largest new plaza to be built in London for over 100 years.**

Like all of London, the King's Cross area is rich in history. Now famous for its bustling station, it is also reputedly the site of a legendary battle between Queen Boudicca and Roman invaders. It is said that Boudicca, Queen of the Iceni, was buried beneath what is now Platform Nine! The whole area, including where the new public square is, was largely fields until the mid 18th century.

Szerelmey has undertaken many projects here over the years least, not least extensive work on St Pancras Station next door. The recent completion of the new public square at King's Cross is yet another example of a long list of stations the company has worked on in both new build and restoration spheres. The new public square to the front of the station is a pristine and glamorous area, paved in a striking pattern of alternating stripes of beautiful Chinese black crystal granite, Crosland Hill York stone and SPI white granite. Szerelmey carried out the hard landscaping of the area to a tight schedule, but the entire project is the culmination of many years of planning and building, to a cost of approximately £550 million. It has become the nexus for the regeneration of the entire area which includes the transformation of historic train sheds, the restoration of important listed properties and the creation of new commercial,



retail and leisure space. The new public plaza boosts a dynamic aesthetic through the geometry of the stone work. The perimeters of the plaza are delineated using the York stone, with the white and black granite creating the eye catching pattern. Szerelmey were also responsible for all the external cladding within the square including complicated curved structures such as the 'blue egg', an imposing ventilation shaft for the northern line. The cladding takes the form of graceful stone 'fins' of black crystal granite, which compliments the stone benches and planters also supplied and installed by Szerelmey. ■

**QUICK FACTS**

Years of the station history	Acres of redevelopment	Of which is public realm	And the new public square
162	67	40%	7000m <sup>2</sup>

# THE COMPLETE PACKAGE

## RESTORATION

March 2014 saw the re-opening of St Nicholas Cole Abbey following an extensive restoration and remodelling program undertaken by Szerelmey acting as **principal contractor**. This fascinating, historical building now serves as the St Nicholas Cole Abbey Centre for Workplace Ministry and is home to the “St Nick’s Talks”; bible-based lunch time talks, group studies and one-to-one meetings for Londoners.

Located on what is now Queen Victoria Street, St Nicholas Cole Abbey traces back to the 12th century and has a history entwined with fishmongers – the church takes its name from St Nicholas of Myra, the patron saint of children and fishermen. Originally known as “St Nick’s behind Fish Street”, the church has suffered greatly through the centuries, destroyed in the fire of London in 1666, rebuilt by Sir Christopher Wren and badly bomb damaged during WWII; Arthur Bailey reconstructed the church in 1961-62.

Szerelmey has recently transformed the building through extensive restoration and remodelling work. In addition to localised heritage repairs to the interior Szerelmey also repaired and replaced parts of the stone flooring. Insulation and underfloor heating was laid, with screed on top and the floor replaced with stone to match the existing.

Impressive glass screens were installed between three large internal arches and Szerelmey installed a new semi-commercial kitchen and restroom facilities. New flooring was laid, electrics and lighting installed, a new boiler put in and further underfloor heating laid. In addition Szerelmey constructed a new mezzanine level within the church and facilitated the new circulation of foot passage to accommodate this.

Externally, Szerelmey laid Forest of Dean sandstone paving edged with striking plum slate chippings. Glass balustrading was installed around the perimeter of this new outside area with resin bound gravel pathways and redecorated metal railings. ■

**Page left**  
St Nicholas Cole  
Abbey exterior  
and restored interior

**Page right**  
Africa House,  
reception area



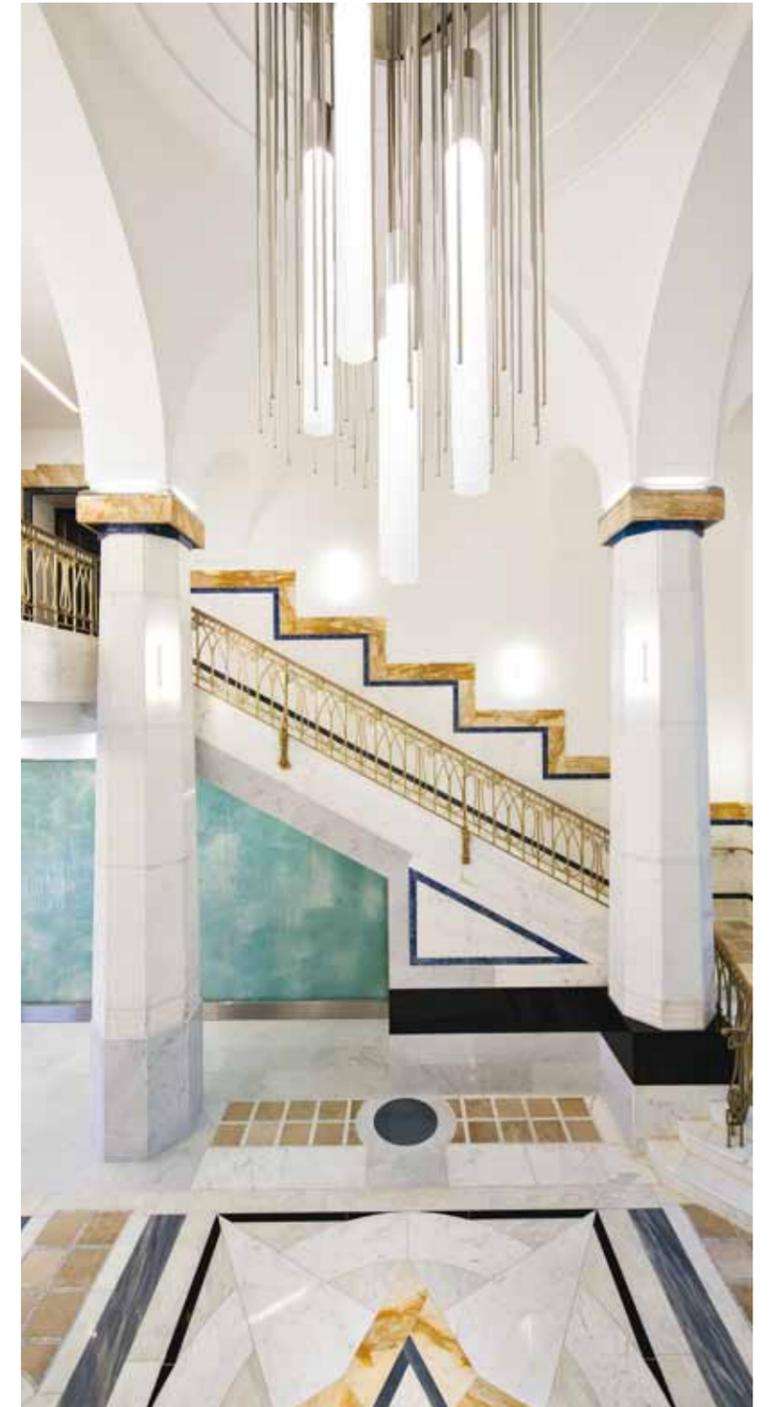
# RESTORING HISTORIC BUILDINGS FOR CONTEMPORARY USE

The newly restored Africa House building on Kingsway exemplifies how a historic building can be turned into a spectacular, contemporary office space. This stunning building has undergone **extensive restoration externally and internally by Szerelmey** to preserve its unique character, while the addition of new elements and remodelling of the interior space have resulted in the ultimate fusion of old and new.

The landmark grade II listed building was originally built in 1921-22 by Trehearne and Norman architects, and was a statement of power and wealth at a time when ironically, the British Empire was declining. It was built as a trading house for commodities imported from Africa and the main Portland stone façade, which was cleaned and restored by Szerelmey, features impressive sculptural works by noted sculptor Benjamin Clemens that illustrate its original function. These sculptures were all carefully cleaned and repaired by the restoration team who also worked on the three remaining facades of this stand-alone building. Adding old to new, Szerelmey sourced and installed the new east elevation in Portland stone, and a new annexe to the rear of the building.

The interior work carried out at Africa House represents a similar combination of restoration and new build to a stunning end. The traditional features and unique character of the building were treated with great sensitivity, and the rare and exotic materials identified and matched; a number of different materials including black granite, Bardiglio vein cut marble, Carrara Tessera, Impala black granite, Moleanos, a rich yellow marble and white Italian Carrara Bianca were used throughout. The floor, with its strong geometric pattern, mosaic and colourful finish is particularly striking.

The finishing touches of luxury were added to the reception area through the use of semi-precious materials on the walls and columns including Lapis Lazuli. ■



# MARK WALDEN THE KNOCK ON OF IMPACT TESTING



Mark Walden  
Szerelmey Design Manager

*“In all cases Mark and his team will endeavour to accommodate an architect’s design, although there may be a balance struck between the aesthetics and workability of the material.”*

## PROFILE

**Impact testing is a small but mighty requirement that is currently causing a storm in the industry. At Szerelmey it is an important element of design and fixing systems and one that has caused its fair share of headaches recently, particularly since impact testing requirements are having a knock on effect on fixing systems and in turn, influencing the thermal performance of buildings through cold bridging and thermal breaks. See the adjacent article.**

Impact testing is designed to ensure that a building façade will endure a reasonable degree of impact without cracking, breaking or system failure causing a potentially dangerous situation.

Prior to controversial changes, the Centre for Window and Cladding Technology (CWCT) technical note 76 outlines standard test methods for hard and soft impact testing. In essence an “impactor” is suspended in front of the area to be tested and swung to hit it with a given energy; the energy is calculated according to the equation  $E=mgh$ , where E is the impact energy, m is the mass of the impactor, g is the acceleration and h, the height through which the impactor falls. Hard body impact testing uses a steel ball impactor of 50-62.5mm diameter and soft body impact testing uses a bag containing glass spheres. This has been the benchmark by which stone companies such as ourselves have sourced, supplied and installed stone cladding.

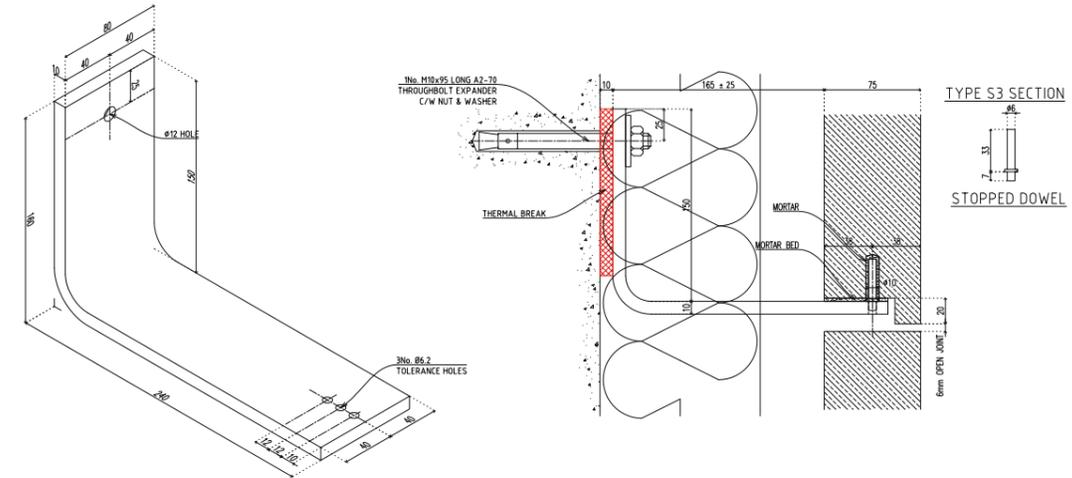
New British Standards (8298) have increased the testing mechanisms so soft impact testing is now undertaken using a tyre impactor, which is considerably harder than the previous impactor. The Stone Federation has secured funding to carry out extensive study into the relative merits of these two types to discern the merit of the new testing. The implications of these higher impact requirements have been far reaching, particularly in the widespread use and thickness of some stones that now will not pass without adaptations. This has resulted in a demand for more complex and therefore more expensive fixing systems such as those incorporating push pads. In some cases more complex backing structures are required such as steel inserts in projecting pieces to provide increased impact resistance.

Designers such as ourselves and façade engineers now need to calculate the thickness of the stone cladding based on knowledge of the expected impact load, the required safety factor, the details of the stone units and the type of stone. Further, it is necessary to consider the flexural strength of the panel and the potential failure of the fixing points. Safety is of course paramount for everyone working in the construction industry, but increasing measures need to be evaluated against existing facts, which is the intention of the Stone Federation.

And back to our earlier point, thermal breaks. The more fixing points and systems that are required to come in line with the impact testing, have a dramatically negative effect on the thermal property of buildings. So, to coin a phrase, there is the inevitable situation of being caught between a rock and a hard place! ■

# THE HOT TOPIC OF COLD BRIDGING

This page  
Diagram showing  
placement of  
thermal break



**In April 2014 Part L of Building Regulations, Conservation of Fuel and Power, was again updated, following on from the 2010 revision that emphasised the performance of the building details and the losses through linear cold bridging. These regulations enforce a significant effect on the performance of the building envelope.**

The thermal properties of cavities and new high performance insulation has still seen the expansion of cavity walls, to meet ever changing regulations, which in turn can significantly reduce the internal floor space. This is not rocket science, but what is not always understood is that by increasing the cavity, the fixing system must also increase in size (and strength) because the stone is that much further from the substructure and this in turn creates a greater cold bridge through in the insulation. Every time a fixing is incorporated to attach the façade to the substructure, the insulation is bridged and there is a resulting heat loss. When considering the size and complexity of many facades it can quickly be appreciated just how significant these cold bridges can be. Historically heat loss through fixings like this was given only minor consideration, but now more in depth analysis is being requested, and this has had a profound effect on the design of both the fixing and the design of the façade.

Given the considerations for the design of the façade and building envelope performance, it is important for our design team to be involved early in the project development. There are a number of fixing system solutions that can be incorporated or adapted to reduce the fixing points and therefore reduce the cold bridging. One is to install thermal breaks (pads) behind the individual fixings to allay the heat loss. There is quite considerable cost implications in the use of these, and the reduction of heat loss is only minor. Another alternative is to use a metal rainscreen carrier frame in front of the insulation which obviously greatly reduces how much the insulation is compromised, but this again has a serious cost element involved. Designing façade elements so they require less points of attachment while maintaining the design aesthetic is another area where our team can offer advice.

The solution to the problem is understood, but still in development. What is needed is an alternative material to produce the fixing systems that deliver the same strengths and construction qualities as metal, with much reduced thermal conductivity. However, at the moment this solution is far from imminent, so the industry remains caught again between the bureaucracy of legislations implemented before there is a clear and affordable means to address them.

There is another solution, and one that Szerelmey endorses – increase the thickness of stone so it can be used as a load bearing façade when stacked to the ground. This means only small wind restraint are required and negates the need for heavy corbels at every floor level. ■

### Cycling Events Charity Sponsorship

Evolve Community Ltd – Szerelmey once again took the opportunity to sponsor Justin Bird (QS) of the Barrie Tankel Partnership, for the Coast to Coast Cycle fund raising event – Saturday 14th and Sunday 15th June 2014

### LIDBA

Mark Chivers of Szerelmey Restoration has been involved with Liphook and District Businessmen's Association (LIDBA) for many years and this year once again sponsored LIDBA's annual Bike Ride with Mark Merrick QS in the Resto team cycling 25miles to support their primary method of fund raising. Since inception in 1974, LIDBA has raised £921K for of local charities with the hope that 2015 will see over £1million.

### The Wolseley Networking Breakfast

This year Szerelmey have introduced the Wolseley Networking breakfasts which take place on a monthly basis at the Wolseley, Piccadilly. Themes include the whole spectrum of work from our industry – from historic to modern buildings. The aim of which is for Szerelmey to explain our skills and experience and to help bring 14 like-minded people together to share knowledge, experience and opportunities. Guests to date have included clients, architects, engineers, quantity surveyors and project managers.

### Charity Golf Days

Szerelmey has sponsored several Charity Golf day fund raising events this year which have included: Lend Lease Governors Club day and Berkeley Homes at the Burhill G.C. along with Canary Wharf Contractors Charity Fund at London Club and Bognor Regis Colts day at Goodwood.

### Networking Golf

The Building Alliance Golf Society (B.A.G.S) is a construction industry networking society – members include a variety of construction and property professionals. The match play team events compete with other societies such as EPICs (Every Professional in Construction) , RICS, BCO (British Council for Offices) at regular annual fixtures which are great opportunities to both play golf, invite clients and meet new people.

### Events in the Szerelmey calendar include:

- Little Britain Sailing Challenge Cup – Charity fund raising Regatta September 4–6th
- AJ Refurb and Retrofit Award Sponsorship Evening at the Brewery September 17th
- RAC End of Summer Wine Reception October 23rd
- Natural Stone Awards 5th December

