



ARCHITECTURAL TECHNOLOGY

CIAT Awards

Celebrating
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excellence



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AT end of term exhibitions

AT magazine

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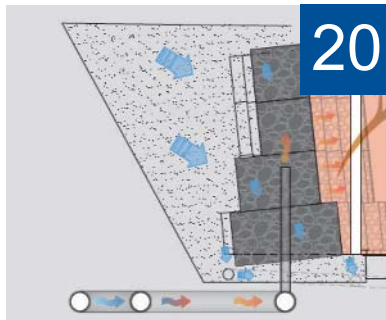
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Editor's foreword



CIAT's 50th anniversary year demonstrates that the technological 'white heat' of 1965 shows little sign of cooling

2015 is almost upon us. This will be CIAT's fiftieth anniversary year and a time to celebrate the Institute's achievements and look forward to its future.

1965 was, for many reasons, a watershed year. Great changes were occurring. Sir Winston Churchill died on 24 January and his passing symbolised for many the end of the old chivalrous elite; he had even taken part in the last cavalry charge of the British army, at Omdurman in 1898. The new world was represented by Harold Wilson's modernising Labour government which came to power late in the previous year.

Further afield, an economic revolution was occurring in the British colony of Hong Kong which was to lay the foundations for the establishment of the Institute's Hong Kong Centre in 1984. In a speech on industry, Mr Wilson

said 'the Britain that is going to be forged in the white heat of this revolution will be no place for restrictive practices or for outdated methods'.

Britain in 1965 was a country with a rapidly growing technocratic and meritocratic class born out of the technological advances of the second world war and post-war educational developments. It was felt by many that architecture was indeed 'outdated' and did not sufficiently reflect this new technical world.

Accordingly, the Society for Architectural and Associated Technicians (SAAT, now CIAT) was formed and has gone from strength to strength ever since. You can find out more about the events and celebrations planned for the anniversary year on page 38. One of the things which has helped CIAT's growth in the built environment over the years is its

2015 looks set to be a remarkable year in the history of our Institute

Awards programme, which recognises and publicises leaders in the field of Architectural Technology.

This issue includes a special supplement showcasing the Institute's suite of Awards and on page 20, the last of the 2013 Student Award projects is profiled. Student achievements are also celebrated on page 24 with a special feature on 2014's end of year shows. If you have not received your Awards supplement, please contact the Media and PR Department at Central Office.

I hope you enjoy this issue and wish all readers a Happy Christmas and New Year. 2015 looks set to be a remarkable one in the history of our Institute.

Regards
Hugh Morrison
Editor

Celebrating excellence with CIAT



The highlight of the President's Dinner Dance in Nottingham on 29 November was the announcement and presentation of the Institute's suite of Awards celebrating excellence in Architectural Technology.

The Award for Excellence in Architectural Technology was won by P+HS Architects for the Endeavour Unit, James Cook University.

The Alan King Award, for projects valued at £750k or under, was won by Scott Kyson MCIAT for 49 Scrutton Street, London.

The full report on the Awards is included with this issue for all members. If you normally receive AT but the brochure was not included, please email info@ciat.org.uk or tel. +44 (0)20 7278 2206.

The report can also be viewed online at www.ciat.org.uk/en/awards

The seven pillars

With the 2016 deadline for using BIM on UK government projects fast approaching, the government has recently defined seven components of Level 2 BIM.

By Dr Sarah Birchall, Sustainability Engineer, Sustainable Construction Group.



We are now more than half way through the Government's journey to the use of Level 2 BIM on its mandated projects and their self-imposed deadline of 2016 is fast approaching.

The BIM aims were outlined in the Government Construction strategy, published in May 2011, when Level 2 BIM was defined as being a 'managed 3D environment held in separate discipline 'BIM' tools with attached data'. Since then there has been a steady flow of material and guidance adding 'flesh to the bones'.

In February 2013, a number of documents were published to assist industry in becoming BIM literate. The topics covered ranged from the information management process itself to best practice guidance around professional indemnity insurance, and made a significant contribution to the general understanding of how to work in a BIM environment.

As a consequence of ongoing development of the processes and tools available, and feedback from early adopter projects and other industry experience, the Government has recently refined its definition of Level 2 BIM as having the following seven components:

1. PAS 1192-2:2013
2. PAS 1192-3: 2014
3. BS 1192-4 (due for publication in summer 2014)
4. Building Information Model (BIM) Protocol
5. Government Soft Landings (GSL)
6. Digital Plan of Work
7. Classification

The first five are either already available, or are due to be published shortly. The preparation of the last two are the subject of a Technology Strategy Board-funded competition, due for completion in March 2015, and these are seen as the last major building blocks needed to enable the adoption and practice of full Level 2 BIM throughout the construction

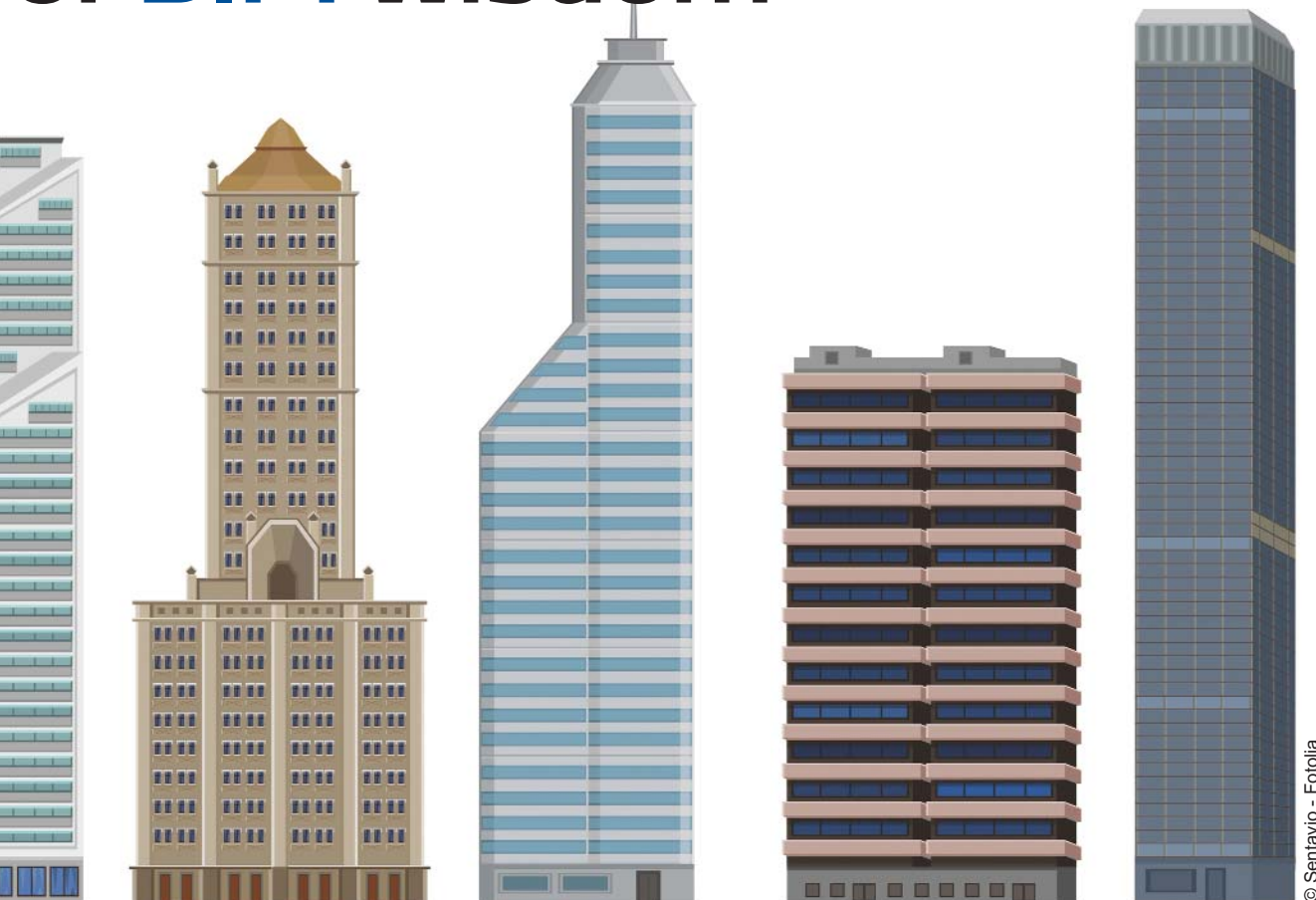
industry. The refining of the UK Government's BIM Level 2 requirement by use of these seven components is an important step forward. This gives the clarity the industry has been asking for and, once the final two components are available, will enable it to develop a robust and effective response. March 2015 is going to be a very interesting time.

The seven pillars

1. PAS 1192-2:2013 builds on the processes described in BS 1192:2007, and introduces new concepts such as employer's information requirements (EIR) – the employer's expression of what information they require from the project and the format it should be in, and BIM execution plans (BEP) – the supply chain's response to the EIR showing how it will meet its requirements.

2. PAS 1192-3:2014 takes the processes described in earlier 1192 publications and develops them for use in the operational life of assets. In turn,

of BIM wisdom



this leads to the use of new concepts such as organisational information requirements (OIR) – the information which the organisation needs to know in order to run the business, the asset information requirements (AIR) – the information the organisation needs about the asset it is responsible for, and the asset information model (AIM) – the information or data set which describes the asset.

This is an important document for the FM industry as it sets out the need for comprehensive and accurate information, the AIM, which can be used as the basis for all asset-related decision making. However, it also requires that the AIM is kept up-to-date

Soft Landings is a form of graduated handover for new and refurbished buildings

to accurately reflect the status of the asset.

3. BS 1192-4 will define expectations for the exchange of information throughout the lifecycle of an asset, and will include requirements for reviewing and checking for compliance, continuity and completeness. COBie is the UK Government's chosen information exchange schema for federated BIM Level 2, alongside graphical BIM models and PDF documents.

4. The BIM Protocol was published by the CIC in February 2013 and identifies building information models that are required to be produced by the project team and puts in place specific obligations, liabilities and associated limitations on the use of those models. The protocol can also be used by clients to require the adoption of particular ways of working – such as the adoption of a common naming standard.

5. Soft Landings is a form of graduated handover for new and refurbished buildings, where the project team is

'Start at the end to inform the start' is a phrase which gets spoken a lot

contracted to watch over the building, support the occupant and to fine-tune the building's systems, for up to three years post-completion. The link with a Soft Landings process – or GSL in the case of the Government – may initially seem a tenuous one, but the data gathered during the operational phase of an asset can be very important in helping to shape project needs through effective EIRs.

It is vital that the way the asset is used and maintained is considered during the briefing and design process – 'start at the end to inform the start' is a phrase that gets spoken a lot in (*cont'd overleaf*)

construction these days and is a very apt one in this context. Although the GSL process generally follows the Soft Landings methodology described by the Usable Buildings Trust (UBT) and BSRIA, the emphasis is different in two ways – the use of metrics to demonstrate compliance with the stated project outcomes, and the dominance of the facilities manager in the process.

6 and 7. Digital Plan of Work and Classification are seen as the two missing pieces of the BIM Level 2 jigsaw, and are the subject of a Technology Strategy Board-funded research project due to deliver in March 2015. The Functional Specification – a digital tool for building information modelling for the project from the BIM Task Group defined the two elements as follows:

The Digital Plan of Work – an industry standard method of describing geometric, requirements and data deliveries at key stages of the project cycle.

Classification – a structured and standardised information classification system.

A Digital Plan of Work (dPoW).

The dPoW should define the deliverables required at each stage of the design, construction, maintenance and operation of built assets. The dPoW should be made available digitally to enable simple access to all stakeholders to make use of the system to give clear definition as to what geometry, data and other information should be delivered at each of the eight stages of a project (APM 0-7).

A classification system

A standardised classification system should be developed to ensure that data is able to be indexed and structured to make it easily accessible in a common format. The classification system should be digitally-enabled, so that it integrates with the Digital Plan of Work. This should include digital capabilities including extensive search and analytics to assist classification and to identify Digital Plan of Work activities and deliverables as well as more traditional functions such as taking off, costing and benchmarking.

*First published in Delta magazine, September 2014. (www.bsria.co.uk)
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Flat pack flats: could

A team of Cambridge researchers are making the case for flexible buildings that can be easily reused and recycled. UK INDEMAND's Julian Allwood and Danielle Densley Tingley explain the benefits.

Supermarkets in the UK are typically refurbished after 10 years and replaced after 20. The replacement is generally opened on a different site to allow a change of size, and the old store demolished. What if, instead, we built supermarkets out of a prefabricated kit of parts that could be quickly constructed, would be flexible in use and could be dismantled and reused after 20 years?

Researchers at the University of Cambridge spent a year working with a large supermarket chain on this and found that the biggest challenge was developing a reusable floor slab that remained perfectly flat. The proposed prefabricated floor plank system increased overall costs by 16% compared to a conventional store, and the board decided not to pursue the proposal. However, the faster construction time and flexibility of the system were seen as important commercial benefits.

The UK INDEMAND Centre team at Cambridge are now working with temporary construction specialist ES Global to explore how a foundationless, deconstructable steel-framed building system could be adapted to suit the requirements of supermarket construction as well as schools and other commercial buildings. This ideal of flexible, deconstructable buildings could be extended across many other segments of the building stock. It would require some changes in design with existing building components, particularly related to the floor slab or foundations, and could be achieved if adaptability and deconstructability were incorporated into project briefs and embedded at an early design stage. The result would be buildings with longer lives and far greater material reuse than is currently possible. The benefits include a significant reduction in embodied emissions,

reduced waste, increased adaptability and faster construction times. This shift to reconfigurable design would place greater value on the materials within the UK's building stocks. Around 54% of steel and almost all cement – accounting for 32.5% of global industrial emissions – is used in the built environment, so reducing demand for new production of these energy intensive materials could contribute significantly to emissions reduction targets.

Previous research at Cambridge has demonstrated that the mass of structural steel in multi-storey construction could be reduced by almost 50% and still meet the Eurocode safety standards: design

The mass of structural steel in multi-storey construction could be reduced by almost 50%

contracts are currently placed separately from material purchasing, so designers are motivated to complete a safe design rapidly rather than to create an efficient design that meets the Eurocodes without exceeding them. In addition, if buildings were designed with future users in mind, incorporating flexibility and adaptability into their designs to allow subsequent alteration and upgrade, their useful life could be increased from the current average of 40 years to 100 years.

When these two measures are combined for commercial buildings we could reduce embodied emissions by 80%, meeting the target from the 2008 Climate Change Act with no technology innovation or loss of value to users. Design for adaptability is based on a series of principles, including:

reusable structures be more sustainable?

- Designing in layers, so that the structure, services and facade are separate and the individual layers can be changed or upgraded without damage to the other layers.

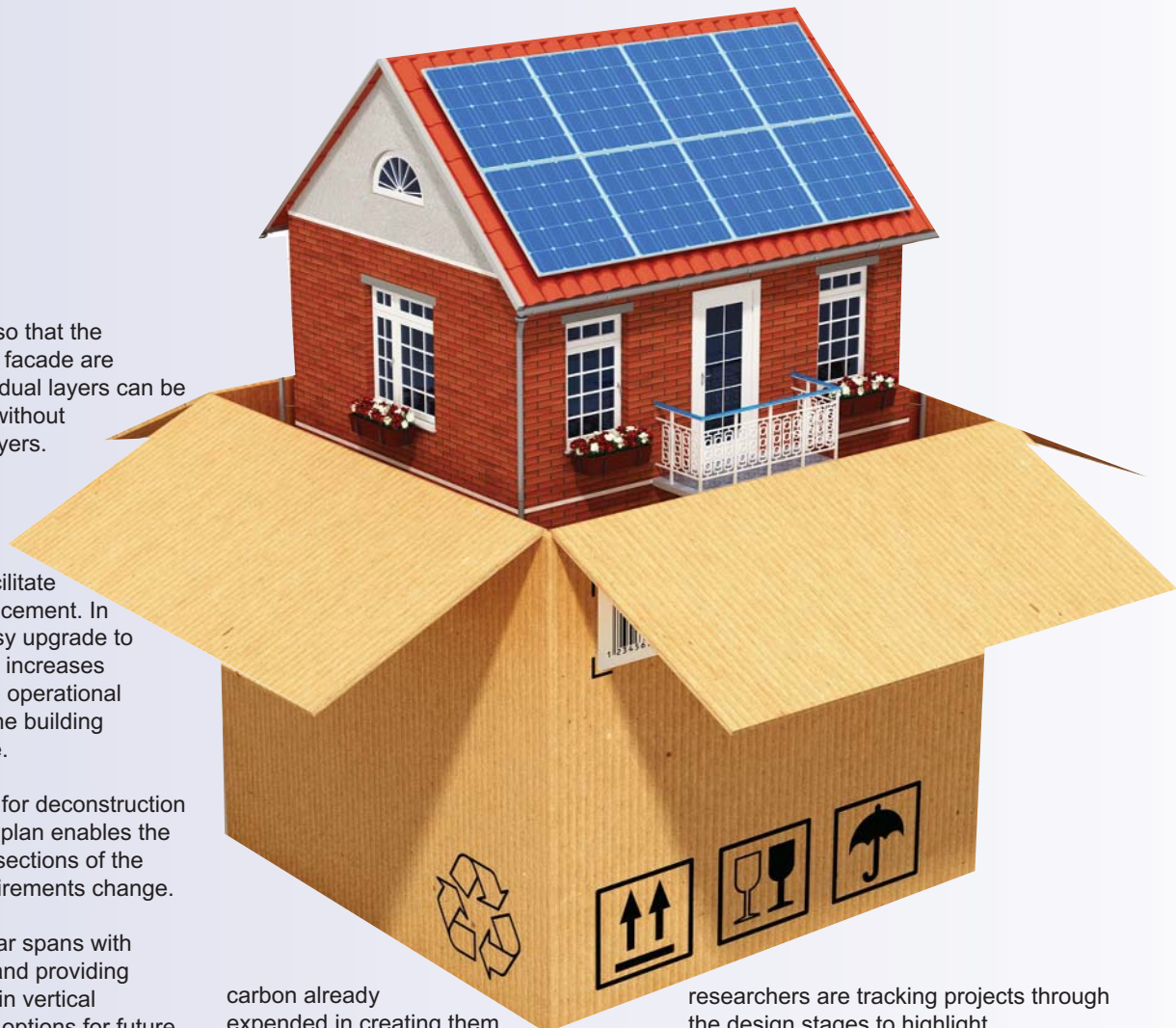
- Ensuring that components with the shortest lifespan are easily accessible to facilitate maintenance and replacement. In particular, ensuring easy upgrade to services and insulation increases opportunities to reduce operational carbon emissions for the building throughout a longer life.

- Incorporating design for deconstruction into the whole building plan enables the addition or removal of sections of the building as space requirements change.

- Designing longer clear spans with larger ceiling heights, and providing some excess capacity in vertical columns increases the options for future reconfiguration, changes of use and the addition of future services, even though this may incur a small increase in initial material requirements. The strategies of design for adaptability are largely parallel to those when designing for deconstruction.

This has an additional benefit of being a built-in fail safe: if the building is no longer required then it can be deconstructed and either moved to a new suitable location, or the individual components reused within new construction. This thus preserves the value of the materials and the embodied

This preserves the value of the materials and the embodied carbon already expended



carbon already expended in creating them. Steel frame fabricator Portal Power, a business operating in Suffolk, has for 30 years provided this service for single storey portal frame buildings, and is a growing business.

The UK INDEMAND Centre is now collaborating with the Alliance for Sustainable Building Products' RE-Fab project team to build on this experience and develop a framework that quantifies the deconstruction and reuse potential of new buildings with a wider range of forms. This goes hand in hand with demonstrating the business case for deconstructable buildings. The more buildings designed in this manner then the more successful the strategy is shown to be, creating a larger pool of future reusable materials. To be most effective, these strategies must be applied at an early design stage and will be successful with a coordinated approach from the design team. Our

researchers are tracking projects through the design stages to highlight opportunities, gain a better understanding of current barriers and estimate the impact on building costs.

Dr Julian Allwood is director of UK INDEMAND. The UK INDEMAND Centre, announced in November 2012 in the UK Government's 'Energy Efficiency Strategy', is one of six national research centres on End Use Energy Demand reduction. Dr Danielle Densley Tingley leads the construction team for the Cambridge centre. If you're interested in working with them to develop pioneering case studies, please email dod21@cam.ac.uk

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Cyber THREAT

Building management systems and cloud-based BIM are making the construction industry increasingly reliant on the internet – and leaving it highly vulnerable to cyber threats. Andrew Brister reports.

Is your company secure against cyber attack? Ebay thought it was, until the personal information of 145 million customers was hacked using employee logins; meanwhile, an attack on US retailer Target compromised the credit card details of 40 million customers.

And it's not just a risk for consumer-facing businesses. In May, the US government brought criminal charges against five Chinese army officers it said were responsible for spying on a group of US corporates, including – alarmingly – nuclear reactor specialist Westinghouse Electric.

Cyber crime for monetary gain is a growth industry. More than 80% of large organisations with over 250 staff experienced a security breach in the past year, according to a 2014 UK government survey. The average cost of the worst attack was put at between £600,000 and £1.5m: the cost of customer data theft, theft by employees, and extortion using 'distributed denial of service' attacks. In other findings, 24% had detected attempts by outsiders to penetrate their networks and 16% had been the victim of intellectual property theft in the past year.

Then there are other categories of cyber threat not covered in the government survey: cyber pranksters that view hacking as a form of entertainment, or cyber terrorists that aim to cause physical damage of some kind.

Construction, of course, is not immune. As the industry increasingly relies on the internet to go about its business – using internet-connected building control systems and, of course, cloud-based BIM – the risks start to escalate.

'The construction sector is not a massive target yet, but don't think that you won't be,' says Hugh Boyes, cyber security lead at the Institution of Engineering and Technology (IET). 'Banks and online stores have been on the receiving end of this for a number of years but, thus far, building systems have got off fairly lightly. That's largely because they haven't been connected to the internet; the industry is now changing that.'

Boyes is putting the final touches to the IET's Code of Practice for Cyber Security in the Built Environment, which will be published this November. The document builds on last year's technical briefing on the subject, Resilience and Cyber Security of Technology in the Built Environment, which clearly got people talking.

'Following publication of the briefing, I got asked to a meeting with the head of a well-known UK construction engineering consultancy, who was stunned when I explained how serious the problem could be,' Boyes reveals. 'It's not scaremongering; it's just making people aware of the issues.'



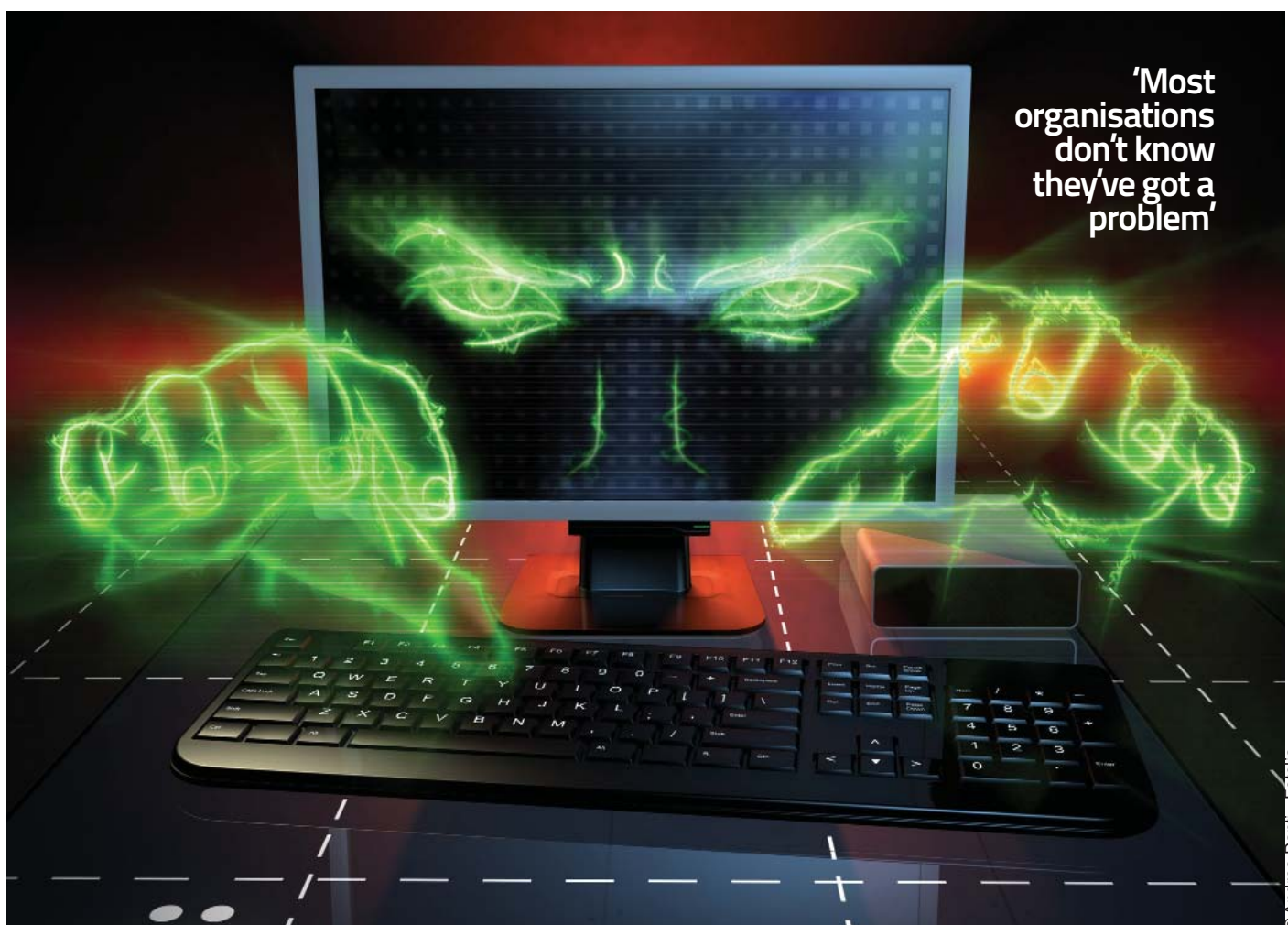
You could hack a jail remotely and lock the prison warders in the canteen

Out of control

Boyes highlights the energy monitoring of buildings, where a facilities company may have remote web access to a client's building management system, as an area vulnerable to malicious hacking. 'This will be via a box connected to the internet. The more of this that goes on, the more the hackers and tinkerers will look at it and realise that they can do things.'

The attacks on US retail chain Target are said to have originated in the firm's building control systems, and in Australia two security researchers managed to hack into the internet-connected BMS in Google's Sydney office, although Google said they only gained access to the heating and air-conditioning controls. Google's system was based on Tridium, a software platform widely used in the industry.

A digital security consultant with knowledge of the sector also warns of building management systems' vulnerability to hackers with criminal or terrorist intent. 'GCHQ and the Metropolitan Police have data on servers in secure buildings. But they have humble controllers running the air-conditioning systems – could they be hacked? Modern prisons will be increasingly controlled by electronic locking, with swipe card identification. You could hack a jail remotely and lock the prison warders in the canteen.'



'Most organisations don't know they've got a problem'

© Andrea Danti - Fotolia

The antidote to cyber attacks is of course cyber security, a broad subject that addresses a wide range of factors. These include the technology itself, technical solutions such as firewalls, encryption, security 'patches' and antivirus software, and then staff, process and governance issues. The new code is therefore designed to guide the industry through these issues, putting information into a construction industry context by giving case studies.

As Boyes explains: 'The IET Code of Practice lays out a framework for the built environment sector to follow and takes a risk-based approach. You need to think about what kind of organisation you are, what you do, look at your vulnerabilities, your threats, take a very close look at your building's infrastructure and systems and have a think about what could go wrong and its impact on you.'

Sensitive matters

So what will the impact of BIM be? It could be argued that the vulnerability to being hacked is already there, and

doesn't change with BIM: in other words, most of the data generated in Level 2 projects would have existed in digital form anyway, and the 'model' is just the sum of pre-existing parts. Nevertheless, as BIM takes hold and Level 3 becomes a reality, the sheer volume of sensitive data being shared collaboratively surely compounds the risk of cyber attacks.

As BIM takes hold, the sheer volume of data being shared compounds the risk

The report on the digital future of the built environment from the Construction Industry Council's BIM2050 group drew attention to cyber security in the first point of its executive summary.

David Philp FCIOB, chair of BIM2050, head of BIM at Mace Group and head of BIM implementation at the Cabinet Office, says 'Digitally connected

infrastructure and business systems are vulnerable to electronic terrorism and sabotage. Just because your information is secure now, does not mean it will be secure in the near future. Most organisations, other than the very big ones, don't know they've got a problem, and very few probably understand it. 'As we move from Level 2 collaborative BIM towards Level 3 and fully integrated assets – and not just individual buildings, but whole portfolios and smart cities – then the big thing that we have to sort out is the whole issue of cyber security,' he argues.

In its recommendations, the BIM2050 report calls for organisations to 'review their data residency, integrity strategies and agreements to proactively defend our digital and physical assets from cyber attacks'. But the report also admits that current security measures to 'throttle' access to data 'creates inefficiencies and inhibits collaborative working'.

Philp argues that one way through the conundrum is to encourage the academic community to research data

encryption and security access techniques in the context of BIM and the built environment, especially on operational data sets. 'OpenSSL cryptography and cryptography in general needs to be developed further to secure internet-enabled infrastructure,' he says.

Hugh Boyes also authored the IET's *BIM: Addressing the Cyber Security Issues* document, published earlier this year, which highlights the ease with which BIM data can be compromised. 'As you become more reliant on the digital exchanges of data, you also become more vulnerable to that data being disrupted or misused,' he says. 'It might be accidental; it might just be a phishing attack on a bit of malware that comes in on an email that looks like it's from someone involved in the project. That might be enough to take you down.' Boyes believes that if you apply good practice, you can reduce the risk dramatically.

'It's not about spending huge amounts of money; it's more about putting in place the right measures: up-to-date patching of systems, up-to-date anti-malware and not mixing social and business use on your machine. There is a much greater risk of picking up something undesirable when using your PC for non-work purposes.' Boyes points to government guidance such as *Cyber Essentials* for the smallest firms and *10 Steps to Cyber Security for Larger Employers*.

Jozef Dobos, a computer scientist at University College London, advises: 'You have to use SSL encryption keys and certificates when transferring data from a server to a client. Data hops from server to server until it gets to the client. It can easily be intercepted if it is not encrypted.' Dobos has become familiar with the construction industry through developing 3D Repo, an app that enables the user to view, share and annotate 3D building models. He is worried by the lack of awareness of data security issues among the construction fraternity.



This view is borne out by the findings of a survey by University of Bolton undergraduate Kris Gunshon examining the potential security risks of BIM Dr Fred Sherratt MCI0B, now senior lecturer in construction management at Anglia Ruskin University, oversaw Gunshon's work. 'The basic answer to a lot of our questions was: "I don't know". We are so narrow in our thinking in construction, so insular and isolated,

and we need to be more aware of what could potentially happen.' Sherratt, Boyes and Dobos all paint a worrying picture of what could happen. 'BIM can lead to access to, or theft of, data for all the wrong reasons,' says Boyes. 'Gaining access to a BIM model is an absolute gift. It's easy to imagine criminals overriding the security system in a building containing something of value, for example.' Terrorism is another grisly possibility.

Boyes says: 'There are a lot of people in the construction chain that could be holding large parts of the building model, if not the whole model. Our concern is that could become easy to get hold of if someone lost their device, say, and it wasn't protected.'

'I do worry that we are creating a whole virtual world of something that is there in the physical,' says Sherratt. 'When I was involved in the construction of police stations in Manchester, our drawings were tightly controlled. Now they'd be held in a 3D model. There's a great potential here for either mischief from teenage boys in their bedrooms or more serious things. I think that before we just carry on down the BIM route regardless, we need to stop and think about what vulnerabilities we are opening up.'

That's not to say that security issues are not on the radar of the policy makers. Work is said to be underway on a draft of an additional document to the BIM

Is BIM a security threat to the built environment?

Kris Gunshon and Fred Sherratt of the University of Bolton describe a survey they undertook on the potential security risks of BIM.

BIM brings together the design, construction and management systems of a project in one easily accessible format. This means that information about the access system of a public building, for example, is no longer held on an array of indecipherable power, CCTV and alarm schematics. In a BIM, all that information is just a click away. So, as we design for the operability of projects, BIM has changed a security camera from an icon on a drawing, with associated specifications, to a one-click download providing product, make and

model, as well as internal and external wiring layouts. Although this is helpful for those installing and using the cameras, it is also highly convenient for those seeking to enter a building without showing up on them.

The second issue is one of access. BIM projects are held in the cloud or on multi-access servers that are vulnerable to hackers in a way that the drawing racks in a site office never were. Paul Marks, writing in *New Scientist*, recently reported on the rise of the smart home, where domestic systems are interconnected and linked to the web for the homeowner's ease of use. He also warns of the potential for 'malware that activates everyone's heating systems at once, which could overload the grid and cause

blackouts'. But accessing buildings through remote FM systems could cause similar problems on a larger scale. We carried out a survey of 32 construction professionals: most were practitioners based in the UK. We sought responses to questions about the content of a BIM, and the extent to which it was possible to gain access to them. The aim was to explore the perceptions of industry professionals — 62% of whom were working with information models on a regular basis.

With regard to the data contained within the BIM model itself, 41% of respondents agreed that it could be used by criminals against the building. A further 31% were neutral in their response, whereas 28% felt this was not a concern. In a related

standard PAS 1192, which will address the cyber security aspects of BIM.

Career opportunities

The increasing awareness of cyber security is pushing the worlds of construction and IT consultancy ever closer. 'One of the positive things that will come out of this is for careers in the built environment,' says Philp. 'Issues like this are starting to open up more and more new roles for young people coming into the industry, and cyber security will become a key job role in the world of construction in the future.'

Indeed, major building engineering consultancies such as Arup, Grontmij and Cundall all employ IT specialists with cyber security expertise to work alongside their building designers. So perhaps it's not all doom and gloom. BIM may be leading the industry into the path of an ever-wider range of cyber threats, but will also usher in the development of career options straddling construction project management and digital security. For the construction manager of tomorrow, cyber security will be one more item to add to the pre-contract risk assessment and BIM implementation plan, but also one more area where the industry can develop its expertise.

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Building your defences: 4 tools to boost cyber security

1. Cyber Essentials

This is a government-backed scheme to help organisations protect themselves against common cyber attacks and offers a set of basic technical controls. It was launched in June 2014 and offers companies one of two new Cyber Essentials badges. It is backed by the Federation of Small Businesses, the CBI and a number of insurers. From 1 October 2014, government has required all suppliers bidding for certain sensitive and personal information-handling contracts to be certified under Cyber Essentials.

2. 10 Steps to Cyber Security

A publication produced jointly by the Government Communications Headquarters, the Department for Business, Innovation & Skills and Centre for the Protection of National Infrastructure. It discusses cyber security as one of the biggest challenges for business and the UK economy. It also offers guidance for businesses on how to make the UK's networks more resilient and protect key information assets against cyber threats.

3. Resilience and Cyber Security of Technology in the Built Environment

This technical briefing from the Institution of Engineering and Technology examines the different sources of threats across the building lifecycle, from initial concept through to decommissioning. The briefing describes the 20 critical controls (developed by US information security consultant SANS Institute) that address threats to intellectual property and commercial data, and to the design and operation of building systems. The IET's more detailed 128-page Code of Practice on the topic is due in November.

4. Building Information Modelling (BIM): Addressing the Cyber Security Issues

The IET looks at the risks that are inherent in the adoption of the BIM model, in particular the need to address cyber security in the implementation of collaborative processes and systems.

question, 66% of respondents disagreed with the statement that 'BIM models would be of no use to criminal organisations'; again 31% were neutral and only 3% felt that this was not a concern.

So the majority of professionals did feel there were illegal uses for BIM, although the large proportion of neutral responses suggest that respondents may not be sure precisely how the BIM data could be used for criminal means. Although 41% agreed that 'current methods of sharing BIM files are secure enough', 47% were neutral on the subject. When we asked whether 'current methods of allowing access to BIM files are secure enough' agreement fell to 31%, compared with 53% who were neutral in their response and only 16% who disagreed.

On the question that hacking poses a threat to BIM's security', 47% of

respondents agreed, 31% remained neutral and 22% disagreed. This was supported by finding that 47% felt 'access to BIMs should be more restricted' where only 6% disagreed.

The knowledge does not exist within the industry to make informed decisions

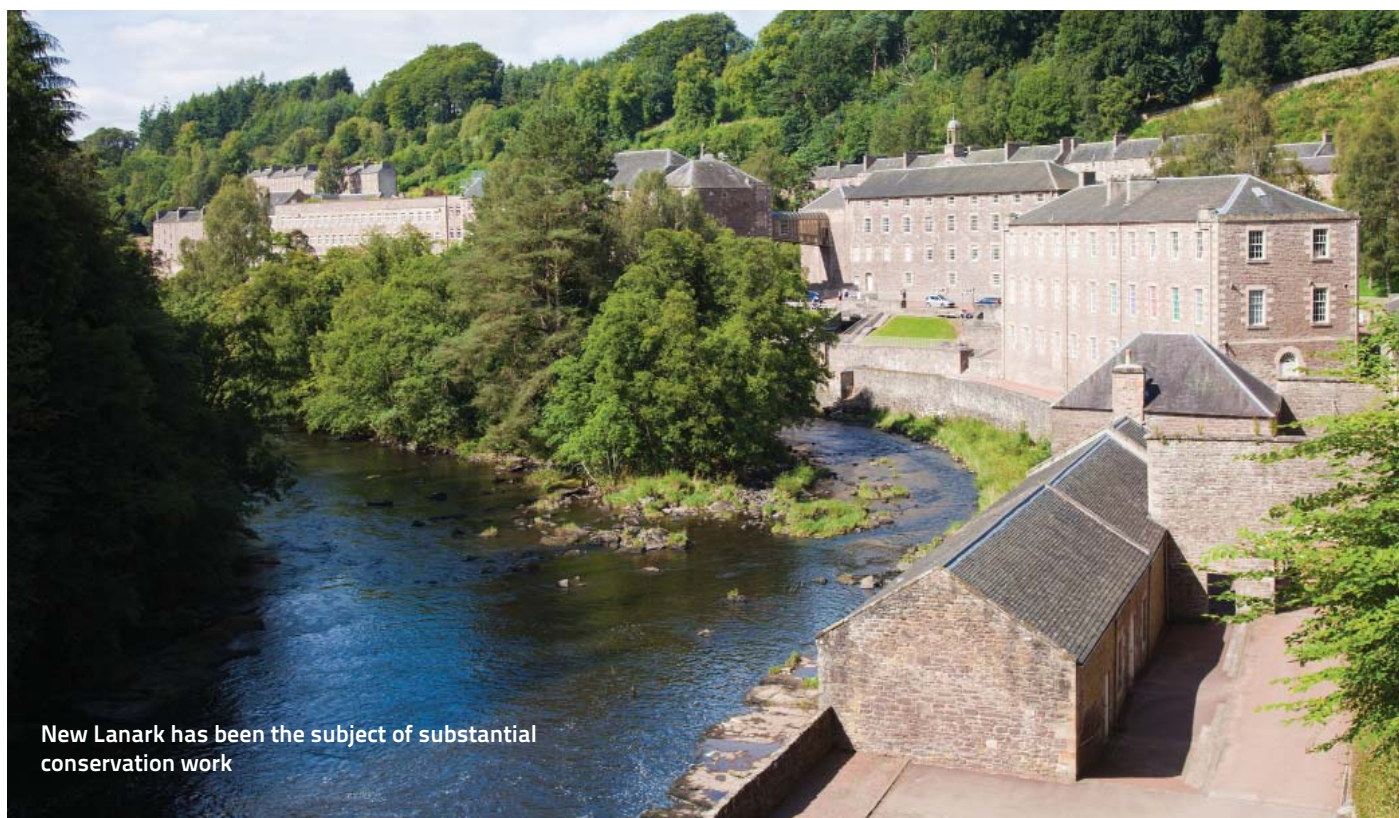
In terms of more specific access methods, 34% felt 'storing BIM on cloud-based networks is the safest option', 60% remained neutral. The large proportions of neutral responses within the survey suggest that the knowledge does not exist within the construction industry to make informed decisions in this area. This is unsurprising, perhaps, as the

sample was of construction professionals rather than IT experts.

Yet 70% of the respondents agreed that 'people need to take BIM's security more seriously', with only 4% disagreeing. Although this was the final question in the survey, and ideas of hacking had been raised by the preceding questions, this could also suggest that respondents were considering their own lack of knowledge about BIM security. As BIM grows, it would seem the industry needs IT specialists to support the way it is developed and implemented if it is to ensure the security of the built environment. As more prominent projects such as prisons, banks, nuclear power stations and landmark public buildings proudly proclaim that they are making full use of BIM, we need to ensure that we are not creating a virtual built environment that is increasingly exposed to forces outside our control.

Understanding conservation

What exactly is building conservation? There is potential for building conservation to be misunderstood, misinterpreted and, often, misdirected. Barry Bridgewood MCIAT, Chartered Architectural Technologist, gives his opinion.



New Lanark has been the subject of substantial conservation work

Perhaps the best way to respond to the question 'what is building conservation' is to say what it may well *not* be:

It is not ossification of a building; it may not be solely preservation, although this may well be a good part of it. Some structures are so important that they will require preservation and protection; some will be more suitable for change and re-use.

It is about facilitating and promoting appropriate change, or re-use, of a building or structure where that building might otherwise be lost through demolition or inappropriate change.

Conservation might facilitate a new but appropriate use that does not damage the significance or integrity of a building or asset. The conservation architect Sir Bernard Feilden is quoted as saying: 'Conservation is largely the art of controlling change'. (Earl, J. *Building Conservation Philosophy*)

I would like to expand upon this to say: conservation is largely the art of managing appropriate change where no other option is feasible. Even ruins can be effectively and beautifully incorporated within a new structure associated with an historic asset, such as at Norwich Cathedral Hostry, [sic] including the new Refectory.

Conservation is not hamstrung by rules but is guided by research and convention and is always 'bespoke' to a particular project.

'I have found that it is not wise to lay down dogmatic rules, for when they are made one is apt to be confronted by a case where they do not work'. A. R. Powys, *Repair of Ancient Buildings*. Society for the Protection of Ancient Buildings (SPAB).

The same principles associated with conservation projects can be transferred to any work of intervention to an existing structure. It does not only include works to listed buildings or heritage structures.

It does, however, require a different approach adopting a different mind-set to conventional projects. It involves a set of skills that are defined in the International Council on Monuments and Sites (ICOMOS) Education and Training Guidelines (www.icomos-uk.org). This is the international body identified with conservation of monuments and sites. The Guidelines identify fourteen skills associated with a professional's ability to undertake works to heritage assets, monuments and buildings.

These skills have been distilled into five units of competence and defined in the freely available website(s) www.understandingconservation.org and www.understandingconservation.org.uk. It is highly recommended that readers of this article visit this website to gain a better understanding of the philosophy and practice of conservation.

Simply put the main tenets associated with conservation work might be identified as involving:

- Minimum intervention
- Minimum loss of authenticity
- Minimum loss of fabric
- Reversibility
- Absence of deception ('honesty' of new work such that it may be identified from authentic/original fabric by expert scrutiny).

The primary difference when working on conservation projects involves gaining a clear understanding of a building, why it is important and how it might be changed or altered to suit a modern re-use of it. The intervention process is very much 'front-loaded' with information about the asset, its importance, social status, history, methods of construction and its use of materials.

One of the terms used in conservation and very often misunderstood is 'cultural significance'. So what is 'significance'? (See Unit 1.0 of www.understandingconservation.org) It may be a complex package of things that make the building important to society.

Even ruins can be effectively and beautifully incorporated within a new structure



Top: Designed by Sir Michael Hopkins, completed in 2004, this building, part of Norwich Cathedral, on the site of an earlier medieval pilgrims' guest hall, provides a sympathetically constructed refectory and visitors' centre, within and around important historic fabric. The new use, appropriately, recalls a former use of the site.

Below: Redundant agricultural buildings being converted to holiday accommodation in Norfolk: not a conservation project but demonstrating that redundant buildings can, whilst adopting good conservation practice, enjoy an alternative use.

This might involve some or all of the following factors:

- Its social importance to the society it serves
- Its aesthetic or architectural importance. (See unit 2 of [understandingconservation.org](http://www.understandingconservation.org))
- Its history*
- Its scientific values
- Its spiritual values
- Its emotional value

All of the above criteria are based on respect for the past and for the benefit of present and future generations. Prior to any work of intervention it is necessary to establish clarity of understanding of how the building was constructed, what materials were used and how these interact within the structure. This process is required if we are to understand how the building was made and how any work that might be undertaken and any materials used will affect it without damage to its significance or integrity. (For more detailed definitions and advice see www.understandingconservation.org unit 3)

The re-use of buildings is a sustainable response to our requirement to limit the loss of valuable resources.

Cultural significance

The concept of cultural significance underpins the whole philosophy of architectural conservation. Historic buildings and sites are part of our cultural heritage and require special attention and treatment.

The determination of cultural significance ... is the first and most crucial step in every successful conservation project. The success of every conservation project depends upon understanding a site's cultural significance.

It is the common thread that that holds all aspects of the project together and forms the aim of any investigation undertaken.

Stirling and Bolling,
Framework Document, 2000



New Lanark Cotton Mill. This group of structures represents an important period in Scottish social history in that they are part of a complex developed by David Dale in the late 18th century as part of the social reform movement. They provided both improved working and living

conditions for his employees. The conversion provided for a visitor centre, museum and hotel accommodation as well as an educational resource. The buildings, prior to conservation work, were derelict and in danger of being demolished.

The ability to define and determine what is important about buildings is an essential skill for conservation practitioners. Understanding how a building works and what materials were used in its construction are vital to understand how it will respond to intervention work during alteration or change.

In the absence of focused knowledge a practitioner should be able to know when his/her knowledge is limited and how and where to seek specialist advice. We cannot all be experts in all fields so we must accept that we cannot know everything. The analogy might be that exemplified within the medical profession where general practitioners may refer to specialists to ensure appropriate treatment for their patients. In order to sustain our historic buildings it is imperative that we firstly investigate and research them - this in order to understand them; secondly we must investigate how they might be threatened by change and modify our approach to change in order to protect their significance.

Conservation is not about resistance to change; it is about facilitating appropriate change. It is about looking

It is a sector of construction work that offers potential rewards for both fee income and personal advancement

at how both re-use of a building and its value can co-exist without loss of its importance.

We should not automatically resist change, we should adopt an approach that keeps an open mind about the importance of the building and its ability to accommodate change or re-use. This has been a brief and simplified look at the art and science of conservation. It is a complex but not necessarily a complicated process. We do need to understand that it is a skill that will require a different approach to conventional new construction. A different mind-set! It is a sector of construction work that offers potential rewards for both fee income and personal advancement to practitioners.

My final advice would be to learn about and get involved with this sector; after all, the repair and maintenance sector of

our industry represents approximately 47% of building work. Within this sector work that might be identified as conservation might be less, but the skills necessary to operate within both sectors are transferable. We need to understand any existing building or structure before we are able to successfully intervene or work with it.

The skills of the conservationist will stand practitioners in good stead and I encourage you to look at picking up these skills, either via courses and CPD focused on conservation or by extending your knowledge by simply visiting www.understandingconservation.org and in doing so gain a better understanding of the philosophy and practice of conservation. Simple reading of the website can, of course, count towards your CIAT CPD requirements.

CIAT operates an Accreditation scheme that will permit you to act as lead professional within the grant-aided sector offered by English Heritage, Historic Scotland and the Heritage Lottery Fund. This is once you are able to demonstrate the required competencies and skills based on conservation work and understanding.

In most situations involving heritage buildings, the first objective must always be to find a use that is similar to its primary use. Where such an option is not available or is not sensible or financially feasible, then a sympathetic re-use should be considered: this latter especially where total loss through demolition might otherwise be the alternative.

Re-use must at all times respect the building for its intrinsic significance, its cultural and historic values

Such alternative re-use through conversion must, at all times, respect the building for its intrinsic significance, its cultural and historic values. Any works of intervention must only be undertaken following a detailed study of the building to establish what it is, why it is important and how it might be protected through change. We must constantly ask ourselves as conservation practitioners, why are we doing this? What is important to protect and how are we to achieve it without damage?

Get involved in conservation work; it could be to your benefit! I have found that working within this field is hugely rewarding and satisfying. I leave you with a favourite quotation of mine that sums up how I feel we should approach conservation:

‘...Let us always beware of the uncertainty of private judgement, remembering that what to us may be without merit may well be judged by posterity, who can view it in perspective, of considerable value.’
Osbert Lancaster, 1976.

**In conservation terms we use the word palimpsest; this is simply explained as ‘an overwritten manuscript’. Any building of historic importance may well have been subject to changes over years of its development. This readable history is important to any society in understanding its past. These changes are an important record of what has happened to the building over time. They are also a useful record of how the society that the building serves may have changed and developed – respect for all periods of development.*



Make the past your future... The CIAT Conservation Register

The CIAT Conservation Register identifies Chartered Architectural Technologists competent in the conservation of historical buildings and their surroundings. The competencies that all Members must demonstrate in order to join the Register link directly to the ICOMOS guidelines (International Council on Monuments and Sites). CIAT is a member of the Edinburgh Group, a consortium of bodies with expertise and representation within conservation, including English Heritage, Historic Scotland and professional bodies.

CIAT Accredited Conservationists are recognised by English Heritage, Historic Scotland and The Heritage Lottery Fund and others to act as lead consultants on grant-funded projects.

To join the Register and for further information please visit:
www.ciat.org.uk/en/Join_CIAT/qualifying/specialist-registers

or contact Amina Khanum, Specialist Registers' Coordinator at Central Office on 020 7278 2206 (amina@ciat.org.uk)

Smarter specification

AT issue 109 introduced digital startup SpecifiedBy and the company's innovative approach to researching and specifying building products. In this issue, 2012 Shell Live WIRE Grand Ideas winner and SpecifiedBy founder Darren Lester talked to BIM 4SME's Graham Paterson MCIAT HonMCIAT, Chartered Architectural Technologist about digital data, information management and workflows for smarter specification.

What exactly is SpecifiedBy?

SpecifiedBy is an online cloud driven service designed to help specifiers quickly and efficiently identify the most suitable products and materials to be used in any particular project by providing access to the necessary data from a single, well-structured platform.

We believe better access to information and data, combined with the right tools to manage and analyse, are necessary to make truly informed specification decisions. This includes technical data about each building product and material available in the UK, design files and interactions with manufacturers and other specifiers.

How does the process of pulling and filtering out product and specification data work?

Our first step is to gather all of the information that we can about a specific manufacturer's products. This includes basic information in the form of images, descriptions and classifications, technical documents, such as data sheets, certifications, brochures, case studies and sample specifications and design files such as BIM objects, 3D CAD models and 2D CAD details and drawings.

We place all of this information into a uniform 'product page' making it very easy to find and download exactly the information/files required. Then we work through all the data we have about each

product/material and pull out key attributes or properties based on the product type. These include physical properties (dimensions, weight, colour etc), performance properties (u-value, compressive strength etc), whole life properties (embodied carbon, recyclable content etc) and commercial characteristics, such as cost.

With this data collated and structured in a simple, standardised format, it's then possible for the specifier to easily search and filter products based on very specific criteria; compare and shortlist similar products and extract the data in useful formats to assist with decision making.

Does the process embody interaction with the specifiers?

Yes, and in fact the next ingredient in this data mix comes directly from the specifiers themselves, in terms of products that are being specified and used for particular projects. We have an in-built information management feature which allows a specifier to create a projects and folders to save and organise product data as they carry out research for that particular project.

We can then use this data, anonymously, to spot patterns in the use of particular types of products and materials in particular types of projects, which could potentially allow for us to make informed suggestions based on this data and make general trends and insights



'It's possible to easily search and filter products based on very specific criteria'

Darren Lester (above)

available as an open source for users to form their own conclusions.

Finally, specifiers have the opportunity to ask questions about any product or material on SpecifiedBy. Not only does this get passed to the manufacturer in question, we also ask other specifiers, who we know from our database may have some experience of that particular product, allowing the specifier to benefit from the first-hand experience of other professionals. We also plan to introduce a system for more general reviews and feedback.

What input do the manufacturers have into your online database?

Feedback from the industry suggests there are significant commercial advantages for manufacturers to become involved with the restructuring of data for building products. For example, it has been argued that the rigorous sorting, cataloguing and accessibility of specification data is a prerequisite step in moving towards attaining BIM Level 2 targets. In that sense, SpecifiedBy offers a bridge between more traditional and BIM compliant methods for organising and embedding specification information into workflows.

For manufacturers and specifiers alike, it is also useful to have building product data available in formats which can feed the development of datasets

necessary to support the post occupancy phase. Importantly, once specification data has been captured, structured and catalogued, it is a straightforward process to maintain and update the information as required.

How does SpecifiedBy compare with other online product libraries and databases?

I guess that SpecifiedBy, RIBA Product Selector and similar databases all share an intention to connect specifiers with product information – but how we execute that is very different. Our emphasis is on the specifiers' experience, where we focus on providing the functionality and quality of data required to search and evaluate products quickly and efficiently. For SME manufacturers, we offer packages based on a company's need and the value they wish to get from the platform.

These options include a system for managing their product information, real-time analytics, lead generation and automated reporting. More than ever

before, we are all inundated with data and SME specifiers in particular need simple, affordable yet powerful tools to search, filter, analyse and manage specification information. Our mission is to respond to that need by empowering building projects with data.

What do you mean by 'open metrics' and how could publishing your stats be helpful for specifiers?

OpenMetrics is simply a way for us to be transparent about usage of our site and at the same time try to help educate manufacturers on what metrics are actually important. We plan to share as much digital data as we can, in a way that is useful to both specifiers and product manufacturers. As the site grows, reviewing popular products and trends may be helpful to assist specifiers make informed choices.

Conclusion

Information gathering, appraisal and decision making to inform product and material specification can be time and resource hungry. Writing performance

briefs and undertaking comparative studies in developing appropriate specification data for projects may not always be realistic options, particularly for small organisations and sole practitioners.

Yet, for specifiers aspiring to hit Level 2 BIM targets, robust and wide ranging digital product information needs to be structured, current, and embedded into workflows. Will the process of drawing and filtering from large and complex data sets, assist designers and their clients to target key information required to make informed choices quickly and efficiently? Will it result in smarter decision making for 'whole life' objectives? While these remain open questions, Darren Lester and SpecifiedBy are clearly on the case.

More than ever before, we are all inundated with data

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Dial 'M' for mediation

The Small Claims Telephone Mediation Service is a way for practices to recoup money owed to them with the minimum of fuss. Paul Greenwood MCIAT explains how it works.

One of the more cost-effective ways of pursuing a claim through the courts is through the small claims court - for claims up to a maximum of £10,000. However if the case is within this limit, but is not straightforward, then a judge may order that the case is dealt with through the full county court.

Before you make your determination a word of warning is in order: if you decide to bring a claim against your client for perhaps non-payment of fees you must make sure that you have undertaken all your services in accordance with the agreed terms. A client in receipt of a claim for unpaid fees very often uses as a defence the fact that the work carried out is in some way deficient, therefore justifying the non-payment of fees. If you commence a claim through the small claims court it is highly likely you will be offered their mediation service in order to avoid the need for the case to go before the court. If the parties have an open mind, and are willing to compromise, this can prove a very effective way of resolving the dispute without the uncertainty of having the matter dealt with by a judge.

The process is very simple and could progress as follows:

An administrator from the court office would contact the claimant and invite them to indicate whether they would be willing to participate in telephone mediation. If the answer is yes then the defendant is likewise invited to indicate whether they would be willing to participate.

Whilst mediation is not compulsory, parties would be very wise to give serious consideration to utilising this mediation service in order for them to show that they have taken reasonable steps to resolve the dispute.

On the basis that the parties indicate a willingness to participate in telephone

mediation, a court administrator makes arrangements with a mediator to conduct telephone mediation at a scheduled day and time. There is no charge for this, other than the fee payable to the court for commencing the initial claim.

On the agreed date, at the agreed time, the mediator telephones the claimant first to introduce himself and explain the process. It is anticipated that the telephone mediation will be concluded within about one hour.



The mediator then telephones the defendant and likewise introduces himself and explains the process. The mediator then telephones the claimant back to listen to a brief explanation of the claim and explores whether there are any grounds for compromise. The mediator then telephones the defendant to listen to a brief explanation of the defence and similarly explores whether there are any grounds for compromise.

There then follows a series of telephone calls between the mediator and each of the parties (separately) in order to explore whether there are areas of compromise/agreement. This process continues for the allocated hour (unless there is a quick agreement). If there is no agreement within the hour (some mediators may be prepared to go a little beyond the hour if it appears an agreement might be reached) then the claim continues.

The process is remarkably simple and, providing the parties are not too entrenched, and are willing to move from their respective positions, is very effective at resolving the dispute. The outcome of the mediation could be something other than money as the mediator is not constrained by the parties' rights under the contract (which any judge would be).

If an agreement is reached, the mediator drafts an agreement to send to the parties and the parties are expected to comply with this agreement. If the agreement is not complied with, then the claim can continue.

One question the claimant may ask is why they should settle for anything less than the full amount that they are trying to claim (if that is the outcome of the agreed telephone mediation). One argument might be that even though the claimant may succeed in their claim (perhaps in full) if the matter were to proceed to court, there is no certainty that the defendant will comply with the judgement and further action may be necessary.

In these uncertain times it could be the case, after all the various steps have been taken to try to recover money from the defendant (that has been awarded by the court), that the defendant then ceases trading. In such eventuality the old adage that 'a bird in the hand is worth two in the bush' could certainly apply to the small claims telephone mediation service.

The mediator telephones the defendant to listen to a brief explanation of the defence

Summit of achievement

Stephen Bard ACIAT of Anglia Ruskin university was Commended in the 2013 Student Award (Project) for his design for a visitor centre for climbers among a secluded limestone crag near the town of Chudleigh, Devon. In this article he outlines his winning concept.

The site is located in Devon in the south west of England. It is on the outskirts of a small town called Chudleigh located between Newton Abbot and Exeter and is very close to the edge of Dartmoor National Park. Chudleigh Rocks is an existing limestone rock used as a climbing facility.

'The Rock' is a natural beauty spot and attracts rock climbers who scale the range of routes on the (limestone) crag. The building concept is an unheated space for outdoor pursuits. It will make the most of the site's natural beauty and stunning views whilst rest harmoniously into its surroundings.

'Buildability'

Very early on in the design stage it was decided that building material should be locally sourced as much as possible to reduce the embodied energy of the building.

The site is surrounded by limestone cliffs and an old limestone quarry which was last used in the 1970s to produce material for the construction of the nearby express way.

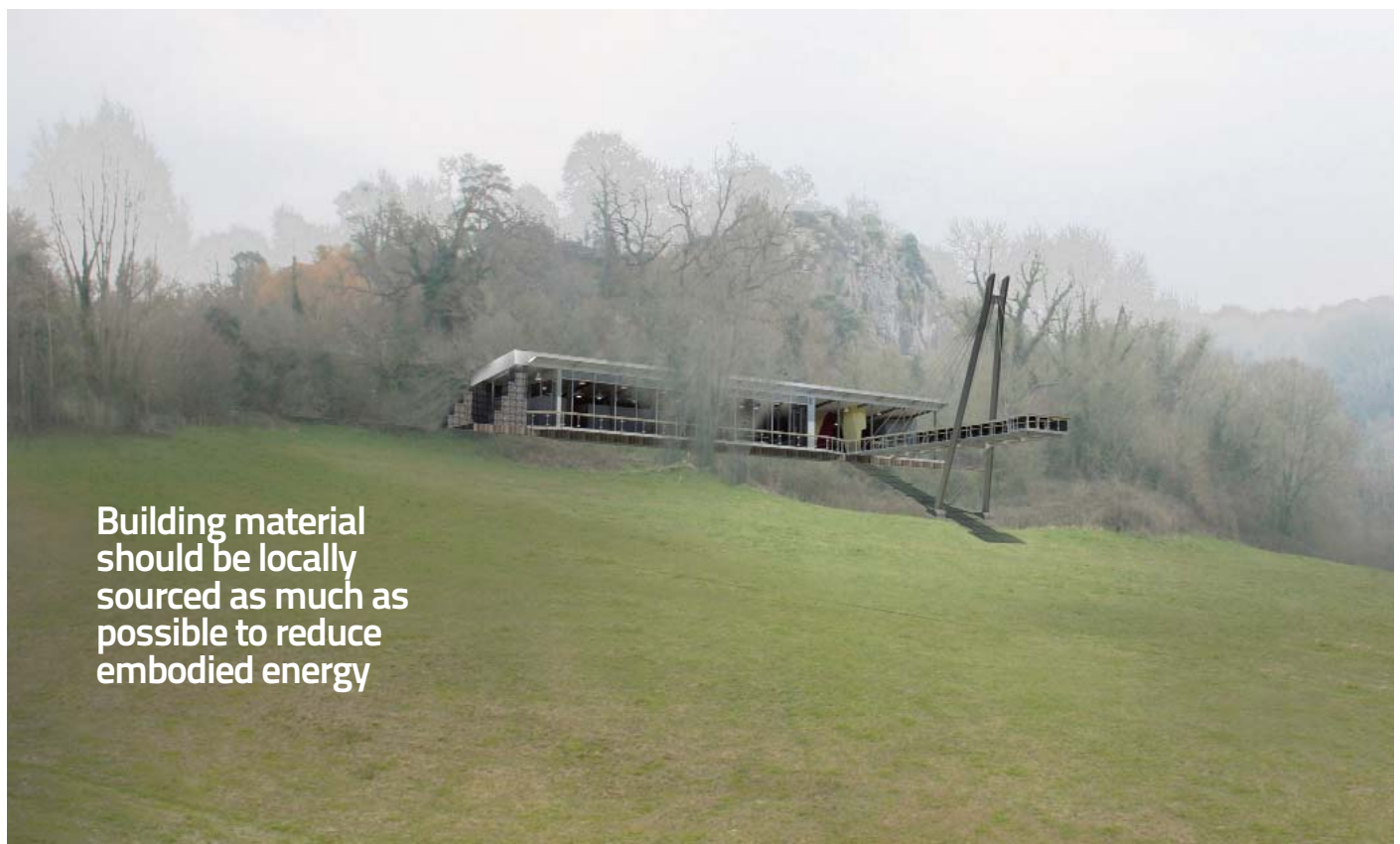
It was decided that the new building would use material excavated from the site to infill gabion boxes and use them as both retaining structure and internal

finish. The rationale behind this was to connect the user with their environment and also reduce the amount of material required for underground construction.

Steel frame

Steel frame construction was ideal for the site because of the compact nature of the building and the internal space requirements. Steel frame allowed the columns to be more slender and therefore reduce their visual impact.

Another advantage of using steel frame was the flexibility it gives to the internal space. This allows the building to be adapted later on in the building life



Building material
should be locally
sourced as much as
possible to reduce
embodied energy

which therefore increases the life span of the building.

Some initial concerns over about how the steel frame would pass Building Control as regards fire safety were overcome by keeping the building to a single storey.

This way the steel frame is only supporting the roof and therefore no additional occupied floors above the structure will need to be evacuated.

Innovation

Gabion boxes are used as both the retaining structure and internal wall finish. Gabion boxes are open pore structures that allow for free draining of the water table. The wall allows water in and as the site is located on the site of a hill no pumps will be required to drain the water. A series of land drains at the base of the wall both will be sufficient to manage the water drainage. An internal overflow drainage channel helps to communicate the buildings structural mechanics as well as serving a purpose. The wall is inclined at six degrees against the slope to resist the pressure applied by the land.

The gabion wall has a second innovative function when combined with earth tubes, to become the thermal mass for a ground-air heat exchanger.

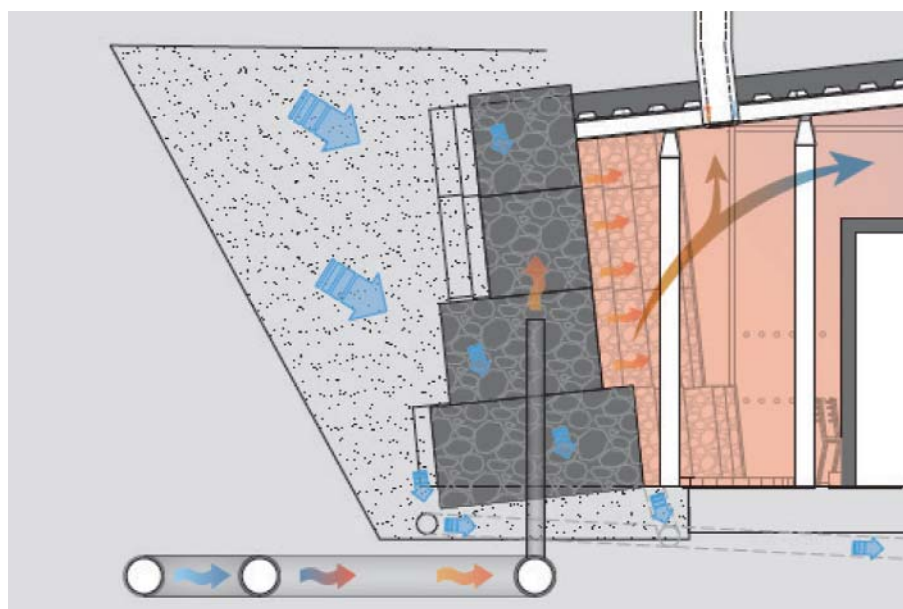
Ventilation

The building will be naturally ventilated via a series of low level louvred air intakes at the base of the glazed wall on the southern elevation. The angle of the roof will prompt the circulation of convection currents to louvred opening at the top of the glazed wall. As the building is a unheated space the requirement for a BMS (building management system) and insulated vents is not necessary. However this can be easily upgraded in the future should the building use change and require further environment control.

Ground-air heat exchanger

Although the building does not require any space heat or cooling as it has been designed to be an unheated space, the addition of a ground-air heat exchanger has been included.

As there will extensive ground works carried out on the site it is wise to future proof the building and provide the



Opposite page: impression of the centre.

Top: impression of the centre from external balcony showing solar shading.

Centre: aerial view showing the existing rock nursery, gardens and cave centre at Chudleigh, (left) with the proposed site for the climbing zone to the right.

Bottom: section showing the free draining retaining wall.

maximum adaptability for the future. With the addition of a ground-air exchanger pipes being installed before the gabion retaining wall.

The earth pipes work by utilising the stable temperatures of the earth at around 10-12°C only a few metres below the surface. Fresh air is plumbed into through an intake tower 1m above the surface. The air is then pumped around the underground pipe network where it is either heated or cooled depending on the outside air temperature.

To avoid the feel of draughts the air is injected into the gabion wall which acts as a thermal mass heat store

The heated/cooled air is then pumped into the structure to provide a regulated and constant 16°C internal air temperature. To avoid the feel of draughts the air is injected into the gabion wall which acts as a thermal mass heat store. The gabion structure is perfect for this application as the open pore structure allows the air to flow evenly around the thermal mass.

Solar shading

A large part of the southern elevation is glazed and therefore poses the problem and benefit of solar gains. During the summer months the sun's energy is very strong and can over heat buildings with large glazed areas due to solar gains. However this can be reduced with addition of solar shading. The high angle of the sun in summer means that shading above the windows will block direct sunlight.



Gabion boxes of the type specified for the project; here used for coastal landscaping.

In winter when the sun's angle is lower the shading, when placed above, will allow direct sunlight into the building. This energy will be stored in form of a thermal mass made of a high density material. In this case limestone slabs of at least 50mm thick.

Gabion wall

The boxes themselves are made from galvanised steel wire 5mm thick. Used in this way the boxes have a manufacturer's guarantee of 60 years but are expected to last a lot longer. Maccaferri woven mesh gabions, for example, are BBA Approved with a recommended design life of up to 120 years.

Green roof

The cave-like structure of the building will be blended into its surroundings and planted with local grass and plants in a semi-extensive roof system. The roof will continue the sloping pitch of hillside, at least 1:60, which will mean surface water and ground water will drain freely. To ensure that all the water does not drain away and cause the vegetation at the roof edge to dry out, an aquifer layer has been introduced.

The roof itself will hold at least 75% of precipitation which will reduce to amount drainage required. Another advantage of the green roof system is the naturally insulating properties of the earth. At points the roof will be around 2m thick and studies in Germany have indicated that on a roof 122m sq a saving of up to 75% can be made on the buildings energy demands. (*Green Roof Pocket Guide*).

Natural lighting and ventilation

Convection currents will provide ventilation for around 6m into the building from the glazed wall. For additional ventilation in areas that project beyond the 6m additional vents are required. These areas will be to the rear of the building and therefore natural lighting will also be a issue. To overcome this ventilated sunpipes are used to bring both fresh air and daylight deep into the building.

Convection currents will provide ventilation for around 6m into the building from the glazed wall

Student Awards in focus



This article is the final in this year's series of reports on the Winners, Highly Commended and Commended entries in the 2013 CIAT Student Awards.

The winners of the 2014 Awards will be profiled in AT magazine during 2015. Winning entries are also sometimes featured in CIAT's weekly Ebulletin and other publicity so it is a good way of raising your professional profile as you work towards a career in Architectural Technology.

The Awards are divided into several categories:

The Student Award for Excellence in Architectural Technology (Project)

is the premier accolade which recognises outstanding design achievement in Architectural Technology. Your submission should include illustrations, images and written specifications or other report documentation for the project and be presented in the format of two A2 boards and two A1 detailed design drawings (maximum).

The Student Award for Excellence in Architectural Technology (Report)

is the only accolade which recognises outstanding research achievement in Architectural Technology.

Your submission must be a report or academic paper based on the whole or part of a dissertation or assignment. Illustrations and images may be used to support the report. The submission must be relevant to the field of Architectural Technology or the built environment and must demonstrate Architectural Technology research expertise.

Entrants must be CIAT members, studying part time or full time on an undergraduate programme in Architectural Technology (or related subject) and must not hold any construction related professional qualification.

Student members will be informed when the 2015 Awards are open for entries.

From Yorkshire to Dubai

David Roberts ACIAT went straight from Leeds Metropolitan University to a construction project in Dubai. Here he describes how he got there.



Paul Wilhelm

Strangely enough, I was not interested in architecture until I began my BTEC Diploma in Graphic Design at Leeds Art College. We had numerous practice sessions using AutoCAD and Sketchup where I chose to model a very basic high rise building to get a feel for the software; I later added these images to my portfolio which was enough to secure me a position at Aedas Architects as a Trainee Architectural Technician.

My training involved a day release programme with which I attended Kirklees College on a two year course for one day a week. After I completed my NC in Construction Technology I was asked whether I would like to do a further two years at Kirklees College to gain my HNC, or enrol in a five year, part time course at Leeds Metropolitan University to study a degree in Architectural Technology. After reading the university prospectus I decided that this was the best route to take. The course is CIAT Accredited, therefore all of the undergraduates were encouraged to join as student members, this was the first time that the Institute was brought to my attention.

As a part time student I had the best of both worlds as I was mentored 'on the job' at Aedas as well as being tutored by industry specialists at university, I was able to use the project exposure and site experience that I had received at work and apply this to my university degree and

coursework. One of the specific areas that interested me (amongst other things) was that of BIM, mainly Autodesk Revit which I used every day at work. This gave me a head start for the BIM and 3D modelling modules at university, when it came to producing my final year Design Studio project I had gained seven years of project experience which was a big advantage.

Before my final year at university was to begin, my fiancée and I travelled to Dubai to visit relatives. During this time I explored the possibility of working in the Middle East, on the colossal projects there which I instantly wanted to be a part of. Upon returning to the UK I joined a United Arab Emirates job website, which I forgot about during the chaos of pending work and university deadlines.

It was a few months later that I was contacted by the website about an opportunity in Dubai. Four days after sending my CV and portfolio I was offered a telephone interview; two weeks and three Skype webcam interviews later I was offered the job. Less than one week after I had completed my final exam I was flown out to work for my new company, Brewer Smith and Brewer Gulf (BSBG) who have been operational in Dubai since 1976. BSBG boasts a remarkably diverse portfolio with an international team of 100 staff from approximately 13 different countries worldwide.



'Less than one week after I had completed my final exam I was flown out to work for my new company'

I am currently involved in two expansion projects for the largest mall in the world, Dubai Mall; my roles include the monitoring of design and construction documentation and ensuring that technical excellence is maintained which is in keeping with the correct design standards, local authority compliance and code compliance. I also provide Revit training and support to the architectural, structural and interior design teams, with the organisation of monthly Revit workshops for the staff to attend.

Since joining the company I have flown back to the UK for my university graduation where I received my First Class Honours degree in Architectural Technology BSc (Hons) and the CIAT 'Outstanding Achievement Award'. The experience and qualifications gained from my course has enabled me to become an Associate member of the Institute, which I plan on upgrading to MCIAT status in the very near future.

'I am currently involved in two expansion projects for the largest mall in the world, Dubai Mall'

That was the ye

This year's Architectural Technology degree shows highlighted the wealth of talented students in the UK's universities who will soon be starting their careers as professionals in the built environment.

Leeds Beckett University

This year's BSc Architectural Technology Degree Show at Leeds Beckett University (formerly known as Leeds Metropolitan University) showcased excellent projects ranging from small scale to large scale and from social housing to educational and cultural buildings. The high standard of the work was evidence of the considerable efforts of both students and tutors involved. The proposals formed part of a year-long individual project and focused on the aspects of architectural design up to the planning stage for first year students, and on the detailed design, building control and production information stages of an architectural project for second year and final year students.

First year students focused on the design of an affordable social housing scheme in Mabgate – a light industrial, inner city area of Leeds – and produced a range of small scale buildings and self-contained flats to accommodate a variety of users, while focusing on contextual issues, Building Regulations compliance, Human Factors and all the physical and psychological issues concerning the design of dwellings.

Second year students were tasked with the design of a large scale, multi storey building on North Street, in an inner city area of Leeds, to accommodate a

fictitious non-profit organisation, the Northern Arts Centre (NAC), and comprising underground car park, art gallery, dedicated library, auditorium and a number of offices and classrooms. Accessibility and inclusivity, detailing and specification, fire strategy and low energy design were the main design aspects considered.

Final year students concluded their undergraduate course with a major project, involving a good deal of research and specialist knowledge: a large scale, multi storey building in the Kirkstall Forge area, in Leeds, to accommodate a primary school for the local community, with focus mainly on production information, detailing and specification strategies.

Southampton Solent University

'Celebration of Student Success' was the theme of the 2014 Southampton Solent University's Built Environment final-year show held on 23 June.

On display was a selection of final-year project work from the BA (Hons) Architectural Technology, BA (Hons) Interior Design and BSc (Hons) Construction Management course. In addition, a student from each course was selected to present their final year research project findings and awards were



First year students focused on the design of an affordable social housing scheme

made to students with the most innovative topics and best presentation skills.

The event provided Architectural Technology students and their colleagues from the across the Built Environment provision at Southampton Solent University with a platform to display their design and technical skills; it was well attended by employers and industry representatives, including a number of South East Regional Committee members.

The event was organised in association with CIAT's South East Region, the Chartered Institute of Building (CIOB) and CAPITA, and included keynote speech by Alex Naraian MCIAT, Associate Director at ADAM Architecture and Chairman of the South East Region.

'It has been an absolute privilege to come back and see the students' work – the standard is phenomenal and it's great to see so much vision and creativity coming through', said Alex who himself is a graduate of Solent's Built Environment Course Area. Final year BA (Hons) Architectural Technology student James Benham captured the interest of attending industry professions when he presented research from his dissertation on which profession is best suited to champion innovation in traditional build construction projects. 'My findings were that clients and designers are best placed as

ar that was

Student end of year shows 2014



Above: models on display at Huddersfield University. Opposite: University of Central Lancashire show badges

innovation champions. Clients have sufficient authority and control over resources and designers have sufficient authority and technical ability. For effective innovation to take place the contractor must be empowered to innovate.'

Speaking about his course he said, 'The fact that Solent has connections with professionals in the industry gives the course a realistic grounding in the industry, and shows students what will be expected of them once they leave.'

As well as James, the following Architectural Technology students were recognised for their innovative designs and research by the South East Region: Lisa Mellors for her investigation into the design standards of lifetime homes; Nathan Mundy's study into the position of classical architecture in an evolving modern and contemporary design era; Ben Watson who examined the effectiveness of visualising post occupancy evaluation data for passivhaus. All four students received the 'CIAT South East Region Award for

undergraduate Achievement'. Graduate Nathan Mundy said, 'The end of year show gave me the opportunity to showcase my work not only to other students but to potential employers. It was a great experience and I had the pleasure of meeting a variety of people from company directors to employees who I could share my passion for architecture and Architectural Technology with'.

Architectural Technology students were recognised for their innovative designs and research

Speaking of the benefits of taking part in the show, Nathan said, 'Southampton Solent University gave me the opportunity to present at such a great event and from that I have now been employed by BrightSpace Architects,

who are a highly professional and creative practice and worked closely with us on one of our final projects. I can't stress how important the end of year show was because without that and the guidance of my course leader and lecturing staff, I couldn't see myself being in the great position I am in currently.'

Martin Dobbs, MCIAT MBEng, Director at BrightSpace Architects said, 'Over the last 18 months we have been delighted to be able to develop a great relationship with Southampton Solent University. Solent consistently produces graduates of high quality and we are pleased to say that we currently employ three former students. We are keen to ensure that over the coming years our contribution to Solent University, its students and staff continues to grow.'

Also taking part in the presentations was third year BA (Hons) Interior Design student Yolanda Craig who is going straight into a graduate job at an interior design firm in Chelsea Harbour, London. Her final project was based on exploring

the psychological effects of interior design within brand imaging, analysing consumer behaviour with reference to brand imaging and interiors.

In addition, a group of second year Interior Design students who presented a project illustrating Building Information Modelling (BIM) as a process that involves the use of an intelligent 3D model to communicate decisions, design, 3D visualisation, and collaboration.

Programme Leader, Sarah Radif, said: 'the success of the show is a demonstration of the hard work of both staff and students. I am very proud of our students and have no doubt that our graduates will enjoy a successful career as Architectural Technology professionals. In fact many of them have already been employed by architectural practices from around the region.'

John Barfoot, Academic Leader for the Built Environment programme said: 'The students work is testament to how they all approach this course which is with determination, professionalism and real passion. It's always a pleasure to work with them all and I am sure they have bright futures ahead.'



Exhibitions at Bolton

University of Bolton

Architectural Technology students at University of Bolton exhibited their Architectural Design Studio and Interdisciplinary Project works on 22 May taking part in the University of Bolton's annual Creative Degree Show. While this is generally a time to celebrate students' hard work with their friends and family and their commencement to graduation, the event was equally an opportunity to connect with industry and for students to meet potential employers. Industry guests included some of local businesses and organisations including Neil Pike Architecture, The Intelligent Design Centre and CTP Property Developers. The show was also supported by our

Regional CIAT Committee members who had contributed during the year through occasional critical assessment of students work. Students worked closely with Bolton Council staff who presented a project brief and a site with the theme 'Enrich Bolton's Evening Economy' for final year students' Interdisciplinary Project as well as a project for second year Architectural Design Studio students on a 'Transition Accommodation' which aimed to break the homelessness cycle. Bolton Mayor Colin Shaw previewed the show before our formal opening.

In 2013/14 final year students worked on redevelopment of a site within the university campus into an innovation centre for built environment studies. This site is currently under construction for University of Bolton's £10m new University Technical College which will offer a range of technical courses to 14-19 year old students.

Architectural Technology students are actively encouraged to attend the show as well as participating in both setting up and preparation for the show. While our show is still in its infancy, students managed to create a much better atmosphere in the way they presented their work. We are all excited and



James Benham (left) and Nathan Mundy (right) from Southampton Solent University with their model of the Glasshouse Studios Project – a live brief provided by BrightSpace Architects.

geared to raise the standard of students' work for the next degree show in 2015.

University of Central Lancashire

The trend for making a bigger impact year on year of the Architectural Technology Degree Show at the University of Central Lancashire continued this year. The evening and the show was seen by all as a huge success and this was due to two factors – firstly the work the students had prepared was of exceptional quality and covered a range of subject areas for example how to deal with blue-green algae in Preston Docks, to using design and technology to ensure acoustic separation within buildings on a difficult site close to the main west coast railway line.

The students had embraced a range of techniques to ensure the guests understood their schemes. There were traditional paper-based presentations which showed the more conventional drawings, but highlighted the range of skills that the students have developed over the course of their studies. Large scale physical models focused on details and key junctions and a variety of other technologies were used and included, QR tags to direct visitors to students' own websites, iPads to showcase students' use of 3D modelling software and animations to explain construction sequence.

The work had begun months prior to the private view in June. The students had set up a working group and had regular weekly meetings. They approached a number of local businesses for sponsorship including local joinery firm Graham Ball to make up their display boards, B&Q to supply materials and local architecture firms to cover catering costs. They got quotes for their prints, set deadlines, organised teams, set tasks with clear aims and objectives.

Large scale physical models focused on details and key junctions

They planned and arranged the space to ensure there was a clear route through the show. An entrance area, that acted as an 'introduction' the students, their work and a key to where it could be found. The space had been 'choreographed' to ensure that all students were given spaces that best meet their criteria and an area at the end to sit, chat and have a drink. They truly used all the skills they had been taught over the last three years to deliver a project that was on time and on budget and hugely successful. It also met its original objectives to showcase the work of the BSc (Hons) Architectural Technology Programme at UCLan,



Nathan Mundy of Southampton Solent University receiving the CIAT South East Region Award for Undergraduate Achievement from Alex Naraian MCIAT, South East Region Councillor and Chairman.

promote the role of the Architectural Technology and to be a celebration of their hard work. The students had also been heavily involved in promoting the event both on campus, but also further afield and had employed a series of traditional and some not so traditional methods to do this!

Perfect partners: CIAT and higher education

The Institute works closely with academia to produce the highly skilled Architectural Technology professionals of the future. Accreditation, Centres of Excellence, Recognition and Approval are all ways in which CIAT has built close links with higher education institutions.

Accreditation

Accreditation may apply to qualifications in Architectural Technology or related subjects that meet the CIAT criteria and QAA Subject Benchmark Statement for Architectural Technology. CIAT will Accredited recognised qualifications at the level of a UK Honours degree programme or which equate to 240 ECTS on the European Qualifications Framework (EQF).

Centre of Excellence

This status requires a robust culture of research and knowledge exchange which has a direct and significant impact and contribution on the evolution of the distinct nature and discipline of Architectural Technology. This will be of significant value to industry and other stakeholders at local and national level with whom the educational establishment engage.

Recognition

Recognition is intended for programmes offered at Masters degree level. The range of programmes will include (among others), Postgraduate certificates, Postgraduate diplomas and Masters degrees. CIAT will consider full-time, sandwich, part-time, multi-mode and

distance learning programmes of varying duration for Recognition. Programmes from both the UK and overseas are considered for Recognition.

Approval

Approval is for programmes offered at sub-Honours degree level. The range of programmes will include (among others) Foundation degrees, Associate degrees, Ordinary degrees, University certificates/diplomas and Higher National Certificates/Diplomas. CIAT will consider full-time, sandwich, part-time, multi-mode and distance learning programmes of varying duration for Approval. Programmes from both the UK and overseas are considered for Approval.

For more information on programmes please visit www.ciat.org.uk/en/careers



Model produced by University of Ulster students

The evening started off on a high, even before the guests for the private view had arrived, we had some good news. Each year some of UCLan's creative talents are recognised for their outstanding achievements at the University Creative Focus Awards 2014. The creative awards are awarded to six high performing final year students and this year Sally Archibald, from BSc(Hons) Architectural Technology, won the Architecture Award, a huge success, and a bit of a surprise as this is the second year in a run that a graduate of the AT programme has won this award.

A record number of students achieved firsts and upper seconds

As has become tradition there was the usual champagne opening ceremony by the course leader to say a big well done and to publically thank all those people who support the course. The evening as ever was fun and an appropriate celebrations to mark the end of another successful academic year in Architectural Technology at the University of Central Lancashire.

University of Huddersfield

It may have been one of the warmest evenings in June, but the air-conditioning in the computer suite made it an ideal setting for the Huddersfield Architectural Technology degree show. The atmosphere was electric with the university having just been awarded the Times Higher Education supplement's University of the Year. The 200 guests included former students, local practitioners and an impressive array of Yorkshire Region members.

Amongst the most stimulating AT work attracting comment was a college complex specialising in craft skills designed by Michael Griffiths (nominated for the CIAT prize). Other excellent final year schemes were submitted by Dan Nordon, Josh Lancaster, Ahtsham Ellahi and Saad Mirza. This year standards were very high from what was one of the most competitive final year cohorts in recent times. There were a record number of students achieving firsts and upper seconds.

Course Leader Charles Hippisley-Cox MCIAT commented 'In what has almost been 20 years as course leader, this group will stand out as one of the most responsive I have had the pleasure to

care for. Incidentally, I reckon that one of this cohort might include my 500th graduate. It has been a real privilege to have launched so many successful careers and I still find it especially rewarding when former students get in touch.'

Other prize winners included Hayley Chadbond for her contribution to the course as student 'rep' and Ismail Haruna for his highly personal study exploring the modern relevance of traditional building methods in Africa. Second year work was also on display and the highly professional refurbishment schemes of Karl Higham and Chris Benson were noticed by the special guests.

'It has been a real privilege to have launched so many successful careers'

The show held within the Queen Street Studios lasted a full week with many visitors taking great interest in the work scrolling on the computers and projected onto the walls. Some flat-work produced by the prize winners was also on display.

A medley of exciting first year work was also projected onto one of the walls with great potential already apparent. The show was the first under the auspices of our new Dean, Professor Michail Kagioglou who has recently joined the University. He is followed from Salford by BIM specialist Professor Patricia Tzortzopoulos who will be taking over as the Head of Department in the autumn. These appointments along with others reflect the commitment of the university to research excellence and it is encouraging that built environment disciplines are central to that vision.

University of Ulster

The Architectural Technology and Management degree show at the University of Ulster took place on 18 June 2014 and coincided with a Regional CPD event sponsored by the Keystone Group. This provided a perfect mix of students, academics, practitioners and industry representatives on the evening.

Final year students displayed their work which demonstrated their technical ability, attention to detail, design flair and understanding of the BIM process workflow. The event and the work on display was very well received by everyone in attendance, Leo Forte MCIAT(Northern Ireland Region Chairman) commented, 'The standard of work students put on display this year was outstanding and full tribute should be paid to them'.

Special guests on the evening were Karl Grace PCIAT and Patsy McGlone MLA, Chair of the All Party Group on Construction at the Northern Ireland Assembly. Members from the Region who recently achieved Chartered status were also presented with their certificates at the event.

University of Wolverhampton

In May this year the Architecture and Built Environment students (ABE) from the Faculty of Science and Engineering, studying on both the BSc (Hons) Interior Architecture and Property Development and BSc (Hons) Architectural Design Technology present their work for the Major Project and Design Exhibition module.

As part of their exhibition displays, the students were required to produce presentation boards, technical documentation, scale site models and a scaled working model for their selected project areas. A formal viva was also presented by each student in front of a panel of academics and external client guests.

The Module Leader Colin Orr stated that each year the students continue to demonstrate the key requirement for these CIAT Accredited programmes through their application of technical knowledge and design skills acquired through real-life schemes.

Influence by individual areas of research a number of the exhibits are being considered for CIAT/APS/RSA national student competitions.

Paul Boden, the ABE Technical Recourse Manager commented 'the students this year have produced some exceptional models using the departments architectural model making studio and prototype lab facilities. The students have experimented using a wide range of materials and model making techniques, combining traditional craft skills and technology driven equipment, utilising 2D and 3D CAD data to laser cutting and 3D print elements of their models. The students should be immensely proud of what they have achieved'.

The students should be immensely proud of what they have achieved'

As part of the exhibition, the department staff and students host an exhibition evening, where the student's families and friends are invited to the University to view the students displayed work. Again the exhibition night was a great success and prizes were awarded to several students in recognition of their quality work.



Above left: Kieran Wilson of the University of Ulster receiving the Faculty Prize from Professor Ian Montgomery.

Above, right, AT graduate Junaid Anwar of the University of Huddersfield celebrating with Sir Patrick Stewart, Chancellor.

Are you bei

Being served with a Court Claim Form is no laughing matter.

Michael Appleby of BLM LLP explains what members should do if they have the misfortune to receive one.

No-one wants to open an ominous looking letter and discover that it contains court papers which have been issued against them. Hopefully this will not happen to you, but if it does, this article will provide you with the information required to properly deal with a claim.

Failure to deal with a Claim Form appropriately and promptly may have serious legal, financial and reputational consequences for your business. It is important to take the necessary steps to protect your position vis-a-vis the claimant and your professional indemnity insurers.

Do not ignore

Doing nothing is not a viable option when a Claim Form lands on your doormat. A failure to notify your professional indemnity insurers promptly is likely to be a breach of your PII policy terms, probably leading the insurer to exclude or limit cover. As a result, it is important to discuss this matter with your brokers and/or insurers as soon as the Claim Form is received, as you only have 14 days from the date of service to acknowledge the claim.

If you don't acknowledge the claim within 14 days, the Claimant would be able to apply for a default judgment. While you may apply to set the default judgement aside, this can be a difficult and expensive process, with no guarantee of success. It could also result in professional embarrassment, as outstanding Judgments can affect your credit and claims record, and cause complications for you or your practice in the future.

It is therefore essential not to bury your head in the sand but to take early action to prevent this from happening.

Create a Core Team

If you are not a sole practitioner and there are other members of staff in your business, it is important that someone is nominated to communicate with your broker, insurers and solicitors in relation to the case. Nominating a core team of people, or an individual with knowledge of the claim, will assist with the control of information as well as the investigation and management of your case. Ensure that your insurers and representatives are kept up to date with any developments at your end, such as further correspondence or documentation that you receive regarding the claim.

Inform insurers immediately

Litigation can be a very expensive business, so check what insurance policies you have in place and liaise closely with your broker to ensure that you comply with any pre-conditions of cover such as early notification. As noted above, you should provide them with a copy of the court papers as soon as possible so they can take steps to protect your procedural position.

However, you should not attempt to reply to the Claim Form, or any communication from the claimant, without first seeking your insurer's authority. This not only allows you to benefit from insurers' experience when dealing with the claim, but also ensures that there aren't any issues with the

handling of it which could prejudice its investigation and/or defence. In the event that there is some question as to whether or not cover is in place, either to the court costs or the cause of the claim, your brokers should be able to assist with any queries you may have. In the majority of cases, claims are likely to fall under your professional indemnity insurance, although some could also relate to matters which would fall under a public liability or legal expenses policy. If, after discussing matters with your broker, no cover is in place you should seek legal advice as you may be able to obtain after the event insurance.

Check the court deadlines

You are required to provide a response to a Claim Form within 14 days of its service; do not miss this deadline. Take urgent advice from your broker and insurer to protect your position. An acknowledgment of service must be served upon the court within 14 days of service of the Claim Form (attached to the particulars of the claim) or 14 days of service of the particulars of the claim, should these be served separately.

ng served?



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privileged and must not be read by, or disclosed to, any other party.'

Consider your prospects

You should review the case that has been set out by the claimant and bear in mind that insurers will need your comments on the facts, allegations and loss claimed. This will help determine how best to deal with the claim as well as assisting your legal advisers when drafting your defence.

If you have any doubts in regards to the prospects of defending the claim, then you should discuss this with your legal representative or insurer as early as possible. In some cases, it can be wise to consider early settlement of a matter on a commercial basis to avoid prolonged litigation and increased costs, particularly when considering that the majority of settlements are confidential and without admission of liability.

Other important factors to consider when dealing with the claim are the reputational risks of defending a claim to a public trial and your own time and costs when dealing the claim.

Notify the Institute of any potential complaints

Aside from the legal implications and procedures detailed above, it would also be reasonable to assume that the claimant may intend to lodge a complaint against you with the Institute should they deem that your conduct has been unprofessional. In order to comply with the Code of Conduct, Clause 8a) "Breaches of this Code: The members shall: a) report to the Institute any alleged breaches of this Code by themselves of which they become aware", it is advisable to report any instances to the Practice Department in order to prepare the Conduct Committee should an official complaint be received.

Doing nothing is not an option when a Claim Form (left) arrives. A failure to notify your professional indemnity insurers promptly is likely to be a breach of your PII policy terms, probably leading the insurer to exclude or limit cover.

A copy of the acknowledgment of service should also be sent to the claimant or their solicitors if they are represented.

However, if you have referred the claim to your brokers/insurers as soon as the Claim Form has been received, your insurer's legal advisers will be able to deal with the acknowledgment of service on your behalf.

Preserve your documents

It is important to start collating and saving all relevant documentation once litigation is contemplated. Ensure that you gather all documents that are or could be relevant to the claim. This includes electronic documents such as voicemail recordings, e-mails, text messages and diary entries. Members are referred to the Institute's article Retention of Documents - Shred of Evidence for an explanation of what members should know about document storage and disclosure. (A copy of this article can be downloaded from the CIAT website.) A full copy of your papers will be required by your insurers and/ or

their legal representatives in order to prepare your defence.

Failure to provide relevant documentation either through loss or destruction could result in adverse inferences being drawn by the Court and may damage your defence by reducing the amount of supporting evidence that is available.

Any adviser that you and your insurers instruct will wish to see all the relevant documents as soon as possible so that they can provide you with their considered advice regarding both issues of liability and the value of the claim. It is therefore helpful to create a file of all the relevant documents, putting the documents in chronological order to assist with any future disclosure. Creating a chronology of events and setting out a written response to the claim may be helpful to your advisers but you must ensure that any documentation that is created is very clearly marked with the following wording: 'This document/file was prepared in contemplation of civil litigation. As such this documentation is

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Circular thinking

The property and construction industry has been concerned with recycling for many years, but as new technologies and systems become available on an almost daily basis, are we doing all that we can to minimise waste? Neelum Mohammed, Senior Sustainability Consultant, CBRE, reports.

With sustainability ranking increasingly higher on everyone's agenda – whether due to legislative changes such as the Climate Change Act, Landfill Tax or business and commercial waste duty of care; an impetus to make financial savings, improve on or simply a public relations or corporate responsibility – the industry needs to pay ever-more attention to resource selection and waste management.

Resource selection and waste management occurs throughout the building lifecycle but the influence starts at the design stage and it falls to the designer to embed the sustainable solutions within the scheme, and the main contractor to manage the egress of waste.

The potential to recycle goes substantially beyond the principles of reusing materials. A couple of years ago Dame Ellen McArthur coined the term 'The circular economy' to describe 'an industrial economy that is restorative by intention' – ie, one in which maximum use is made of resources. This extends the basic principle of recycling quite substantially, embracing the re-use of energy, labour and even information.

In the design of its own London headquarters in 2012, CBRE embraced these principles to a significant extent. This might surprise many of those who have visited what appeared to be our

'brand new' building, Henrietta House in London's West End.

The refurbishment procured sustainable materials and the nature of the fit-out only required new flooring and internal walls to be replaced. The environmental performance of these elements was measured against the Green Guide to Specification set by the British Research Establishment. The performance of each material is ranked from A+ to E and is derived from 13 environmental issues, such as climate change, human toxicity and waste disposal.

Our main contractor was required to measure sustainability against the Considerate Constructors Scheme, which verified that the contractor went beyond best practice site management principles. More importantly with regard to waste management and the restricted space on site during construction, a site waste management plan had to be implemented to ensure that all waste generated during construction was managed sustainably.

The main contractor completed the site waste management plan at the start of the project. They assisted in planning the minimisation and removal of all waste from the project and worked with their waste contractor. This mean waste was removed efficiently and correctly and ensured that the maximum



87% of the waste generated during the works was diverted from landfill

amount of the waste produced on site was recycled.

The plan also set out that all reasonably practicable measures would be taken to reduce site waste including ordering correct quantities or materials, encouraging sub-contractors to minimise packaging and where possible, to order materials pre-cut to the correct size. In doing so it was expected to not only reduce waste but also dust on site.

Due to the restricted space on site, the waste contractor collected the waste and sorted it in their sorting depot. There the waste was sorted into recyclables and non-recyclables. Anything that was not recycled was transported for landfill. Waste that was identified to be generated on site included floor tiles, metal, plasterboard and wood.

On completion of the project, the main contractor was able to account that 87% of the waste generated during the works was diverted from landfill.

For any building, sustainable material selection and waste management can be efficiently managed during design and construction. The next challenge is managing procurement and waste management efficiently during building operation. Organisations have a duty of care in the management of waste generated until it is given to a licenced waste contractor. The

The 'waste hierarchy' is commonly part of an environmental management system: prevention, reuse, recycle, recover and disposal. Organisations have the opportunity to responsibly manage their waste generated: from engaging the procurement team to selecting recyclable office supplies to appointing a waste contractor who adds value to the whole process.

Another important factor in waste reduction is the procurement of office supplies. This will influence the waste management requirements, and should primarily focus on reduction, reuse and procurement of supplies that can be recycled or reused. Even reducing the packaging that they are delivered in is important. It is then necessary to educate the building occupants in waste segregation.

However in implementing these strategies within the building operation, the final requirement to achieve sustainable waste management is to appoint a waste contractor who

advocates the same principles of the waste hierarchy and provides clear measurable data that building managers can monitor and benchmark against.

The waste hierarchy: prevention, reuse, recycle, recover, disposal

The contractors can add value and provide support to building managers to positively influence the waste behaviour of the building occupants; in engaging with building occupants, reducing the number of general waste bins, to supplying informative signage for each recycling bin.

It is common to hear that organisations and waste contractors are championing zero land fill, but there will always be a volume of waste that will have to go to

landfill. Transparency is crucial. With the drive towards truly sustainable buildings there is an opportunity, but perhaps more importantly, a need, for the entire industry to embrace the benefits of recycling to the greatest extent possible. Working these principles from initial design to the disposal of operational waste is crucial to the success of any building.

Collaboration is crucial, all participants in the building process have a duty of care whether it is legislative or not: The key to success in waste minimisation is communicating the benefits to all in the supply chain from designers, suppliers interior designers to building occupiers and all those involved in the project, from planning through to occupation.

CBRE is an international building consultancy firm offering expert technical advice.



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VISION IS A NEW EVENT FOR DESIGNERS, SPECIFIERS, CLIENTS, AND SUPPLIERS.

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Held annually, Vision is the place where these communities will be able to come together to discuss, debate and showcase the latest innovations and developments in architecture, design and the built environment.

Vision is an event focusing on innovative building products, materials and technology. Vision will provide ideas for new and inventive ways to

achieve better building design and comply with changing legislation.

The event provides a unique opportunity for suppliers to showcase their innovative building solutions.

Through a series of lectures, live debates and practical seminars, alongside a carefully curated exhibition of cutting edge products,

Vision will provide the meeting place for professionals connected to the built environment.


Learn more about exhibiting, sponsoring, speaking and visiting at www.visionlondon.com or contact Michael Costain on michael.costain@visionlondon.com +44 (0)20 3633 2237

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with Peter Murray



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email us at: **help@absnet.org.uk**

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In urgent cases we can give emergency assistance immediately.

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Golden days ahead for CIAT

The Institute's 50th Anniversary year was officially launched by President Karl Grace PCIAT in November. Media and PR Director Adam Endacott looks ahead to the celebrations as well as into the past at some of the highlights of CIAT's half century.

The Institute's 50th Anniversary year was officially launched by President Karl Grace PCIAT at the President's Dinner Dance held in Nottingham on 29 November 2014. This important milestone for the Institute will now be celebrated throughout the coming year with a variety of events culminating in the Presidents' Ball in Edinburgh next November. Over the next twelve months, celebratory events will include:

- A 50th Anniversary Celebratory Luncheon and Awards presentation at The Savoy Hotel on Friday 25 September celebrating the golden anniversary, combining the announcement and presentation of the Institute's Awards
- The Presidents' Ball at The Balmoral Hotel on Saturday 29 November in Edinburgh which will round off the year of activities
- Civic Receptions to be held in London, Hong Kong, Northern Ireland, Republic of Ireland, Scotland and Wales
- Regions and Centres holding their own celebratory events
- A plaque competition in the new year for members to design a fitting tribute to celebrate the 50th and then hung for permanent attachment at Central Office
- Many more initiatives throughout the year

In the beginning

The origins of CIAT began following a report by the RIBA calling for the establishment of 'an institute for technicians'. Consequently, on 12 February 1965, the Society of Architectural and Associated Technicians (SAAT) was founded, representing and qualifying technicians within construction.

In its first year, 1,799 technicians joined the Society. Recognition of the new Society along with increasing its membership were pivotal issues during the early decades, and SAAT successfully embedded itself as a lead body within the built environment.

From SAAT to CIAT

It was on 1 May 1986, that SAAT's name changed to British Institute of Architectural Technicians (BIAT), to reflect the specialisms of Architectural Technicians, and in 1994 the title of the Institute changed to British Institute of Architectural Technologists, to recognise the development educationally and in practice of the professionally qualified Architectural Technologist.

In 2002 the Institute introduced a new technician grade to recognise the professionally qualified Architectural Technician. In its fortieth year, the Institute was recognised by incorporation by Royal Charter in July 2005.



**The
Institute
continues
to build on
its solid
platform**

Full Members became Chartered Architectural Technologists (MCIAT).

The Institute continues to build on its solid and respected platform for the continued evolution of the discipline of Architectural Technology, particularly internationally with the establishment of its new Overseas Centres.

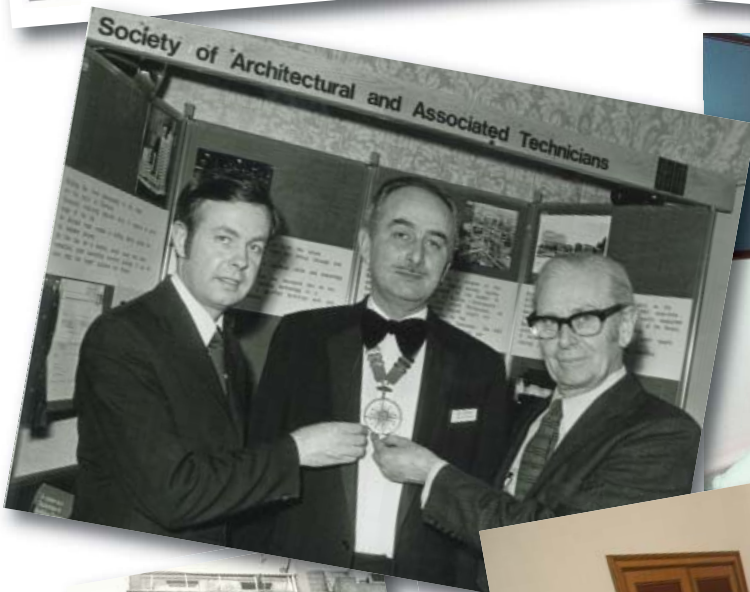
How you can get involved

50 years is both a time for reflection and to look forward to the next exciting stages for both the Institute and the discipline – if you have any memories, photos or memorabilia from the past six decades then please email adam@ciat.org.uk. We will be delighted to hear from you. This celebration is very much for your Institute and we would like as much involvement from members as possible.

For further information on tickets for the events listed please contact Isabelle Morgan (isabelle@ciat.org.uk). For other enquiries or sponsorship options please contact Adam Endacott (adam@ciat.org.uk)

You can keep up to date on the celebrations by following us through our social media platforms #CIAT50Years

We will also be featuring items on the celebrations on the website.



Clockwise from top left: Members in Brighton at the Representative Assembly in 1970.

An early SAAT Council meeting chaired by George Lowe. Cutting the cake for SAAT's 21st birthday in 1986 – Paul Newman and Owen Luder.

Bruce Sheerin flanked by members to commemorate ten years of SAAT in 1975.

Honorary Secretary Dudley Hewson outside Central Office in City Road after its purchase in 1978.

Presentation of the Royal Charter in July 2005.

Colin Orr chairs the AGM in Belfast, 2012.

'Top 40' hit for Kyson

Chartered Member wins top European designer rating

Chartered Architectural Technologist Scott Kyson MCIAT of Kyson Design, London has been announced as the sole UK entrant in the 'Europe 40 under 40' ranking, compiled by the Dublin-based European Centre for Architecture, Art, Design and Urban Studies and The Chicago Athenaeum: Museum of Architecture and Design.

The list comprises 54 'laureates' from 11 countries. This year's results are dominated by

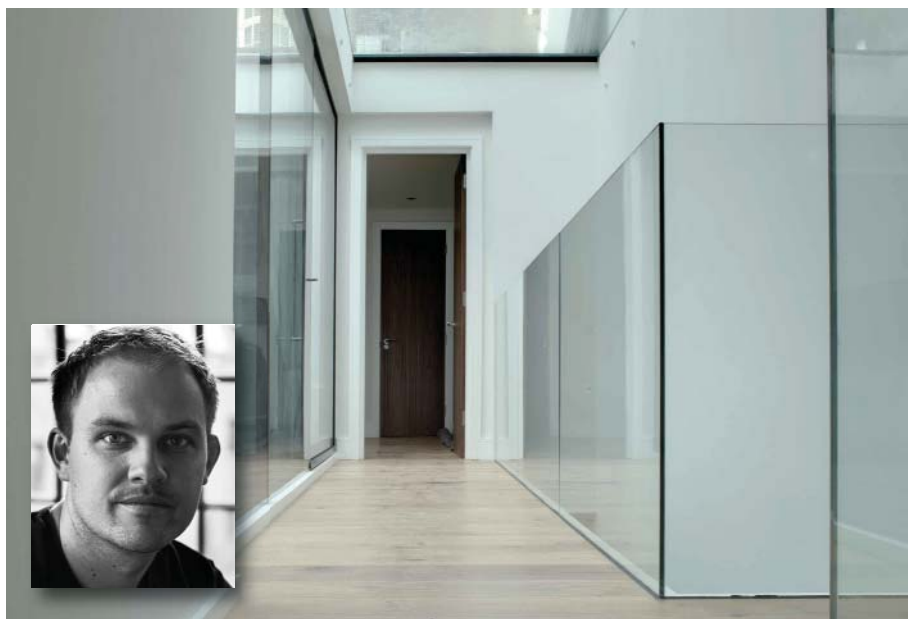
French architects, with 34 chosen from 17 practices.

Christian K Narkiewicz-Laine, museum president of the Chicago Athenaeum, said the latest winners were 'some of the brightest and most progressive architects and designers ever selected in the award's history.'

Scott Kyson is no stranger to awards. He was Winner of the 2007 and 2013 Alan King Awards, Highly Commended in the 2013 Award for Technical Excellence in Architectural Technology, and Commended in the 2008 and 2010 Alan King Awards. He, with his

practice, has also recently been announced as Winner of the 2014 Alan King Awards (*see insert with this issue*). He has also made several television and media appearances including Channel Four's *Grand Designs*.

Commenting on the rating, Scott said: 'We are very pleased to have received this accolade for a body of work that has continued to evolve over the last five years. 'Presently, our commissions continue to match our ambition as the practice expands its portfolio in breadth and scale whilst maintaining its core principles.'



Above: interior of Kyson's award-winning 5 Montpelier Terrace, London SW7. Inset: Scott Kyson MCIAT, Chartered Architectural Technologist.

Inclusive Design Virtual Group

CIAT is looking for members who are willing to be part of the Institute's Inclusive Design Virtual Group. This is to ensure that information relating to Inclusive Design is disseminated, and that CIAT is represented through informed and intelligent

contribution from its members.

The Institute already has representatives that deal with Republic of Ireland, Scotland and Wales so that CIAT views can be heard from these legislative nations regarding this topic, and a LinkedIn Group has been set up. More members are needed – ideally from England (but members

from all nations are welcome to join and contribute) in order to provide an equal balance and input for all nations.

If you are interested in becoming part of this Virtual Group, please contact Graham Chalkley, Assistant Practice Director in the Practice Department (graham@ciat.org.uk) for an Expression of Interest Form.

Honorary Doctorate for CIAT Chief Executive



Francesca Berriman MBE, Chief Executive, received in November an honorary degree of Doctor of Technology from Southampton Solent University in recognition of her outstanding contribution to the Architectural Technology discipline.

Throughout her career, Francesca has worked tirelessly and enthusiastically to promote the recognition of Architectural Technology. Students at Southampton Solent University are already reaping the benefits of Francesca's expertise as she was part of the development of the Quality Assurance Agency's Subject Benchmark statement in Architectural Technology, which forms the basis for Accredited undergraduate Honours degree programmes in Architectural Technology.

With a pedigree in Architectural Technology that spans more than 20 years, Francesca was one of the first and youngest female Chief Executives within the built environment sector and the first female Vice Chairman of the Construction Industry Council (CIC).

Francesca said 'I am honoured to receive this award, and I am delighted that Southampton Solent University is at the forefront of the discipline, and ensures its graduates are placed in a strong and competitive position to develop their careers and become leaders within the built environment and beyond, representing all that is great in the discipline.'

Report from the 2014 AGM

The Institute's 2014 AGM was held in The Ballroom at the Crowne Plaza, Nottingham on 29 November, which included the unanimous approval of the accounts as well as the authorisation to Council to reappoint the auditors. The one resolution as circulated previously to members was approved unanimously with two further amendments.

The two additional amendments to the Conduct and Disciplinary Procedures are:

Clause 10 was extended to include the words in red:

Clause 10

Clause 10c) needs to be amended to include the additional statement "preliminary hearings by the Conduct Committee, except where there is a Prima Facie case as per Clause 15a);".

*And Clause 13c) "may" was amended to read "shall" as detailed below:
Revised Clause 13c):*

"A complainant who has made allegations of a breach of the Institute's Code shall be:

c) advised that, as part of the Complaints Procedure, his responses, statements and supporting documentation shall be copied to the member;

The new Conduct and Disciplinary Procedures will become effective from 1 May 2015.

In the President's address, Karl Grace gave an overview of the past year and in closing a presentation of CIAT branded cufflinks was made to Bob Kay MBE PPBIAT MCIAT as he stepped down as Honorary Treasurer after ten years in the post.

It was also the last AGM for Colin Orr PPCIAT MCIAT as Immediate Past President. Doug Fewkes MCIAT now takes on the role of Honorary Treasurer and Gary Mees MCIAT now commences his year as President Elect.

A full report of the Awards presentations and the President's Dinner Dance which took place that evening will appear in the spring issue of AT.



The CIAT weekly Ebulletin

All members with email addresses receive the CIAT weekly Ebulletin featuring the latest Institute and industry news.

Non-members can subscribe too – email info@ciat.org.uk with your details.

Join CIAT's Conduct Committee

The Institute's Conduct Committee is a dynamic, thought provoking and rewarding committee within the structure of the Institute which strives to regulate the actions of and maintain the high standard of professionalism expected from members as set down in the Code of Conduct.

Membership of the Committee requires the analysis of case papers prior to meetings, attendance at the quarterly Conduct Committee meetings that generally take place at Central Office in London, and regular discussion/debate by email. Communication by e-mail within relatively short timescales is essential. This work is unpaid but we do cover your expenses.

One position on the Committee will be available from March 2015 and as part of the Institute's ethos of inclusiveness and succession planning we would be interested to receive expressions of interest from Chartered Members. Preference will be given to those who have not served on the Conduct Committee previously.

If you are interested please send an email to honsecretary@ciat.org.uk providing your name, membership number and a statement explaining why you would like to be considered for the Committee.

Expressions of interest should be submitted no later than 16 February 2015.

Copies of the Code of Conduct and Conduct and Disciplinary Procedures can be downloaded via the website at the following page:

www.ciat.org.uk/en/members/Complaints_procedure/

New QAA Subject Benchmark for Architectural Technology

The revised QAA Subject Benchmark Statement (SBS) for Architectural Technology was published in October by the Quality Assurance Agency (QAA). The SBS directly links to CIAT's Accreditation process and its Professional Standards Framework, the document which sets out the education and practice standards which all Chartered Architectural Technologists are required to meet.

Speaking on the publication, Professor Sam Allwinkle PPBIAT MCIAT said 'As chair of the review group I am pleased to note the publication of this major reference document which recognises the significance of the academic and professional discipline of Architectural Technology and now includes Masters as well as Honours degree level criteria.

'It is an important document for both our Accredited universities, when setting content and standards for Architectural Technology Honours Degrees and Masters degrees and for CIAT's Professional Standards Framework to inform and contribute to the content and body of knowledge that underpins Chartered Membership.'

To download please visit www.qaa.ac.uk



NEW MEMBERS

We are delighted to welcome the following as Chartered Members:

011013	Keith Southernwood	02 Yorkshire
022056	Steven Jordison	02 Yorkshire
024404	Stephanie Hill	02 Yorkshire
022152	Lloyd Wilson	02 Yorkshire
020970	Andrew Brown	03 North West
022178	Joel Pinnington	03 North West
023795	Zoe Nutt	04 E Midlands
020920	Dan Holmes	05 W Midlands
022536	Timothy Martel	05 W Midlands
024117	Rajvinder Sambhi	05 W Midlands
022168	Alex Whibley	05 W Midlands
017914	John White	05 W Midlands
019093	Richard Cowie	05 W Midlands
020421	David Coloini	05 W Midlands
018801	Ian Francis	06 Wessex
021889	Mark Terrington	07 East Anglia
022050	Gareth Cavill	07 East Anglia
014761	Jonathan Rees	07 East Anglia
023592	Mark Tavare	07 East Anglia

024824	Femi Akande	07 East Anglia
027810	David Jones	07 East Anglia
026785	Ashley Stokes	08 Central
019530	Brent Rees	08 Central
020172	Mick Lee	08 Central
021414	Phillipa Le Roux	08 Central
025238	Simon Hansard	08 Central
009533	Calvin Grant	09 Gr London
027192	Liam McRoy	09 Gr London
029325	Paul Pizzo	09 Gr London
017351	Michael Fountain	10 South East
019732	Tom Patton	10 South East
021477	Margarita Montvilaite	10 South East
025788	Paul Maggs	10 South East
027191	William Price	12 Western
020942	John Bryant	12 Western
028065	Edward Phillips	12 Western
023493	Michael Bassett	13 Scot W
015820	Steven Kemp	13 Scot W
017198	Alan Sneddon	13 Scot W
022883	James Slater	14 Scot E
029272	Gary Willis	14 Scot E

012660	Keith Little	15 N Ireland
028108	Richard Watson	15 N Ireland

Congratulations to the following Chartered Members on re-entering the Institute:

012801	Conor Byrne	15 N Ireland
008594	Aiden Kearney	C2 R Ireland

Congratulations to the following member for becoming a professionally qualified Architectural Technician (TCIAT)

026672	Emma Taylor	01 Northern
--------	-------------	-------------

We regret to announce the deaths of the following members:

4963	Geoffrey Toomer	04 E Midlands
2894	John Weedon	10 South East

Region and Centre News/Events

Yorkshire Region (2)

Selby Leisure Centre site visit

3 February 6.15 pm-8.00 pm. Yorkshire Region members and guests are invited to the final site visit to the ongoing redevelopment of Selby Leisure Centre, subsequent to its total destruction by fire two years ago.

Places are limited to a maximum of 30, with these being allocated on a first come first served basis, subject to a commitment to participate in all three visits. Members should arrive at site for 6.15pm – as tours will commence at 6.30pm. Members need to bring their own PPE. Car parking is available adjacent to the site.

Address: Abbey Leisure Centre, Selby, YO8 4BL. To book please visit www.ciat-yorkshire.org.uk

North West Region (3)

Concrete Centre CPD, Bolton

Members and guests are invited to the following event on 5 February 2015: The Concrete Centre CPD: Thermal performance and Energy efficient homes by Elaine Toogood. The event will cover Introduction to latest and future legislation; Part L1A (2010 - 2016 and beyond) and The Code for Sustainable Homes; air leakage; thermal bridging; building orientation; thermal mass and U-

values for external walls; meeting the mandatory energy/CO₂ requirements with masonry and concrete solutions. It will also include: exploration of residential developments built to meet high energy performance targets including Zero Carbon Homes; Passivhaus; and the Code for Sustainable Homes. Examples illustrate a range of masonry and concrete construction solutions.

Time: 6.00 pm (refreshment/networking) 6.30 pm (event start time). Duration: two hours including Q&A. A light buffet and drinks will be provided. Cost: free to members and students (£10 for non-members and £5 for non-CIAT students) To book, please contact Nooshin Akrami via email: n.akrami@bolton.ac.uk

North West Region (3) with Wales Region (16)

Site visit to TATA Steel, Shotton

Members and guests are invited to a joint venture between North West Region and Wales Region on Thursday 23 April 2015. 10.00 am to 3.00pm. The event will include a factory tour, lunch and presentation. Please note that places for this event are limited. Cost – free to CIAT members and students (£10 for non-CIAT members and £5 for non-CIAT students) To book please contact Nooshin Akrami via email: n.akrami@bolton.ac.uk

South East Region (9)

'Pecha Kucha' CPD event

The South East Region's Cross Construction Discipline 'Pecha Kucha' event on 27 November proved a great success. The number of attendees

exceeded 60 and seating had to be crammed into the presentation venue to accommodate the number attending. In order to put on the event, the Region teamed up with Drom UK Ltd. and the RICS. The topics included Architectural Technology, architecture, structural and civil engineering, surveying, interior design, saunas and steam rooms.

Pecha Kucha presentations are 6-minutes 40-seconds. The speaker uses 20 slides that auto-advance every 20-seconds and the speakers are not allowed to run over. This stops 'Death by PowerPoint' occurring! The format was developed in Tokyo. 'Pecha-Kucha' roughly translates to 'chit-chat'.

The evening was technically informative, entertaining and was complimented with a drinks and canapé reception. If other Regions wish to host a similar event, then Alex Naraian would love to hear from you. Email alexander.naraian@adamarchitecture.com

RIBA CPD events

All UK members should have received a leaflet with this issue giving details of free RIBA CPD events. If you did not receive a leaflet please visit www.architecture.com for details.

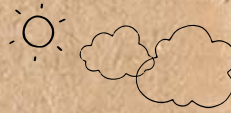
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