



The BIM Design Paradigm

Building Information
Modelling on large and
small projects

IN THIS ISSUE

BIM not BIG
Advice for SMEs

A bird's eye view
3D modelling in an unusual
conservation setting

Success in your hands
The POP Record route

AT magazine

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In this issue



- 4** **Housing hat trick**
Three awards for member projects

- 6** **BIM doesn't have to be BIG**
BIM advice for SMEs

- 8** **The BIM Design Paradigm**
BIM in practice



- 12** **Research pays off**
Could your project be eligible for tax relief?

- 14** **Has conservation come of age?**
Paul Travis MCIAT on changes in conservation



- 16** **A bird's eye view**
New technology for old dovecotes

- 24** **Turning over a new leaf**
Biodiversity and development



- 27** **Are you augmented?**
Instant 3D images could be the next step forward for construction

- 28** **Regional focus**
A look at the East Midlands Region



- 36** **Success is in your hands**
Two colleagues try the POP Record route to membership

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Editor's foreword



Building Information Modelling, Augmented Reality and 3D Modelling are some of the technical highlights of this issue

In the previous issue my editorial focused on the importance of members' engagement with conservation. In this edition, although conservation is featured, the prevalent theme is new technology.

As we all know, BIM will become compulsory on UK government projects in 2016. This may encourage, in some quarters, the idea that BIM is something that only the 'big boys' need worry about for now.

On page six of this issue however, John Eynon of the South East BIM hub argues that BIM doesn't need to be big – it is suitable for SMEs (small and medium sized enterprises) also. On page ten member Karol Mac Gairbheith MCIAT gives us the benefit of his ten years of experience working

with BIM in practice, outlining the advantages of Building Information Modelling in the production of several technologically advanced building designs.

3D modelling is another phrase we are hearing more and more of, as technology becomes more capable of making fast and accurate digital representations of real objects. On page 27, Kenny Ingram of IPS Software shows how the increased use of smartphones and the introduction of formalised mobile strategies are delivering a host of benefits at every stage of a building project's lifecycle – a process known as Augmented Reality or AR.

Those of you, however, who are interested conservation and prefer the reassuring solidity of plain old

It would be physically impossible for 'ebuildings' to replace real ones

unaugmented reality may find your attention drawn to the award-winning feature on page 16 by Michael Freeman about the conservation of historic Scottish dovecotes or 'doocots'.

But don't get too sentimental - the article is in fact about the use of 3D modelling to digitally preserve information on these at-risk structures. Ebooks may soon outsell paper books; it would be physically impossible, however, for 'ebuildings' to replace real ones; but for the purposes of documentation and research, 3D modelling is likely to become an indispensable tool that Architectural Technology professionals should be aware of.

Regards
Hugh Morrison
Editor



Becoming a Chartered Environmentalist

As a constituent body for the Society for the Environment, CIAT is licensed to award the Chartered Environmentalist qualification to its Chartered Members. The Society for the Environment is the leading co-ordinating body in environmental matters and is a pre-eminent champion of a sustainable environment, and has registered over 7000 Chartered Environmentalists (CEnv).

The Society for the Environment have made changes to the Chartered Environmentalist qualification. The reason for this change is to ensure there is a sound knowledge, proven experience and best practice within the profession, as the Environment is the heart of the professional qualification.

To be eligible to become a Chartered Environmentalist, applicants must be MCIAT and demonstrate relevant academic and/or professional experience.

For further information please visit:

www.ciat.org.uk/en/Join_CIAT/chartered_environmentalist/

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

Housing hat-trick



Lawrence Coussell MCIAT, Chartered Architectural Technologist and CIAT-Accredited Conservationist, received three awards for two East Anglian projects in the 2014 King's Lynn and West Norfolk Mayor's Design Awards.

Herring's Lane

I received the commission for this project in July 2009, located on the north Norfolk coast near Fakenham. The house was completed mid December 2013 with the owner taking residence ready for Christmas 2013. There is planning history with this site regarding the alteration and extension to the original house. The decision to build new eliminated these complications.

The site is not open; it has a walled garden to the south and residential dwellings to the north, east and west. The site does however command good distant views to the south/west from first floor level. The first floor landing quadruple doors takes advantage of this. The house was designed to suit its surroundings. A large Georgian style symmetrically balanced house would not fit comfortably on this site. The house was positioned on the site so as not to overlook or be overlooked by neighbours whilst also providing a relatively secure and enclosed south facing garden. The twisting of the east section through 30°

opened the garden façades to take advantage of increased solar gain. The fulcrum of this twist is a large circular stack housing a log burner in the day room.

The design of the house is open plan and there are views into rooms from other rooms both through the house and externally. There is a 'through room' view from the parking area onto the enclosed lawn. The original planning approval included a one and a half storey glass walled storm porch with an 'eyebrow' copper covered roof. This was substituted for a single storey glass porch with radiused and stepped forward lead roofs.

In addition to eaves heights and hip roof positions the materials choice was carefully considered. The east and north elevation main house eaves have been kept low whilst the south and west eaves are high. This kept the house more in keeping with the surrounding properties whilst allowing garden facing bedroom windows to be set at a height to be seen through whilst standing. Floor levels vary on both the ground floor and first floor.

I believe the scheme has enhanced the environment by virtue of the attention to detail and consideration to design. Items such as the rendered cavetto eaves, shaped exposed rafter feet, extended brick quoin width, low level north windows to provide a seated view, knapped flint squares and the wide kitchen window providing a panoramic view of the entrance drive were all considered. The boarding (and its colour) to the south and west courtyard elevations prevents the house appearing heavy when seated on the courtyard terrace. Vernacular materials have been used with all brickwork in Flemish bond. The render finish to the higher eaves section provides the 'full stop' to the building as I intended.

Regarding sustainable development, the introduction of the air sourced heat pump together with increased insulation assist with overall running costs. Material choices are all from the established supply norm which again helps to reduce the overall carbon footprint.

Three Acres

This is a large site being of three acres (as the name suggests), also near Fakenham, upon which there was a 1960s four bedroom bungalow with three attached garages. The bungalow was randomly positioned and of a style typical of its age, and looked lost on an otherwise splendid site. My client's brief was to provide a family home with an internal open plan using local materials externally all within a given budget.

The vernacular palette of materials available is quite extensive. A combination of a chosen few was used but there was a conscious effort not to produce a 'mix and match' appearance. The chosen materials have been combined so as to produce natural shadow lines and colours.

The house needed to be large enough on footprint to provide four bedrooms. Planning restrictions however limited the roof ridge height – upper floors are all within the roof space whilst the ground floor ceiling height is slightly more than a modern house ceiling height. The eaves are at 3050mm above ground level – a height which would be in keeping with a one and a half storey chalet-style dwelling. The simple Dutch style gable parapets hide a 2m wide flat roof enabling a larger footprint to be provided whilst keeping the ridge height down.

The house is designed deliberately to appear 'solid' commanding its setting within the large site. There are single storey outbuildings as an annexe to the main house (which have not yet been constructed) to provide a farmyard feel and appearance. The guest accommodation is phase two construction.

We believe the scheme has enhanced the environment by virtue of the attention to detail and consideration to design. Areas of detailing: gable wall batter – making the house grow out of the ground - but is softened with a simple Dutch style parapet, very low east windows to see through when seated, simple exposed oak lintels to chosen windows which are untreated and will be left to fade, Queen closers with Flemish bond brickwork and closely spaced knapped cobble flints – so the panels are dark and bold rather than mortar heavy.



The site originally contained a randomly positioned 1960s bungalow



The new house, in the East Anglian vernacular style, makes clever use of Dutch gables (inset) to hide a 2m wide flat roof.



Sustainability or sustainable development can be considered as having three main areas: environmental, social and economic. Regarding environmental and socially the structure components sit in the main stream domestic construction model. Regarding economics, the material used again sits with the established current supply chain. The introduction of the air source heat pump assists with reduced carbon emissions.

BIM doesn't have to be BIG

John Eynon of the South East BIM Hub offers some pointers for small and medium sized enterprises (SMEs) that may have concerns over BIM adoption.

The target of BIM adoption for centrally funded projects by 2016 is within sight, but for many it still represents a huge challenge and is perhaps a source of both fear and confusion. SMEs (companies up to 250 employees) represent a significant proportion of the industry and are in many ways its engine room.

Most projects are delivered by teams of specialist contractors, many of which are SMEs. They bring specialist knowledge, skills, and delivery expertise to the table, and projects would not succeed without their input. In addition, at a time of great upheaval and change for the industry, SMEs have unique advantages over their larger counterparts. They are more agile and responsive to change, can innovate faster with shorter command lines, and spend less time agonising over decisions and more time in the acting and doing.

For all these reasons, if SMEs are not on board with BIM, it is not good for the industry. And if you run an SME, whatever you've heard, it may be not be as scary or costly as you think! Below are a few pointers to get you started.

The beginning

Over the past few years I've visited a number of Chartered Institute of Building (CIOB) regions to talk about BIM. I always leave some advice, which can be summarised as follows:

- Spend as little as possible;
- Check out the websites;
- Get the free stuff;
- Understand UK government strategy and key documents;
- Read other relevant information;
- Think about our own role/business/organisation;



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- Attend some conferences, talk to people, join your local BIM Hub.

Remember, though, that working in BIM — or the 'common data environment' to use the official parlance — is still all about information: how it is used, produced, exchanged and communicated. It just so happens that in BIM we can do clever things with it, but BIM is still just about how information travels around the lifecycle.

Initial guidance

There is a lot of free guidance and advice available. The UK BIM Task Group website, www.bimtaskgroup.org, is a tremendous source for current standards, guidance, case studies and news, as well as current developments. And it's all free.

The key documents to understand are:

- PAS1192/2 and 3, which deal with the processes for capital and FM projects;
- The BIM Protocol which is a contract addendum for BIM;
- Government Soft Landings which is the UK government's version of BSRIA Soft Landings which deals with planning for commissioning, handover and aftercare;
- COBie UK 2012, which is a way of exchanging data on the BIM environment.

As you begin to review the information, the questions uppermost in your mind should be: 'What does this mean to me, my business, my project, my team?' To begin to answer these questions, you must first understand your own business

or organisation: What information do you produce? What information do you use? Who uses your information and how? How do you use other people's information when they give it to you?

Investment Matrix

Something that should help you is the BIM Investment Matrix, produced by the BIM Technologies Alliance, which is facilitated by the Construction Industry Research and Information Association (CIRIA) and allied to the BIM Task Group and composed of the leading BIM software houses and vendors.

To access it on the BIM Task Group website at www.bimtaskgroup.org/resources, you will need to register, but it's well worth the trouble. The matrix helps businesses calculate the level of investment they will need to make, breaking the whole process down into stakeholders, stages, activities, tools, benefits, training, and indicative costs per seat over three years.

So whether you're a client, manufacturer, main contractor or subcontractor, supplier, or consultant, you can find your place in the construction food chain. Working

through the tables enables you to come up with your personalised picture and plan for BIM.

You can then use this to inform your discussions with your team, about training and implementation and with external parties such as consultants and vendors. Inevitably discussion at some point will turn to which software to select, how much this costs, and return on investment.

You may just need a viewing package — there are free versions available

This will very much depend on the picture that emerges from your matrix exercise. However, if you are a 'power' user, then you will be authoring and manipulating models, in which case you will need to invest in authoring software and the associated kit.

At the other end of the scale, 'basic', if you simply receive information and

manufacture and/or install, then you may just need a viewing package — and there are free versions available.

Assuming that models have been built correctly and linked, then file sizes should not be excessive, and should not warrant huge IT infrastructure. I would also begin by talking to clients, suppliers, and the people you work with. See what they're up to, what packages they use and how they do it. If some common themes emerge then that might give you a steer on how to proceed.

Return on investment is a tricky subject, because again it will depend on where you sit. Studies have been published, and the figures are impressive. The benefits already realised in the UK public sector have given departments such as the Ministry of Justice the confidence to push on with BIM adoption.

John Eynon is chair of the South East BIM Hub, vice chair of BIM4SME and director of Open Water Consulting. www.openwaterconsulting.co.uk Reproduced by permission of Construction Manager. For more news, views and technical features visit www.constructionmanager.co.uk.

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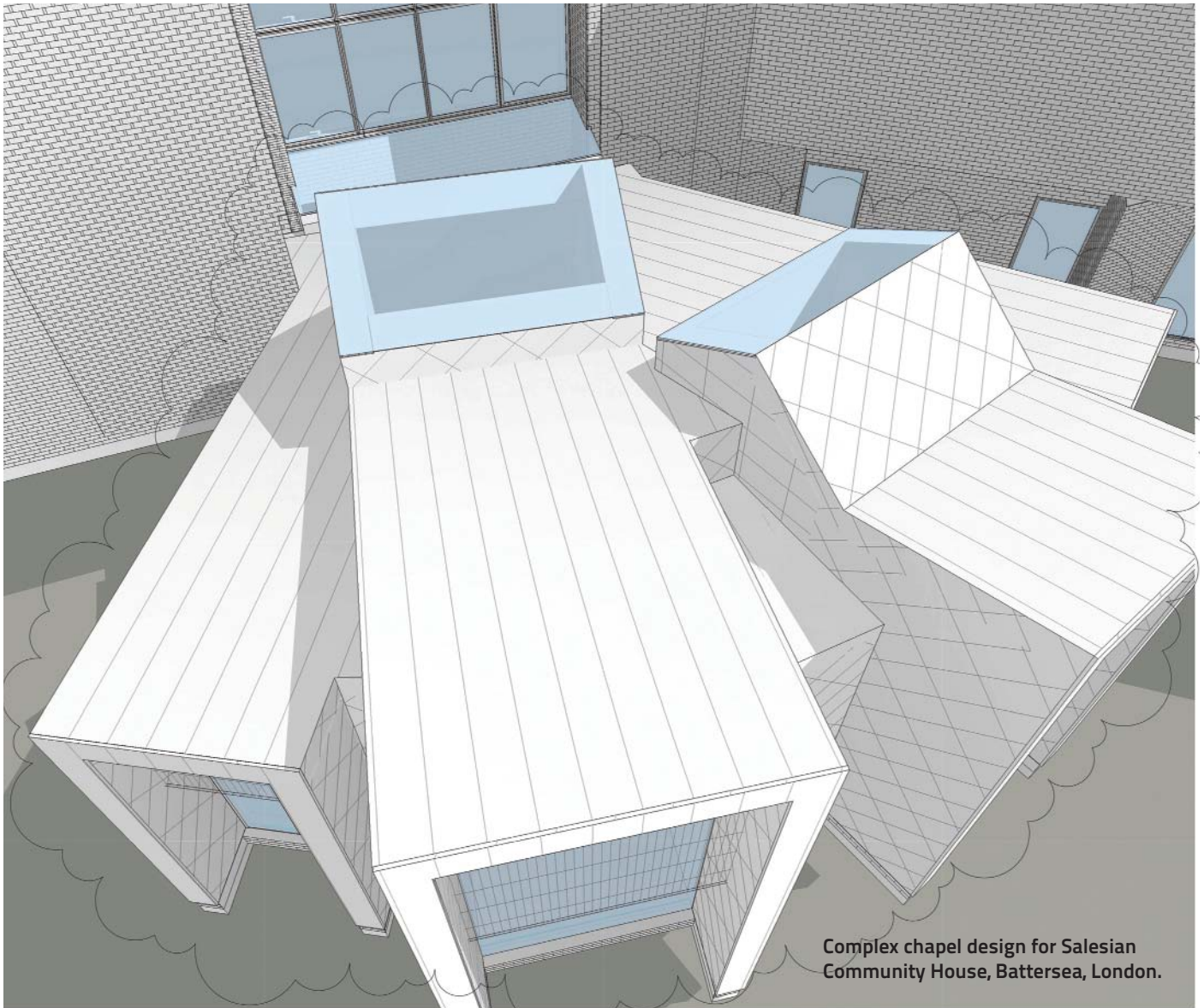
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The BIM design paradigm

Karol Mac Gairbheith MCIAT has used Building Information Modelling (BIM) systems for the last ten years. In this article he explains the development and benefits of BIM in architectural practice.



Complex chapel design for Salesian Community House, Battersea, London.

Twenty-first-century construction demands more complex and sustainable buildings than ever before. A paradigm shift in architectural practice is bringing change to the industry's workflow by enabling a previously impossible degree of planning, coordination, and communication. This shift is created by the extensive promotion by government,

and the concentrated development of Building Information Modelling (BIM). It is a shift from 'possible to real' to that of 'virtual to actual'. BIM systems and processes are taking us ever nearer to the dream of an integrated practice, via digital fabrication.

The BIM revolution

With the need for better construction management many software manufacturers have developed their own versions of BIM platforms in response to government demands and its target for BIM enabled projects to be mandatory by 2016 on government funded ventures. Autodesk's Revit

software, however, remains the most widespread program in use.

Consequently, the implementation of BIM processes within building design and procurement has revolutionised the architectural process. Those processes are the product of parameter-based adaptive models prepared by architectural designers. However, the past five years has seen a surge of use by contractors to feed their cost driven objectives, and to efficiently meet client expectations. Arguably, therefore, the contractor has become the chief protagonist in BIM implementation.

How does it work?

A Building Information Model is a single, intelligent virtual model that satisfies all aspects of the building design process. It is a digital prototype that drives building production rather than a set of drawings; a built-in prototype that acts as a map of the entire computational model by organising all of the live views (plans, sections, elevations, etc), schedules and sheets that have been defined.

It is best practice to use a single BIM model, but some less experienced practices and users split them into sub models to suit limited computation power or varying disciplines within the design team.

The digital management capacity of information models (digital databases) comes into its own when useful data is extracted for real-time generation of bills of materials, scheduling and construction sequencing. The processes of design development and building realisation are very much interrelated. With automatic coordination and collaboration, one can base the logic of the BIM model on actual construction processes or techniques with ease. This technology requires designers to work in new ways and restructure practice accordingly.

In particular, more insight into how to create the building must be deployed early in the design process as it is best if the building assembly is understood in a concrete way. First, the basic geometry of a building is created. Later, subcontractors execute portions of the building. Based upon their proposed solutions, the model develops. All parameters relating to the building are fed into the BIM model by a collaborative effort from the project team

(building owner; designers and constructors), making it an informed 'parametric engine', ultimately enabling it to handle the contradictions posed by project-specific constraints as the scheme evolves.

Focus on design

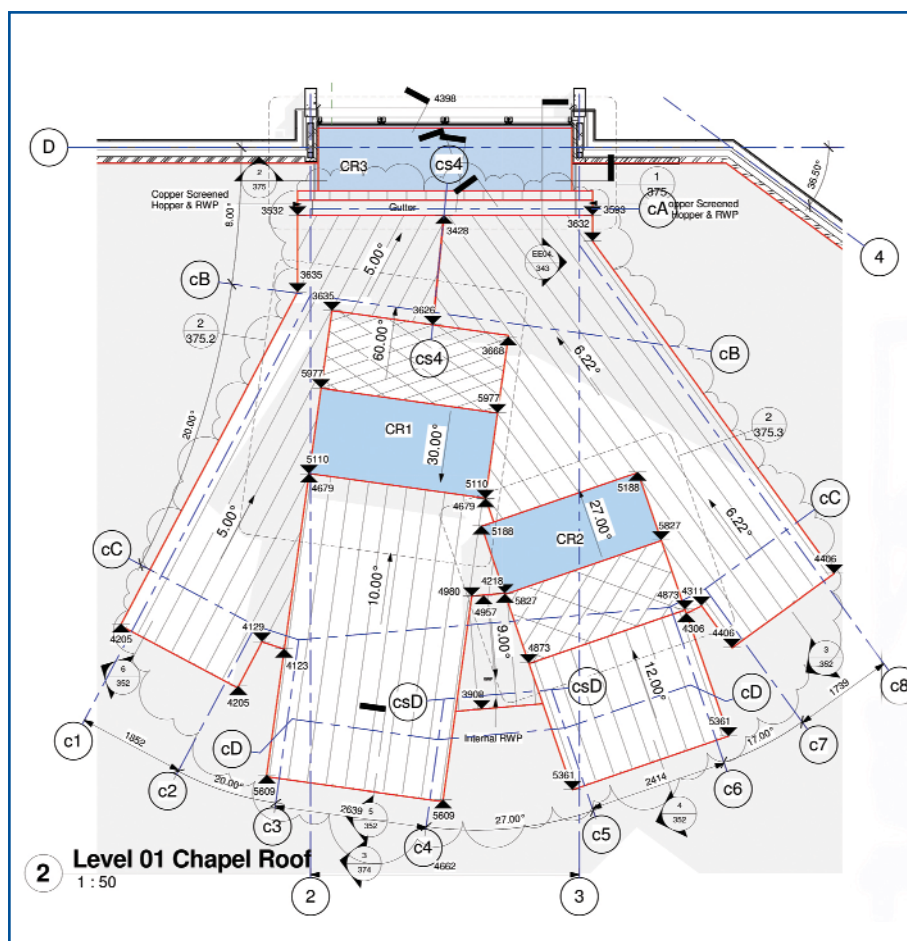
As a design team progresses with a project the BIM model continues to grow and incorporate changes, becoming more data-rich as the process goes along.

The outcome is a complete set of construction documents with greater coordination than previously possible. With this comes a reduction in RFIs (Requests For Information) and change orders, and this eliminates the time spent tracking intricate details. Hence the designers can focus on designing,

as there is no longer a need for them to have to redraw each other's information – as it is already found within a linked or shared model. In fact, the more information that is modelled, the less information is required to be drawn at all.

Architectural draughtsmanship has been part of the designer's presence on site ever since the profession became distinguished from that of the stonemason. Computer Aided Design (CAD) in its nascent form helped eliminate repetitive tasks and increase

**The outcome
is a complete
set of
construction
documents**



Pavilioned in splendour: Salesian Community House Chapel, London SW11 (MSMR Architects)

The BIM system facilitated an array of fully coordinated and engineered external envelope details adaptive to varied conditions and performance

criteria. The setting out of the chapel's complex geometric fabric and structure was streamlined by devising a dynamic grid system and by creating true-sections/elevations within the building information model at grid intersections and critical junctions to formalise the folding plane form.

productivity. That signified a transformation in practice, and a market began to emerge.

Proposals were generally documented as two-dimensional abstractions of a possible building, requiring interpretation from others. With the advent of BIM systems there has been a change from fairly abstract, two-dimensional orthographic projections to three-dimensional parametric models that describe form and drive fabrication. This has enabled an aggressive exploration of new processes and media through experimentation with digital computational tools, architectural prototyping, and most significantly, live building projects.

The BIM system can be used to communicate its results in two ways: visualisations and tabular datasets, which are the product of both 3D components and virtual building systems that promise to retain and resolve every single detail within any design process.

The BIM design paradigm

The opportunities afforded by BIM I refer to as the BIM Design Paradigm. In contrast to the cost saving and waste minimising aspects that are of particular interest to contractors and surveyors, architectural designers and engineers

alike will find the BIM design paradigm most intriguing.

This title emphasises the key ideas of BIM in relation to design, and it nominates a very specific interdisciplinary approach to design that is embedded in technological development and innovation. To successfully engage with BIM requires both software training and thinking that closes the gaps between design, construction operations and management. The development and use of BIM is central to theoretical and

The development and use of BIM is central to theoretical and experimental design

experimental design processes, enabling virtual prototyping and pre-adapted designs as opposed to costly retrofitting.

Gathering information during the design process is crucial. The initial setting up of a Building Information Model can take time and affect the initial stages of a design programme, yet having such a refined data set eventually improves project flow.

With more design information acquired earlier in the project, BIM allows us to more efficiently meet deadlines with less work, through fully coordinated output.

Benefits of BIM

The explorations of the last decade laid the foundations for the adoption of BIM in architectural design. The promotion of a more transparent process of checks and balances through information models would seem to be an important value-adding capacity of BIM. Many buildings realised by BIM have reportedly been delivered ahead of schedule and with no change orders during construction.

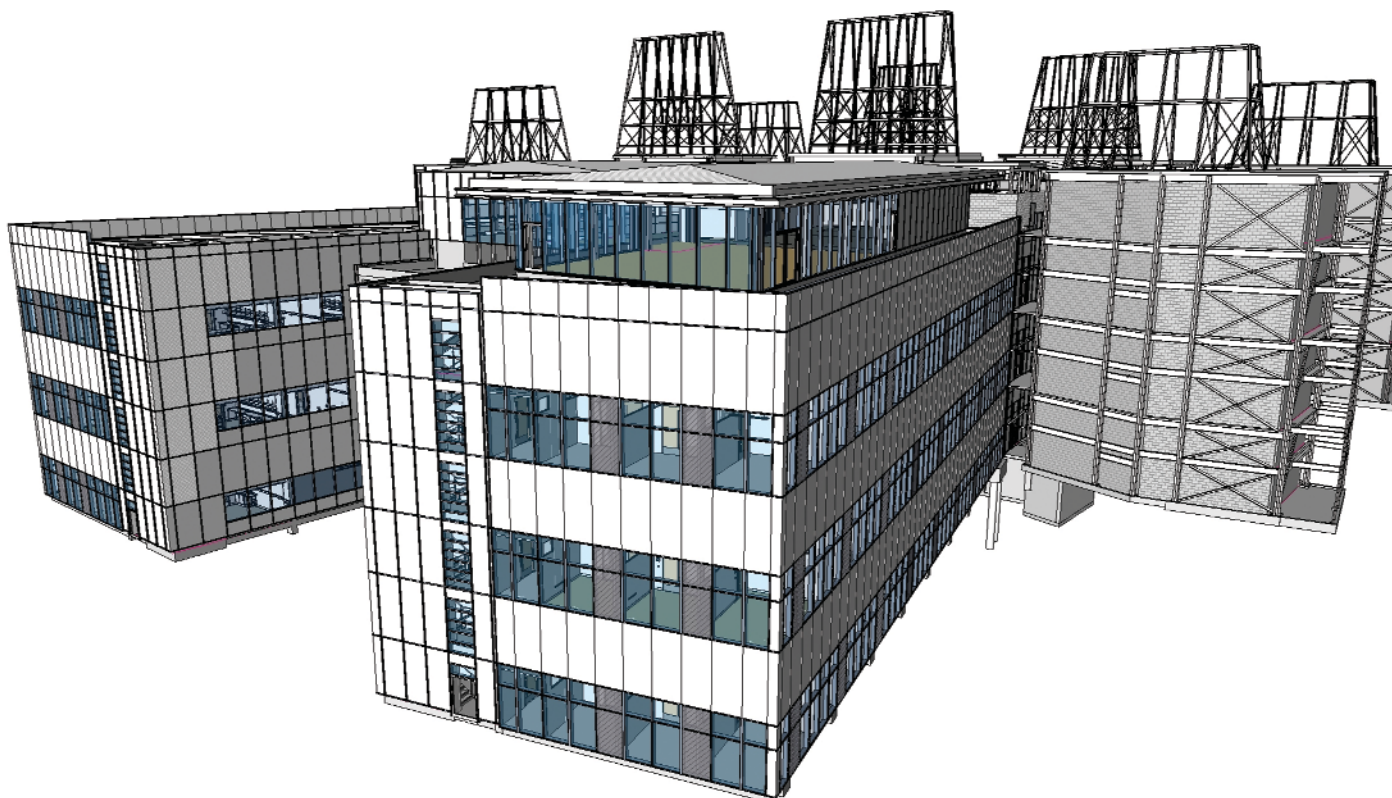
As BIM allows designers to think through construction and assembly virtually, the relationship of design to fabrication becomes much more comprehensive. Computer Numerically Controlled (CNC) fabrication from digital files enables different parts to be cut from materials as economically as standardised parts were machined in the twentieth century. Building information has been translated into environmental analysis software to study performance criteria. Now buildings can be understood according to how they perform, as opposed to what they look like.



Eggheads: St Peter the Apostle High School, Clydebank, West Dunbartonshire (BAM Design)

St Peter the Apostle High School - an integrated building information model enabled the rationalisation of a double curved egg-shaped Oratory propped on stilts at its base, accessible by bridge and projecting through a pitched planar glazed roof on a gently sloped single ply flat roof beyond.

The integrated architectural and structural model enabled the Oratory profile to be plotted to thickness to enable double curved bending to match the overall geometry. The Oratory could not have been realised without the prototypical intervention of parametrics.



Molecular level: Laboratories of Molecular Biology, Cambridge (BAM Design)

The cutting edge BIM system meant the buildings complex systems and internal fittings could be developed in close partnership with the client to meet exacting standards.

The approach delivered effective integration of fixtures, fittings and services. All components from equipment to individual structural elements contain automatically scheduled geometric and material information. Each floor of laboratories contained a services-dedicated suspended upper floor. The building information model reported a material requirement of six miles of dry lining for the entire scheme.

Designers often complain about the rigidity of BIM systems in form generation. It is true to say that models lack fluidity, however they do so with good reason. The models register interference between modelled building systems and components that overlap, intersect, or are duplicated, because mere representation has been superseded by inherent interference-checking tools.

It should be duly noted that BIM systems are only as good as their users. Those who possess advanced skills can deliver projects ahead of schedule and without the need for change orders during construction. Currently we are on the threshold of BIM being used for the life-cycle management of a building well beyond the design and construction process.

The future: a two-speed profession?

Under normal circumstances the kind of fabrication information available in today's Building Information Models would not emerge until after the project has been designed. BIM can therefore improve collaboration.

The simple change of a parameter in a model during a meeting with a structural engineer has the potential to induce a creative dialogue capable of richly informing the design process. There is a need, however, to monitor the relationships between architecture, structural engineering and construction, and to foresee problems that may arise. This can be achieved by defining disciplinary zones within the BIM system to avoid design clashes ie ductwork clashing with steelwork, etc, ultimately giving volumetric ownership to each discipline.

BIM and parametric design protocols exclude those unfamiliar with their technology and terminology but seem routine to those using them. With fee levels dropping, it is conceivable a two-speed profession will develop, and only those who can use current software will survive financially.

The trick is to learn the system from the bottom up, once it is understood it can be formalised. The challenge now lies with the Architectural Technology professional to take on leadership roles within BIM design paradigm.

About the author

Karol Mac Gairbheith has successfully implemented BIM on live construction projects in the UK and abroad over the past 10 years. Speaking of BIM he says 'It has enabled me to deal with design clashes in advance, iron out irregularities in design as I go along, explore repetitive design processes with ease, apply new construction techniques and deliver innovative designs.'

He has converted actual building systems into virtual 3D components that are adaptable over time to enable evolving project requirements to be incorporated without delay.

As Project BIM Leader at NBBJ London his primary function is to manage the process of virtually constructing a building and documenting the design contract accurately. This entails managing a team of multiple disciplines and owning the construction-documents set. He also leads model management and BIM planning, collaboration and coordination.

Research pays off

Could your next project be eligible for a tax break?

Micah Levy of tax advisors Innovation Plus outlines an HMRC relief scheme that offers considerable savings – and how you can claim.

The R&D (Research and Development) Tax Relief scheme is the UK Government's primary method of incentivising innovation. It provides a benefit of up to 32.6% of costs to companies engaged in qualifying R&D. However, government statistics, which break down claims by sector, show that while claims are widespread in pharmaceuticals, manufacturing and software development, few claims are made in architecture despite the innovative nature of much of the architectural work carried out in the UK.

There are perhaps two reasons for this. Firstly, many practices are structured as partnerships of individuals and the R&D Tax Relief scheme only benefits companies subject to UK corporation tax. While there is anecdotal evidence that a few practices are changing from LLPs to Limited Companies to take advantage of the scheme, this does not appear widespread.

Secondly, many architectural practices, however innovative, do not realise that the tax definition of what can qualify as R&D is very broad and that expert help is available to take them through the process, from structuring their claim, to preparing the supporting documentation and agreeing the claim with HMRC.

The key test over whether or not a project will qualify as R&D for tax purposes is a technology test, which, broadly, looks for the project to be seeking an advance in the state of technology knowledge available, through the resolution of technological uncertainty. This will cover many

projects and work stages that are carried out by architecture practices on a daily basis, solving difficult technology challenges, but which are often considered as day-to-day normal work.

Innovation Plus is a specialist R&D tax boutique that has assisted many firms in successfully claiming for a large number of varied Architectural Technology projects including disability adaptation retrofits, hospital ward design and the design of improved sustainability buildings.

Our R&D tax claim methodology for architecture practices includes the mapping of RIBA project stages onto a claim process that allows the quantification of qualifying projects using existing data that most practices already track.

I talked to Justin Bere and Thomas Bryans of Bere Architects, who successfully claimed under the scheme.

As an architectural practice, where do you see the importance of R&D?

R&D is fundamental to our practice as we push beyond the norm in terms of environmental design and sustainability of buildings that are far more energy efficient than normal in the UK. We are building on ideas that have been developed on the continent but which have not traditionally been applied in the UK. This requires a large investment on our part and it's reassuring to know this is valued by the government.



Few claims are made in architecture despite the innovative nature of much of the work

What are your thoughts about the government incentivising architecture in this way?

It's interesting as architecture is typically perceived as a very traditional discipline that has historically changed very slowly other than at very specific times. We are now at one of those junctures where the emphasis today is on buildings being delivered in a much more sustainable way than before, as part of a low-carbon economy, which is a driver for real innovation.

Do you think that many other architectural practices also face the same types of technology challenges around sustainability?

While there are certain elements that can be standardised in architectural practices, there will also always be factors that give rise to technology challenges either because of the site or other environmental factors. One such example is thermal performance which is highly variable in both retrofits and new builds. For example, we focus very strongly in Passive House design which is very strongly influenced by the climate of the site location, so for example, the solutions we need for the hills of Wales are very different to Central London, Manchester or Cornwall.

As a result of this we see technological uncertainty – which is a key requirement of the R&D tax relief scheme – occurring even as a result of the physical location and therefore applicable to many other practices as well.

Had you previously heard about the R&D Tax relief scheme before claiming?

We had heard of the R&D Tax Relief Scheme previously but we are a very busy practice, so we just didn't get round to applying. Also, even though we put a lot of effort into R&D work, we thought that form-filling could absorb a lot of time and might be wasted time. We needed help in making an application, which is why the offer of support from Innovation Plus was so attractive. Since claiming, we've had conversations with others about the scheme but most architects I've encountered are completely unaware of how to go about making a claim and I think that it's probably quite unusual to claim.

How did you find the process?

It wasn't disruptive at all. We were able to give you our pre-existing data from our time recording system, supply you with the necessary technical information

and you did it all for us. It all went very smoothly from our perspective. Since all the difficult work was handled by Innovation Plus for us, we don't think it could have gone better.

As a practice, where do you see the benefits of the R&D scheme going?

It significantly reduces our cost base for R&D which means that we can afford to carry out some marginal R&D-intensive projects that we would not be able to otherwise.

For instance, we were recently looking at a very unusual retrofit that had limited commercial benefit to our practice but because of its nature would allow some very valuable research to take place in key areas. Previously, although we would have liked to gain the knowledge, we probably wouldn't have been able to afford to take on a project like this but knowing that we will be able to claim R&D tax credits for this means that it will now be commercially viable as well.

Lastly, what do you see as the key areas of R&D for Architectural Technology professionals?

I think that this is potentially a real game-changer for them. Architecture is often considered as primarily a creative sector and advancing technical expertise may be less interesting and less attractive than producing beautiful images – that's because what wins work is more often than not the visual images.

But we all know that what the country really needs is better buildings that last longer and cost less to build and are much cleaner and cheaper to run. If the R&D benefits of Architectural Technology are recognised by the scheme, then this will encourage the much better buildings that the UK needs.

Innovation Plus: www.inplus.co.uk
email info@inplus.co.uk

HMRC: www.hmrc.gov.uk/ct/forms-rates/claims/randd.htm



Has conservation come of age?

Paul Travis MCIAT, Chartered Architectural Technologist and CIAT-Accredited Conservationist gives a personal view of changes in architectural conservation.



Astley Castle in Warwickshire: Witherford Watson Mann were awarded the 2013 Stirling Prize for its restoration. © Landmark Trust

Over the past half decade, there has been a gradual increase in the way the public and the profession have perceived historic buildings and the success of their conservation and adaptation. The work at London St Pancras station and many other flagship projects have been well received and reinforced the concept that it is possible to breathe new life into these spaces without unnecessarily compromising their significance.

The award of last year's Stirling Prize to Astley Castle in Warwickshire, a ruin converted into a guest house (the regeneration of Sheffield's 1960s Park Hill estate was also on the shortlist) suggests that the built environment profession is now content to regard works to existing historic buildings as worthy of review as architectural spaces of quality with excellent design, that can confidently stand shoulder to shoulder with the 'blank sheet' design of new build.

Similarly, clients are becoming more conducive to having their businesses within historic buildings, with companies such as Pizza Express and Zara having embraced this concept.

If architectural conservation is emerging from its mantle of architecture's poor relation, what does this mean for Architectural Technology professionals, and how can the profession make more of an impact?

In many ways, the reintegration of an existing architectural form requires more imagination from the design team in order to square the circle of creating quality spaces that sit well within their environments without compromising the original building's values. This requires more rigorous concepts, founded on qualitative research and thoughtful detailing than new buildings, where gaps in thinking are often left to the Architectural Technology professional or the contractor to resolve.

Architectural conservation as we know it today is still in its relative infancy, but in this country has grown from the humble beginnings of Ruskin and Morris in the late nineteenth century to become an ever increasing factor in how we regard the edifices of the past, and how we might seek to repair and amend them.

Britain contains over half a million listed buildings, and thousands of conservation areas where development

and modification are strictly controlled, a potentially huge market for the construction profession ..

Britain's cathedrals, castles and palaces now enjoy the care of a retinue of conservation experts policed by the statutory authorities and fabric committees, and there is an ever increasing emphasis on the considered development of the more humble, yet still significant stock of less grandiose structures. Statistically, the odds of completing a career within Architectural Technology and not coming into contact with a 'heritage asset' must be long indeed, and raises the question, can we afford to ignore this potential market?

There is a strong argument to be made that architectural conservation is a natural environment for practising AT professionals, and possibly even that they are better suited to the discipline than the architect, the current de facto specialist in the field.

The AT professional has a good understanding of the properties of materials and the detailing of building elements, and has much in common with the conservator in evaluating how the existing environment is assessed,

and in reviewing the evidence and environment in order to 'manage the change' rather than 'change the existing'.

To date, Architectural Technology professionals have had little opportunity to capitalise on this asset in their skillset to better effect and claim a bigger market share. This is partly attributable to the idea that technology must, by definition, refer to the materials and techniques of contemporary architectural design, whereas the technology of traditional materials and building systems has equal validity, especially in an age where the materials used to create historic buildings have demonstrated their sustainable credentials, and are capable of being used in many contemporary conditions. Since knowledge of architectural history, building typology and stylistic development are not the monopoly of any profession, it is clear that the AT professional has as much potential to understand and investigate these resources as anyone else.

The sensitive adaptation of historic buildings to better suit the compliances of the modern age is one of the most important issues facing designers and specifiers today. Who better to make

their contribution in this field than a professional with an understanding of historic building materials and techniques, and the ability to analyse and review of building environments?

How can the skill bases of the AT professional be better publicised and utilised within the architectural conservation sector? Firstly, the numerical disadvantage of conservation-aware members needs to be addressed to demonstrate that there are plenty of

Britain contains over half a million listed buildings

accomplished, experienced practitioners throughout the country, willing and capable of tackling any of the issues found in the field. This can be started at higher education level with some training in historic building techniques, and including some elements of traditional materials and their properties.

This can be developed further by demonstrating to the Society for the Protection of Ancient Buildings SPAB that members should be accepted as

Lethaby Scholars, and in making contributions to the excellent work of the Institute of Conservation (ICON). The number of Accredited Conservationists is still incredibly small as a proportion of Chartered Membership, and this number could increase markedly as a result of the concerted adoption of some of these measures.

Raising the profile of conservation within the Institute has already started with regular conservation features within this magazine. Demonstrating successful case studies and publishing more abstract articles to encourage debate can only help people develop a greater interest in this industry sector. The introduction of a CIAT Conservation Award might also help tempt both students and professionals into publicising their work to the Institute, and a wider audience.

Once members demonstrate that we are as conversant in the philosophies and techniques of conservation as architects purport to be, it can only be a matter of time until all the major custodians of our built heritage appoint us with the same confidence as the appointment of architects and surveyors, and we can claim a section of the industry that should be a mainstay of our profession.



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)

A bird's eye view

Michael Freeman was Commended in the 2013 Student Award for Excellence in Architectural Technology (Report) for his research into digital recording of historic buildings. In this article he looks at methods of digitally preserving at-risk buildings, focusing on historic Scottish dovecotes.

Introduction

Dovecotes (also known as Dovecotes) are historic buildings used to house doves, located all over the Aberdeenshire area as well as other parts of the United Kingdom. These may vary in shape and size depending on when they were built (Buxbaum, 1987:3). They are commonly found near castles but can also be located in remote places. There is very little documentation on these buildings, many of which are under serious threat of becoming ruins (BARR, 2012). The main reason for this is that there is little use for these buildings in modern society due to their form and size.

This project is about the different ways of which this information may be gathered and stored in a digital format but also the importance of managing to do this before that information is lost. The main techniques looked at are laser scanning and photogrammetry – and the accuracy of each of these. By comparing these techniques to the more traditional approach, this article will examine if it is beneficial in saving time and how accurate the information is. In particular, new photogrammetry modelling software by Autodesk called '3D Catch' will be examined.

Creating 3D models of historical buildings is quite often required during the documentation of national heritage sites. This is for tourism purposes but it can also be used to provide information for students and researchers (Alshawabkeh, 2012). Different approaches can be taken to achieve high or low accuracy results depending on the usage of materials. Gathering the information on the large variety of dovecotes would be of benefit to help understand why they were built and the reasoning behind the different styles. Dovecotes are a great exemplar due to their large variety of shapes, as well as

being of a manageable size for modelling.

Methodology

In the past, photogrammetry has, arguably, been a low cost method of gathering data. Improvement in digital recording equipment over the past few years has had a positive effect on the method of gathering this data and processing into three-dimensional objects (Alshawabkeh, 2012).

The data collection was done with an SLR digital camera which can be bought from the high street (Nikon D3100). The photogrammetry method required the taking of numerous photos of dovecotes located throughout the Aberdeenshire area. Autodesk 123D was used to process the data.

The dovecotes which were chosen during the case studies are listed below, together with the reason for choosing them.

Blairs College – Category B listed and currently 'At Risk' (BARR, 2012).

Kirkton House Dovecot – Contained an irregular shape compared to others researched in regards to height.

Grandhome Dovecot – No Documentation found on this dovecote on current condition. Last documentation online dated back to 1997.

Auchmacoy Dovecot – Research done by Brown, et al (2009) provided data gathered with a laser scanner on Auchmacoy Dovecot which can be compared in regards to accuracy of the two methods.

Disblair House Dovecot – Contained complexities in the structure such as deterioration in walls and roof of which

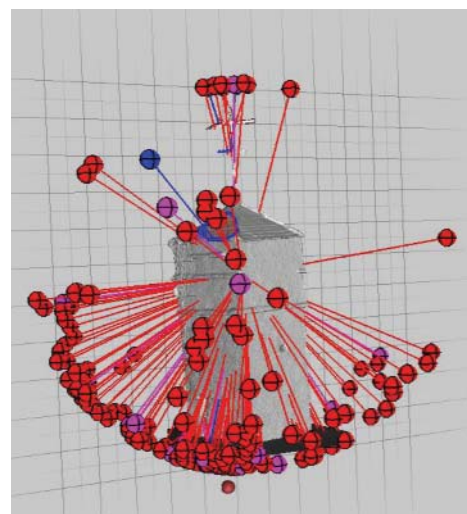


Figure 1: Meshmixer inspector check on Kirkton House dovecote

were in a very poor condition. It was in a 'Critical' Category at risk (BARR, 2012).

The accuracy was compared to that of a Leica Laser scanner which has been known for high accuracy results up to fifty metres. The comparison of results was taken from the research done by Brown, et al (2009) where accurate point cloud models were created.

Digital recording of heritage sites

Photogrammetry is a method by which information is gathered on physical objects through the process of recording, measuring and interpreting photographic images. It works by overlapping images and is has been successfully adopted in many reconstruction projects (Xiao and Zhan, 2007:5971). The overlapping photographs have identical features which create 3D data which can then be used to acquire accurate measurements (Counsell, 2000:38). The only things involved in photogrammetry are

photographs and mathematical equations (Yilmaz et al., 2007).

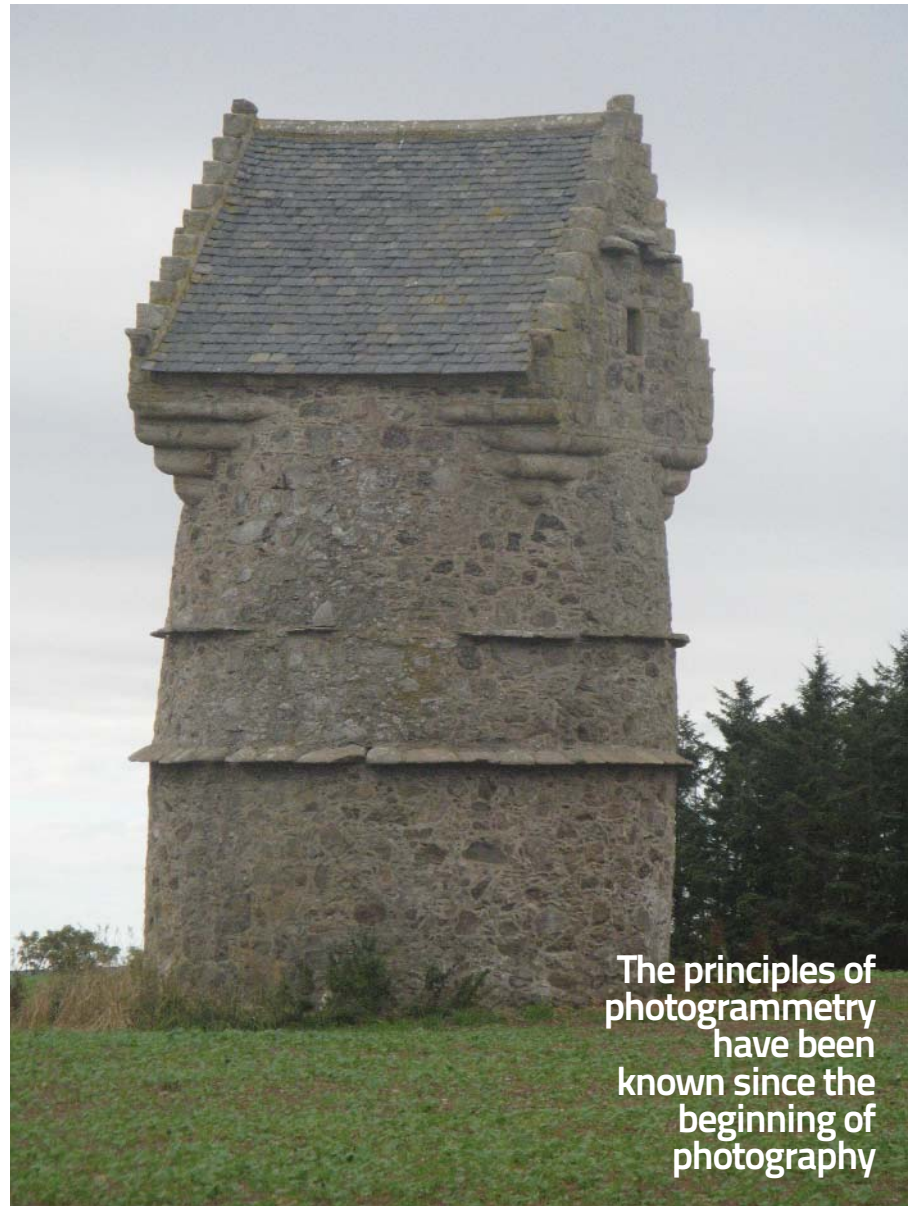
To create a three dimensional model using 2D photographs, a minimum of two projections are needed to determine the objects true shape and size (Stojaković, 2008:113). The technology has been around for a long time and the principles of close range photogrammetry have been known since the beginning of photography (Mangold, 2005). However, the level of accuracy, speed and ease of use of which is now available in the modern era would have been unthinkable until the recent advances in computerisation and digital photography. (Mangold, 2005).

Using photogrammetry is beneficial in numerous ways compared to the traditional techniques. In many ways, the traditional methods relied heavily on construction documentation of which does not exist in many cases. Whether it is available or not, it requires a lot of staff putting in long hours to gather all the data as well as a costly method (Stojaković, 2008:114). Photogrammetry is quicker as well as more accurate regarding the complexity of a building or object than previous techniques.

Some of the benefits include:

1. The image collection may be used for future use or records purposes.
2. The object (of which in this case is the doocot) requires no physical contact when the data is being collected therefore not damaging the existing structure.
3. It is in many ways easier to gather information of complex shapes and put into a 3D format which speeds up the process compared to other methods.
4. The data which is gathered may be presented in many formats such as line drawings in CAD or possibly in a 3D format on one of the other Autodesk software such as 3D Max.
5. The photos allow the user to gather as much or as little information they require therefore detailing could be very accurate if needed (Anon. [1], 2012).

There are two types of methods in photogrammetry. These are terrestrial and aerial. Terrestrial photogrammetry is the method on which photos are taken of the object from ground level and would generally not represent any form of terrain. If an airplane or satellite shows terrain then this is aerial (Stojaković, 2008:114).



The principles of photogrammetry have been known since the beginning of photography

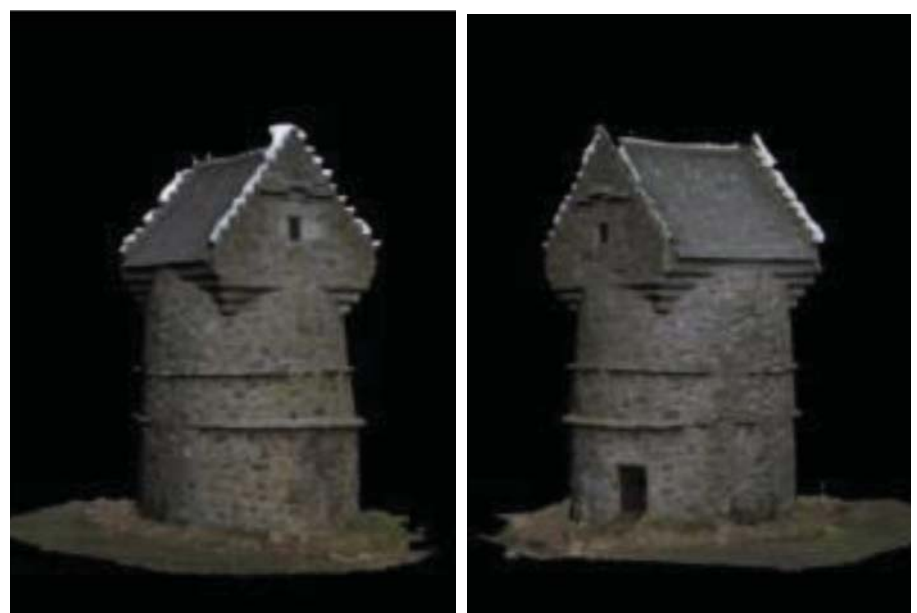


Figure 2: Auchmacoy doocot (above) with 3D model below.

Laser Scanning or Photogrammetry?

Laser scanning has been known to be a reliable method which is commonly used. However, it does have its downfalls. Laser scanning can also be classified in two different categories of which both have different levels of accuracy (Yastikli, 2007).

The two primary types of Terrestrial Laser Scanning (TLS) are; the short-range devices with which the range is in metres (these are based on triangulation) and Time of Flight (TOF) laser scanners. Triangulation scanners are based on the triangulation method. The transmitting device sends a laser beam on the surface of the object and the CCD camera detects the laser beam at the other end of the base. A 3D coordinate of laser beam on the object surface is obtained from the resulting triangle.

There may be two CCD cameras used on each of the bases, known as the double camera solution. This is done to improve accuracy (Yastikli, 2007:424). The TOF method measures the distance between the laser and the object by the measurement of the time of light of the laser pulse between transmitting and receiving (Yastikli, 2007:424). These are long range, which can gather data between hundreds of metres and up to four kilometres, and this is also the most popular and heavily used system (Lubowiecka, 2009) and (Yastikli,

2007:424). Accuracy varies within a few micrometres for the triangulation approach, to a few millimetres for the TOF method (Fröhlich, 2004) and (Yastikli, 2007).

Photogrammetry is a quicker method and more efficient in the sense of cost and resources. A great advantage is that photogrammetry is now feasible with on-the-shelf cameras for the digital image collection (Alshawabkeh, 2012). However, it also has its obstacles. The data processing can be fairly long and complex to develop an accurate model (Quintero, 1999). The data processing through software such as 123D Catch, requires time and significant computer processing, which requires a certain level of skill.

Adding minimal images can cause large inaccuracies in the model whereas adding too many images can cause the process to fail. A balance needs to be achieved. However, some of the disadvantages of computer processing have been overcome by adding a cloud server which uploads models online.

Photogrammetry however is very useful in preparing drawings which can be used by designers on a reconstruction project for example. Some of the detail which is picked up by close-range photogrammetry includes material decay. In a case study by Yilmaz et al (2007), the process of photogrammetry was used on a building located in

Konya, Turkey, where drawings were then obtained from Photomodeler software which contained measurements which the architects could use for a reconstruction project (Yilmaz et al, 2007).

Over the past 15-20 years it has become more and more popular in recording information from buildings under conservation and restoration. This is arguably due to the cost of high end laser scanners which may be too high for SMEs.

Even though current laser scanners produce dense information along the same surfaces, the data can in fact be insufficient if small occurrences in the wall surfaces such as cracks, edges and linear surface features have to be collected and analysed. On the other hand, digital photogrammetry can be more accurate if these details have been measured and analysed (Al-Kheder, 2009) and Alshawabkeh, 2012.)

Photogrammetry is useful in that photorealistic texturing can be obtained and placed on the 3D model. This provides information on the object's condition, such as the decay of material, which may not be visible on the 3D model (Al-Kheder, 2009). It also does not require the setting up and dismantling of the complete laser system, during which problems can occur and which can be relatively time consuming (Alshawabkeh, 2012). In contrast to that, the process of capturing additional images with a standard digital camera for the photogrammetric method can almost be neglected.

However, according to Alshawabkeh (2012), to achieve the highest possible degree of flexibility and efficiency of data collection, using both methods of Laser scanning and photogrammetry is recommended. Small features such as edges and cracks would be based on the analysis of the images whereas information on object geometry is provided from the laser scanner data. Areas of which would not be accessible in the laser scanner data due to obstructions are added after semiautomatic evaluation of the imagery. This means that a complete 3D model can be generated with sufficient and clear details.

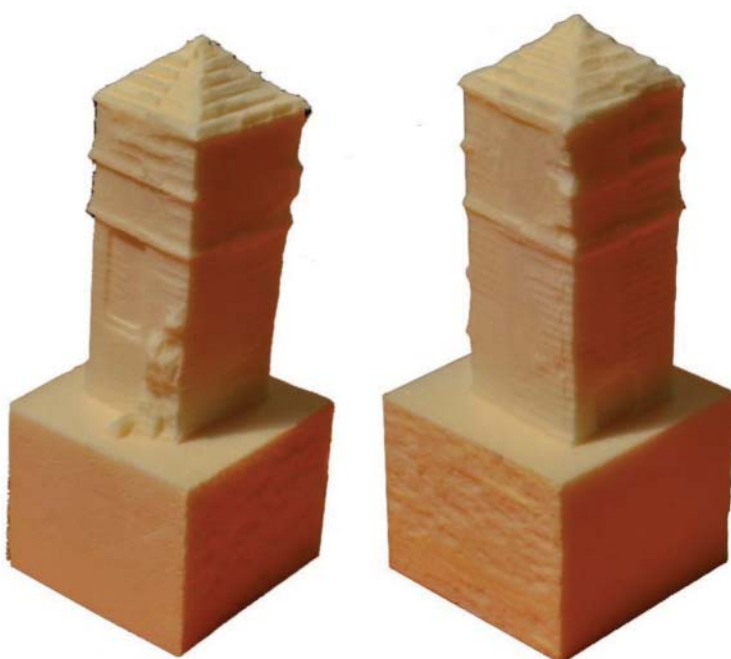


Figure 3: Model created using 3D Studiomill

Improvements in accuracy of photogrammetry

When looking at high end laser scanners, the most reliable, accurate and fast ones can cost c£100,000. (Quintero, 1999:2). Compared to the cost of a SLR camera there is a considerable difference. Because of the cost difference, the accuracy of the laser scanner would be expected to produce a more accurate model. However, an accurate model needs to be defined as what the researcher requires. According to Radford (1997:683), these interpretations of accuracy can be summarised in a few key points:

- Accuracy of location, geometry and form
- Accuracy of colour and texture
- Accuracy of lighting
- Accuracy of urban and natural context, how transparent is the object in its context

To obtain an accurate model, all depends on the quality of calibration. By this, as the focal length of the image gets shorter, the distortion of the images is increased. These distortions decrease model accuracy which means that to achieve a high quality model, the calibration of the camera used must be precise (Stojaković, 2008:115). Calibrating the camera correctly will more than likely increase the accuracy of the model. Understanding what decreases the quality of the images in photography is vital if an accurate three dimensional model is to be created, therefore a basic understanding of photography is required.

ISO (sensitivity of the camera to light) for example creates visual noise; the higher the ISO the brighter the image. Slowing down the shutter speed will also increase the lighting on the photograph but creates blur if a tripod is not used. Finding the correct balance between all the factors associated with photography is required for an accurate model.

Both of the case studies were compared with the point cloud model created with the laser scanner. Measuring the distance between known points gave the final results however human error on where these points were taken from needs to be taken into account. There were many factors which improved the accuracy of the final model such as the camera used during the case studies as well as a general understanding of 123D Catch, Meshmixer and 3DS Max.

The process used is very simple. For the case studies, around three hundred photos were taken of which only 70-80 were used in the final model. These images were taken in stages around the building until a full 360 degree image of the building was achieved. All images in the case studies were taken on manual mode. This gives a lot more freedom in terms of exposure, shutter speed and ISO which all have an effect on the end result. These images were then uploaded onto a cloud server and a 3D model was returned (as a point cloud).

The model once imported, if containing no errors, can then be scaled as required. Once the picture is selected, you will be allowed to create reference points. Once two reference points have been selected, the real distance can be manually entered.

After a model has been created, it can then be adjusted by fixing errors in the surfaces which then can be placed into a 3D printing machine. Autodesk Meshmixer is a suitable program for this. To be viable for 3D printing, the virtual model has to contain a solid rather than hollow core to prevent it being too thin. Using Kirkton House doocot as an example, once uploaded into 3D printing software, a check can be done to find all the errors in the mesh. Results of Kirkton can be seen in figure 1 (page 16) where the red circles mean an error in the mesh. It is also important that the base of the model is completely flat.

The model can then be exported as an .stl file, suitable for the Studiomill 5 axis 3D CNC Machine of which was used for this test. The material used for the printing process was polyfoam c.50mm in thickness.

Case study: Auchmacoy Doocot

Auchmacoy doocot is located in Aberdeenshire on the outskirts of Ellon. It is known as the 'Finest doocot in Aberdeen County' (RCAHMS, 2012) and dates from 1638 (SSD list 1960). On site, it was clear to see the doocot was in a good state and the roof seemed to have been redone in the recent years. The main walls were in good condition.

For gathering the photos, there was no obstruction which could have hindered the photography. It was located in the centre of a field far enough from the edges that full 360 degree walks were

possible around the object. The doocot was quite tall meaning that photos from further away were required. This was to make sure the roof surface and texture was visible. There was no direct sunlight on the day, which is beneficial as direct light can create problems with reflective surfaces when modelling

On site, two full circles of photos around the doocot were taken of which the first one was at a rough distance of 10 metres away and the second time was 15-20 metres away. When it came to putting the images together for modelling, 70-80 images were used for the first model with the ten-metre images used.

Measurements with a Leica Laser Distancemeter were also taken on site of the door width as well as heights between the two rat-courses and between the lower rat course and roof. These would then be used to scale the model once created. Only one distance however is needed to scale the model once in a 3D format. This was one of the doocots which was researched by Brown et al and a model was created using the laser scanner. Therefore measurements can be compared between the two different methods, photogrammetry and laser scanning.

Results

The 3D model came up with no errors once all the photos had been placed. All images managed to automatically stitch together which saved a lot of time.



Figure 4: 3D printed model of Auchmacoy doocot

It was noticeable, as with the previous results that the roof ridge never stitches together evenly without any errors. The only way of fixing this is to take photos of it at a higher height with a ladder. However programs are also available which will fix any of the holes in the model such as Autodesk Meshmixer with one click. The 3D model of Auchmacoy doocot can be viewed in figure 2.

The measurements of the photogrammetric doocot model were compared with that of the Leica HDS 3000 Laser Scanner once put to a 1:1 scale. The distances were taken from the same part of the doocot. They are as shown in figure 5 below.

Due to doocots being irregular containing few flat surfaces the same distance apart, errors may have occurred. The accuracy of 123D is up to 10mm which can also be seen from the results. Comparing these results to those of other doocots, it is clear to see the accuracy is much greater. Overall, the photogrammetry method used compares well to the accuracy of the HD Laser Scanner used on this project.

Digitisation to re-building

The results of the 3D mill were somewhat unsatisfactory. Much of the detail in the walls was lost as well as slate detailing and some pigeon entrances which can be seen in figure 3. The spire on the top of the doocot was also removed during laser cutting. This was due to it being too thin. However, creating a larger scaled model or using a more accurate 3D printing machine would have resolved the majority of these issues.

The accuracy of the output model for the 3D mill was not high in comparison to the input model. A 3D printer was available which was able to produce a more accurate model in comparison to the 3D mill. To test this, a model of Auchmacoy Doocot was created. Using the same process to create the STL file for the 3D Mill, a model using the 3D printer was possible. The results were more satisfactory. However, due to the

limitation in printer size, the top part of the doocot's roof failed to print. Another error also occurred which made the doocot taller than its input size, which was the main reason for the prevention of the roof printing.

Conclusion

Looking at different doocots around the north-east of Scotland tested all the flaws in this method of recording data. Every doocot produced a different issue. These included:

- Height issues
- Obstructions on site
- Deterioration of main structure
- Attachment to other buildings
- Weather conditions

Comparing laser scanning to photogrammetry, it was clear to see that photogrammetry had its pros and cons in regards to what can be achieved. For example, photogrammetry is beneficial in the sense that texture maps can be gathered and placed onto the 3D mesh giving a good understanding of the current building condition, such as material deterioration, as well as demonstrating how lighting hits the wall surface, which it is not possible to achieve on the majority of laser scanners.

However, laser scanning has been known to be an accurate method. Combining the two methods would be the best way to produce a 3D model as the majority of problems which occur with one method could be covered and fixed the other.

As previously stated, the detail from smaller features such as edges and cracks can be recorded using image analysis whereas the information on object geometry can be provided from the laser scanner data.

This type of digital recording can eventually lead to creating a physical replica of a three-dimensional model. The reason for analysing photogrammetry was to understand whether an object with complex detailing could be digitally recorded then printed as accurately as the original object.

Overall the research for this article provided an insight into the possibility of photogrammetry and its usefulness with regards to historic structures and artefacts and recording, analysing and creating three-dimensional models. This may eventually be used on a larger scale to replicate parts of buildings, for example complex corning on a Victorian ceiling.

References

- Al-kheder, S (2009) *Developing a documentation system for desert places in Jordan using 3D laser scanning and digital photogrammetry*, Jordan, The Hashemite University
- Alshawabkeh, Y and Haala, N (Unknown) *Integration of Digital Photogrammetry and Laser Scanning for Heritage Documentation*, Germany, Institute for Photogrammetry
- Brown, N and Laing, R and Scott J (2009) *The Doocots of Aberdeenshire: An application of 3D Scanning Technology in the Built Heritage*, Aberdeen, Robert Gordon University
- Buxbaum, T (1987) *Scottish Doocots*, England, Shire Publications Ltd
- Brunskill, R.W. (1982) *Traditional Farm Buildings of Britain*, London, Victor Gollancz Ltd
- Counsell, J (2000) *An Evolutionary Approach to Digital Recording and Information About Heritage Sites*, Bristol, University of the West of England
- Hardwick, S (2009) *Restoration through Agri-Environment Schemes*, England, IHBC
- Quintero, M (1999) *Accuracy in Affordable Technology for Three-Dimensional Documentation and Representation of Built Heritage*, Germany, Aachen University
- Stojaković, V (2008) *Terrestrial Photogrammetry and Application to Modeling Architectural Objects*, Serbia, University of Novi Sad
- Xiao, Y and Zhan, Q (2007) *3D Data Acquisition by Terrestrial Laser Scanning for Protection of Historical Buildings*, China, Wuhan University
- Yastikli, N (2007) *Documentation of Cultural Heritage Using Digital Photogrammetry and Laser Scanning*, Turkey, Yildiz Technical University
- Yilmaz, H.M. and Yakar, M (2007) *Importance of Digital Close-Range Photogrammetry in Documentation of Cultural Heritage*, Elsevier Masson SAS
- Online**
- British Listed Buildings (Unknown). Blairs College – Doocot, Maryculter : www.britishlistedbuildings.co.uk/sc-16482-blairs-college-doocot-maryculter
- Brown, N (2005) Foo's Yer Doos – Aye Pickin? www.leopardmag.co.uk/foo-s-yer-dooos-aye-pickin_files/masthead.png
- Curtaz, M (Unknown). Terrestrial Photogrammetry www.permanet-space.eu/archive/pdf/WP6_1_tp.pdf
- IHBC (Unknown). Photogrammetry in Architecture http://ihbc.org.uk/context_archive/27/photogrammetry.htm
- Leica Geosystems (2012) Leica HDS3000 <http://hds.leica-geosystems.com/en/5574.htm>
- Muir Group (2012). Regeneration and Renewal of Blairs College www.blairsmuseum.com/BlairsCollegeDevelopmentProposal.pdf
- Scotsites. (2007-11). Historic Buildings in Scotland – Doocots. www.scotsites.co.uk/historicbuildings/doocots.htm
- Spatial Resources (2005) Close Range Photogrammetry Creates Accurate As-Built Survey of Cell Antennas www.spatialresources.com/id73.html

Figure 5: comparison table

Figure 5: comparison table	Leica HDS 3000	123D
Top window above door width	328 mm	330 mm
Top window above door height	420 mm	410 mm
Skew (RHS) on door side	171 mm	180 mm
Door Width	645 mm	640 mm

A special place

Daniel Owen of Anglia Ruskin University was commended in the 2013 Student Award for Excellence in Architectural Technology (Project) for his design for a disabled childrens' centre in Norwich.



The project is located on a former church site in Norwich. The church suffered an arson attack in 2006 and the site is currently occupied by the Norwich Family Life Nursery in temporary mobile classrooms. The proposed scheme for an Educational Day Centre for children with special educational needs aims to revitalise the site, re-generating it with a visually inspiring, sustainable and energy efficient building.

A key concept of public and private spaces runs throughout the project. This is reflected within the linear form of the building, creating a clear divide between the public car park and private play spaces to the rear. The building form acts as a 'dividing wall' between these spaces, providing safety and security. The orientation and form of the building has been carefully considered to maximise solar gain, natural light and natural passive ventilation, reducing running costs. The shallow plan depth of the building encourages natural cross ventilation, whilst the height of the internal space encourages natural stack ventilation through the roof vents.

The building layout has been designed so that rooms that require high levels of heating (i.e. Hydro-therapy Pool) are located on the solar orientated face of the building to maximise solar gain and reduce energy costs.

The requirement for thermal comfort and energy efficiency involved high levels of thermal mass. Hempcrete was chosen due to its ability to regulate the internal temperature as well as its hygroscopic properties regulating humidity. The principle structure for the building consists of a timber skeletal frame of Douglas fir, with simple bolted flitch plate connections enabling it to be easily dismantled at the end of its service life. Douglas fir was chosen for life cycle cost and durability.

Timber has been used throughout the design as opposed to steel or concrete due to its sustainability, durability and acoustic properties. Timber also has a very low thermal conductivity compared to concrete or steel, which will contribute to the thermal performance of the building whilst minimising the risk of interstitial condensation.

The roof of the building has been designed with a zinc standing seam roof finish; a natural material, 100% recyclable and its lightweight properties reduce the size of the structural members, saving on material costs. Zinc was also chosen to clad the children's window seat 'boxes' which are a prominent feature of the design. Pre-fabricated Hempcrete panels installed between the principle structure creates a watertight building envelope and fast tracks the construction programme, allowing for first fix of services to begin inside whilst the external envelope is completed.

A surface water retention pond and storm water planters help with surface water attenuation, whilst re-generating the bio-diversity of the site; creating natural habitats as learning environments for the children. The incorporation of a reed bed drainage system further enhances the bio-diversity of the site. Although many parts of the project are not particularly innovative, it results in a simple build whereby realistic schedules can be applied and achieved.

Roofing

English Heritage Practical Building Conservation series

It could be argued that the development of a roof is the primary developments in building technology. The roof covers a space underneath and provides protection and shelter for its occupants, be it storage, habitation or ceremony, and like many building elements, has been the subject of a number of changes in design, technique and material, with varying degrees of success. The roof is the element which takes whatever forces nature has to impress upon it, and defects in it are catalysts for further deterioration of building fabric and contents.

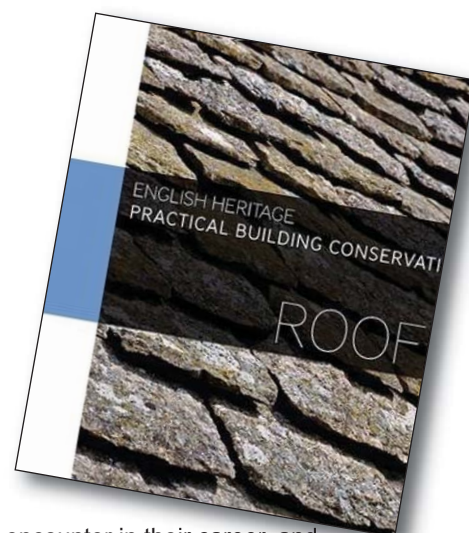
The latest volume of English Heritage's Practical Building Conservation series is another entirely new volume and dedicated to the roof coverings most commonly encountered on historic buildings, from thatch to asphalt.

The format of the book is very similar to the others in the series: the history and development of roofing materials and techniques are described, sections on the

main deterioration mechanisms and assessment, followed by a chapter on repairs and maintenance. The second section of the volume address each of the main materials, their manufacture, and a description of the techniques involved in each particular roof covering.

The main decay mechanisms and symptoms of defects of each material are reviewed and set out in clear photographs and diagrams. Each chapter ends, as always, with a bibliography to offer additional pathways of research. The book assess only the coverings of roofs, and does not discuss the roof structures since these have been already been covered in previous volumes such as timber, glass, and metals, and are better suited there, since this is a weighty volume in its own right.

This massive volume's bold brief was to provide guidance on the main materials, their decay mechanisms, and possible remedies for the roof coverings that the historic building professional is likely to



encounter in their career, and help to explain how best to identify what is significant about a roof, and how to weigh that against maintaining its functionality. Although one could argue that a volume twice the size could not achieve this, this work is an essential part of the conservation professional's and student's resources.

Volume Editors: Wood, C., Henry, A.
Series Editors: Martin, B., Wood, C.
Ashgate Publishing, Farnham, 2013
ISBN 13: 9780754645566
617 Pages: £65.00

Review by Paul Travis MCIAT

Staircases: history, repair and conservation

The development of the staircase as an architectural element must be regarded as one of the most important developments in architecture. The stair gives the building user an opportunity to use space previously regarded as air, defying gravity, and maximising the space determined by the plot size. Throughout history their use has ranged from the simple functional circulation feature to statements of power and status. As the main traffic areas of circulation, the staircase remains an important element in the design and construction of buildings, and one in which style must not supersede safety.

A companion piece to Routledge's earlier publication, *Windows* this work is no less ambitious in its scope. A book that would not be out of place on the shelves of the conservation professional or the architectural historian, *Staircases*

sets out to give the staircase the space it deserves. It is divided into three sections. The first deals with the history, development, identification and dating of staircases and their elements. The history of the staircase is referenced from examples around the world, yet there are chapters dealing with dating and stylistic developments that zoom in to the national, and on occasions, local levels.

Part Two concerns itself with staircase design and structural performance criteria, maintenance and offers an insight into the latest research into the design of safe staircases. Part Three of the book is a guide to the main materials and techniques involved in the construction of staircases, their maintenance and repair. Unsurprisingly, a work of this scale is a work of many hands, each one an experienced practitioner, recognised within

**Staircases
sets out to
give the
staircase
the space it
deserves**



Volume Editors: Campbell, JWP and Tutton, M.
Managing Editor: Pearce, J.
Routledge 2014
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389 pp

their field, be it architectural history or conservation engineering. As a multi-authored work, different voices can be identified throughout the chapters, but without lacking cohesion.

Accompanied by a brief bibliography, the work is well referenced where quoting external sources. One (very) small criticism from this reviewer was that the notes were collated at the end of each chapter, and requiring a finger in the page while reading!

Despite its relative expense, this work is one which would provide a good deal of practical guidance for the architectural historian, conservation practitioner, student, and owner of an historic building.

Review by Paul Travis MCIAT



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Turning over

Moves to quantify construction's impact on the natural environment should help achieve 'no net losses' when developing biodiverse sites.

By Dr Julia Baker of Parsons Brinckerhoff.

As sustainable development and enhanced sustainable approaches have become an integral part of the construction industry, quantifying environmental issues, such as waste and carbon reduction, is increasingly important. Understandably, processes have developed to allow these issues to be measured and quantified.

In the UK, biodiversity — essentially the number, variety and variability of living organisms — has never been subject to such a 'quantifying' approach. This is partly because there was no universal measurement that could be easily adopted, given the complexities of measuring diverse and dynamic eco systems. Consequently, biodiversity reports have continued to be about 'the potential of a site for dormice' and 'the probability of great crested newts'.

However, how we communicate biodiversity as part of a development will change if the government introduces the biodiversity offsetting proposal outlined in the 2011 Natural Environment White Paper. In April 2012 the government then launched six pilot projects that put into practice the principles of biodiversity, which are due to run for two years, to evaluate whether an offset approach can address the shortcomings of the current system and achieve the ultimate win-win scenario: nature conservation as an integral part of development.

In September 2013, the government also issued a public consultation paper on options for biodiversity offsetting,

including its preference for a voluntary system, with Parsons Brinckerhoff's work for Network Rail's Thameslink programme. The government is currently reviewing the consultation responses and, following the evaluation of the pilots on offsetting, will issue a policy statement later this year.

What is biodiversity offsetting?

In the UK, biodiversity offsetting would only be applicable to land that has been approved for development, which means it does not apply to protected sites such as Sites of Special Scientific Interest (SSSIs) or National Nature Reserves (NNRs). In addition, vulnerable or irreplaceable habitats (such as ancient woodland) are also exempt from biodiversity offsetting, and legislation protecting wildlife and habitats overrides an offset approach.

But for sites approved for development, biodiversity offsetting would become one way to compensate for the unavoidable loss of biodiversity from development, which is a requirement under UK legislation and the National Planning Policy Framework 2012. It would form the last stage of the mitigation hierarchy when all reasonable efforts have been made to avoid or reduce impacts on biodiversity.

This means that developers go through stages of first avoiding biodiversity loss, for example by locating their development in a less sensitive area, and then minimising losses that cannot be avoided, such as reducing the amount of vegetation clearance on the



a new leaf

The lack of a standardised process has raised fears that the development system is failing to protect biodiversity



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site itself. However, if there are losses that cannot be avoided or reduced, legislation and planning policy dictate that developers compensate for these losses to achieve no net loss as a minimum, and preferably a net gain. Biodiversity offsetting is a method of achieving this that the government believes is more robust and cost-effective than the existing system of biodiversity compensation.

Existing system

So what's wrong with the existing system? Various guidelines exist on compensating for biodiversity loss. Typically, these involve creating like-for-like habitats offsite. However, there is no standardised process for calculating the amount of biodiversity lost or compensation needed, or identifying the location where compensation efforts will result in the greatest biodiversity benefit. This lack of a standardised process has raised fears that the development system is failing to protect biodiversity. Which is why the government — in step with other governments around the world — is working towards biodiversity offsetting as an option when compensation is needed for unavoidable loss.

The key difference with offsetting is that it needs to show measurable outcomes that are sustained over time: the losses resulting from the impact of the development and the gains achieved through an offset are measured in the same way. Until recently, we could not robustly determine whether a development achieved a no net loss or a

net gain. At the wider scale, the result has been a failure to halt biodiversity loss.

How will biodiversity offsetting impact developments?

As explained above, biodiversity offsetting would not change existing requirements for developers to compensate for unavoidable loss of biodiversity, but it would make it easier to do so and result in greater benefits for the environment. Offsets can be provided either by the developers themselves, or they can use an offset provider. Developers can compensate for the unavoidable loss of biodiversity at a different location to their development site, but only if it meets certain criteria.

These criteria vary among countries but most governments, including the UK, have adopted the principles established by the Business and Biodiversity Offset Programme (BBOP), a US-based coalition of 75 companies, financial institutions, government agencies and civil society organisations working to develop best practice.

The principles include strict adherence to the mitigation hierarchy, limits on what can be offset (particularly irreplaceable habitat such as ancient woodland) and achieving 'no net loss' as a minimum, though a net gain would be preferable. Adherence to BBOP's principles is a safeguard against offsetting becoming a 'licence to trash' culture, whereby developers immediately look to offset their impacts on biodiversity rather than first avoiding or reducing these impacts.

Measuring biodiversity

Measuring biodiversity is a significant step change in the protection and enhancement of biodiversity as part of development in the UK. The process allows non-experts to assess more easily how different choices impact biodiversity and whether harm can be avoided or reduced. In cases where harm cannot be avoided, numbers simplify the discussion between developers and statutory agencies on compensation for biodiversity loss. For its pilot test on biodiversity offsetting, the UK government's intention was to develop a simple yet robust metric to calculate 'biodiversity units'. This metric is based on three variables: habitat distinctiveness, habitat condition, and habitat size. To calculate biodiversity units, a developer (or its consultant) first



identifies all habitat types on a development site. For each habitat type, using government guidance, they determine whether the habitat is of low, medium, or high distinctiveness and then assess whether the condition is poor, moderate, or good. Each variable is scored, and all scores are multiplied to give the number of biodiversity units (see table below).

The units are units of biodiversity: they are not an attempt to put a price on biodiversity but to enable a comparison between losses and habitat creation. The cost of providing an offset will be calculated by the offset provider, on a case-by-case basis, depending on the conservation action they are taking. The government's pilot raised concerns in some quarters, and case studies from other countries do highlight failures. However, there are many other case studies that demonstrate successes if

the right framework is in place. For the government, introducing a measurement of biodiversity helps ensure that offsetting becomes a well-managed component of wider biodiversity conservation strategies, and helps to achieve the twin challenges of growing economies while enhancing and protecting the environment. For developers, measuring allows biodiversity to become a valuable asset to their sustainability portfolio.

Dr Julia Baker is a biodiversity specialist at multinational engineering and design firm Parsons Brinckerhoff

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Habitat type	Distinctiveness	Condition	Area (hectares)	Biodiversity units
Broadleaved woodland	High (6)	Good (3)	5	6x3x5 = 90
Rail transport verge	Low (2)	Poor (1)	2.5	2x1x2.15=5
Lowland meadow	High (6)	Moderate (2)	6	6x2x6=72

Above: example of biodiversity offsetting calculations

Are you augmented?

Once thought to have no commercial application, Augmented Reality (AR) is the next step for construction, argues Kenny Ingram of IFS software.

Design and construction has always been led by the technologies available at the time. Today, increased use of smartphones and the introduction of formalised mobile strategies are delivering a host of benefits at every stage of a building project's lifecycle. Better communications channels, as well as instant access to data, maps and cameras all have numerous uses when it comes to architecture and construction.

Augmented Reality (AR) is one such technology facilitated by mobile that is now delivering benefits for Architectural Technology professionals. Once maligned as a consumer proposition with limited commercial applications, AR is providing the building design and construction industries with tools that increase agility and mobility, while simultaneously reducing inefficiencies.

At the design stage, designers are using AR to generate 3D models from 2D plans that can also demonstrate the effect that wind and other factors will have on completed buildings. In addition, some AR platforms can isolate specific elements of an overall design, allowing for closer inspection and even full scale presentation.

Using AR in this way makes sense as it removes much of the need for physical models and prototypes. It also helps to more naturally represent the intended appearance of a design - end users can now take a tour of a building before a brick has been laid, as AR overlays a virtual representation at the proposed site.

Using the technology in this way has obvious applications when it

comes to building, as it helps communicate the complete vision to the wider team. It can also be used in the planning stages when sourcing resident feedback or applying for planning permission.

Many projects are using Quick Response (QR) codes, a type of barcode, as the reference point from which AR content is generated. They have been invaluable, for example, during the construction of the one million square foot Oakland Medical Centre Replacement Project in California.

At any stage during construction, on-site personnel can scan a QR code using a smartphone or tablet, instantly generating the latest 3D BIM model or laser scan of the space they are working on. This is especially useful for complex, long-running building projects like hospitals where plans can change multiple times during construction.

Swedish company XMReality has come up with a solution to ensure the correct expertise is on site at all times. It uses AR to allow remote experts to communicate directly with on-site personnel via a tablet or pair of video enabled glasses. The specialist can then provide real-time audio-visual guidance, with everything they refer to appearing in the on-site user's field of vision. By deploying this kind of approach, company's stand to reduce downtime and travel costs, while making more effective use of in-house expertise.

In the UK, the Crossrail project is also experimenting with AR. However, its approach does not rely on QR codes or cameras, using geolocation technology instead. Observing sites through a



The specialist can provide real time audio visual guidance

tablet allows personnel to view 3D models, including all of the pipes and wiring that are usually obscured by wall panels. What's more, they allow for future planning, enabling things like passenger flow to be modelled so that owners know what to expect once the project is complete.

This is not the only way AR promises to help once building has finished, with ongoing ops and maintenance particularly well placed to benefit. By incorporating QR codes and other reference points into building systems, AR can be used to provide instant access to equipment manuals and warranties, maintenance schedules, work histories, and architectural design plans – all useful resources for ongoing building maintenance.

Ultimately, AR stands to add an extra layer of intelligence to the entire process of designing, erecting and maintaining buildings. As such, it is important for organisations to start thinking about how this type of technology might fit into their existing infrastructure.

With consumer propositions like Google Glass already in the marketplace, we can expect to see a range of site-ready solutions in the near future. Businesses need to make sure they have the systems in place to properly integrate these technologies, as well as monitor their usage.

IFS is a global provider of business software for Project and Asset Lifecycle Management. Image © Syda Productions/ Fotolia.com

Regional focus: East Midlands

In the second in the series of articles looking in detail at Regions and Centres and how they work on behalf of the membership, Graham Smith MCIAT, Regional Chairman, and Joe Travers ACIAT, Regional Secretary, report from the East Midlands Region.

The CIAT East Midlands Region is comprised of the counties of Leicestershire, Nottinghamshire, Lincolnshire, and Derbyshire with approximately 600 members.

As a Region we actively encourage the growth of CIAT as an Institute as well as promoting its brand and awareness Regionally, nationally and internationally. We endeavour to provide support for the Regional membership and support membership progression. We aim to provide the most pertinent and interesting subject matter and topics in our open CPD events. We always remain open to suggestions and ideas from the Regional membership and have regularly seen ideas and suggestions through to completion.

Academic excellence

The Region is currently home to two universities with CIAT-Accredited programmes, namely Derby University and Nottingham Trent University. Both boast a well-structured learning programme substantially covering the Architectural Technology discipline as well as good links with the Institute and professional practice. Derby University was recently awarded the highly coveted CIAT Centre of Excellence status for its commitment to the academic discipline of Architectural Technology and the professional development of Chartered Architectural Technologists.

The Region also regularly focuses on national issues within CIAT. Robert Aspey

is the Regional Councillor and acts as the communication channel between the committee and the Region, Central Office and Council.

Student representative

The East Midlands committee has recently created the position of Student Representative. It is an attempt to enhance links between the academic institutes and students. The role was first held by Luke Dallison studying at Nottingham Trent University, Luke remains in part-time study whilst working on some very interesting projects for his part-time employer. Luke continues to remain part of the committee.

The post is now held by Chloe Barrass, a final year student at Derby University. She has also agreed to remain a part of the committee following the completion of her studies.

This position has generated new ideas for the Region and has been a successful venture. We hope this role will bring members into the Institute in the future. It has also acted as an alternative route for younger members to have their say and become involved with the Institute at Regional level. We hope other Centres and Regions will adopt the Student Representative position onto their committees following on from our success.

The Region will host the AGM and President's Dinner Dance in Nottingham this November.



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From the Chairman: Graham Smith MCIAT

CIAT has a committed set of members in the East Midlands, with an active CPD programme where we always encourage new members. We have an ongoing programme of appointing student representatives with the aim of retaining graduates for future roles on the committee.

This progressive networking is not diluted by students moving away from the Region, since we always encourage them to join their relevant new CIAT committee, having gained experience in the East Midlands.

We are looking forward to hosting the 2014 AGM in Nottingham and intend to host a Membership Promotion Event next year to mark the fiftieth anniversary of the Institute. It is pleasing to see that members come from an increasingly diverse technical background and the Institute goes from strength to strength.

Membership is more than just 'letters after the name'

We were encouraged by our visit to the East Anglia Region recently where we met with chairman David Taylor, who is actively promoting enhanced connections between the various Regional committees. A more integrated platform for the Regions, possibly aided by a future Institute intranet, provides for a better reach to all members, and we hope to engage them more in CIAT activities so that membership is more than just 'letters after the name'.

Being part of CIAT means you are a member of a design community that promotes the advance of technology in buildings for the betterment of society.

Meet the Committee

The East Midlands committee is made up of a mixture of long standing and new members:

- Graham Smith MCIAT: Chairman
- Joe Travers ACIAT: Secretary
- Ian Storm ACIAT: Treasurer
- Robert Aspey MCIAT: Councillor
- Mark Macmanard TCIAT: CPD Officer
- Chloe Barrass: student representative
- Boris Ceranic MCIAT: committee member
- Luke Dallison: committee member
- Chris Yorke: committee member
- Scott Moore: committee member

Committee profiles

Graham Smith joined CIAT in 2000 and obtained full Membership in 2004. He chose to specialise in fire safety, undertaking a doctorate at the University of Derby in fire evacuation modelling in underground metro stations. Graham presented his research in 2003 at the Institute's international conference held at the British Museum in London. He joined the East Midlands committee in 2002, became Secretary in 2005 and Chairman in 2010.

Graham has worked for Jacobs for the last 14 years, principally working in the rail and power sectors. He has experience of the early planning and development stages of major projects such as \$6BN RailCorp metro system in Sydney and \$20BN Sadara, Saudi Arabia (the largest new-build power station in the world).

He has nuclear fire safety experience at Sellafield, Hinkley Point C and BAE systems and led a team to deliver detail design of fire systems at Beckton National Grid. He also resolved escape stair pressurisation for Gatwick Airport's North and South terminal buildings and reformulated the airport evacuation strategy as a BS-7974 trial design, which was supported by fire and evacuation modelling work undertaken to the approval of the BRE, Fire Service and Building Control.

Robert Aspey is a Chartered Architectural Technologist currently working for Derby City Council as a Senior Project Surveyor. Robert has been an active and enthusiastic member of the committee since 2009 and is currently enjoying his second term as Regional Councillor following his first successful term.

Robert is the major influence in the production and issue of the Regions biannual newsletter. He has also acted as POP Record Supervisor / Professional Assessment Referee for a number of candidates.

He said 'on appointment as Regional Councillor one of the main issues that I identified as a priority for CIAT, was the expansion of our international recognition and clear information regarding this on our website. I discussed this at the Council meetings in London, and gained agreement for resources to be allocated to make more progress on this matter.

'Our new International Director has now included an International Section on the website with a very detailed International FAQs section

'One of the main issues I identified was the expansion of our international recognition.'

(www.ciat.org.uk/en/faq/index.cfm) explaining what recognition Chartered Architectural Technologists have for undertaking building design work internationally. This is an ever expanding section as we continue to secure new agreements for mutual recognition with similar institutes in other countries.

'Although many members may never have to physically work outside the UK, some may be involved with designing and certifying projects abroad while working in offices in the UK. It also strengthens our status in the UK by demonstrating that we have increasing global recognition similar to other construction professionals'.

Mark Macmanard is a Senior Technician working for Staniforth Architects in Leicester. Mark has been a member of the Institute since 1999 and became the first candidate to qualify as a TCIAT member. Mark has been involved with the Regional committee since 2009 and took up the position of CPD Officer in 2011, managing the organisation and running of various events and seminars.

Mark said 'I was a little daunted when I first undertook the CPD Officer role for the East Midlands but we have run several successful seminars to date. The success of the seminars isn't solely down to me alone, all of the committee have to balance our CIAT roles and work. The other committee members must take some of the credit too as we all chip in when needed.'

Mark is always looking for input and ideas from the Membership on subject matter for the CPD seminars, so please feel free to contact the committee with any thoughts you may have.

Regional news

The Region held a Planning Update CPD event at Derby University in February. The CPD was presented by John Scott, Director of Planning at Peak District National Park Authority and focused on recent developments in planning legislation and issues which may affect planning in the near future.

In April we held a Building Regulations update seminar in Leicester which was presented by Paul Meadows, Managing Director of Salus Approved Inspectors and focussed on changes to Parts K, L and M, the repeal of local acts as well as section 20 requirements.

We returned to Derby University in May for the Regional ABM and a Passivhaus CPD which was presented by Mike Shufflebottom of Green Building Store. The CPD focused on methodology and standards, specification required to achieve Passivhaus certification and a case study.

Upcoming Regional events

On the weekend of November 28/29 2014 the East Midlands Region has won the privilege to host the institute's Annual General Meeting. The Region, as is customary, will host the Friday night event which is scheduled to take place in the illustrious Nottingham Council House. This building presides over the Old Market Square in the heart of the city. The evening has been given a Robin Hood theme and various activities will be run during the evening, including virtual archery.

The AGM itself will take place at the Crowne Plaza Hotel on the Saturday morning and early afternoon with the President's dinner and dance scheduled to take place at the East Midlands Conference Centre close by on the Saturday evening.

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Success is in your hands

Alex Naraian MCIAT, South East Region Chairman and an Associate Director of ADAM Architecture, looks at how two colleagues furthered their careers by joining CIAT through the Membership Progression Route.

As the Councillor and Chairman of the South East Region, I am keen to see Chartered Membership numbers increase. Membership is the life blood of the Institute and is necessary for its growth and industry recognition. I believe that the recently introduced changes to the progression route has been a positive move by the Institute – becoming Chartered is now more accessible and it celebrates the diversity of the profession of Architectural Technology.

The change can only be a good thing for the Institute, its members and for the profession's increasing presence in industry. The shift in emphasis moves away from being prescriptive and focuses on professionalism and a candidate's ability to demonstrate this. It is much more adaptable than ever before, without compromising the accolade of the achievement that becoming chartered represents.

Embracing change head-on

I can recall that when the new membership route was being developed and presented, how excited I was with its approach, feeling proud that the Institute really does have the best interest of the profession and its membership at heart. The Institute has really grasped the fact that industry changes at such a fast

rate and that this is set to continue, the only certainty being uncertainty in a rapidly changing world and global economy. The new membership route embraces change 'head on'.

It's great to have this route now formally in place, but of course the real challenge lies now with those members wanting and being willing to put the effort in, having that 'hunger in their belly' to become Chartered and fulfilling that ambition. There is no magic here, other than effort and reward – effort on the part of the candidate and reward in achievement. Beyond that, there is the very simple understanding that the greater the number of chartered members, the greater the influence in the industry – numbers count!

The accessible route

I have such conviction that the new membership route was/is as accessible as it looks on paper that I approached a number of colleagues that were not, in fact, Chartered and realised quite quickly that they were keen and wanted to become Chartered. However for a variety of reasons, hadn't got around to it. All they needed was a little encouragement. Andrew Moore and Steve Bushell are two of those colleagues and they have



There is no magic here, other than effort and reward

been kind enough to share their reflections of becoming Chartered. I hope that these accounts will be an encouragement to others who are contemplating following the new progression route.

Andrew Moore MCIAT

'Having been an Associate Member for more years than I care to remember, the excuse of a busy work life always intervened whenever the spectre of the POP Record loomed. So when James Banks, Membership Director, emailed to let us know about the new Professional Qualifying route around the end of May 2013 interest was aroused.

'It wasn't until the Middle of August later that year, when James came into the ADAM office to give his presentation to myself and four colleagues that we better understood the simplicity of the application process. The PQ route really is a more applicant friendly and appropriate format for assessing people's ability, in real life work situations where career opportunities do not always follow the traditionally perceived Chartered Architectural Technologist role. In this respect CIAT is to be applauded for taking the initiative to make our professional body accessible and relevant.



Teambuilders: (left to right) Elysia Dooley MCIAT, Steven Bushell MCIAT, Andrew Moore MCIAT, Ian Lawrence MCIAT and Alex Naraian MCIAT.

'Following James' presentation we set ourselves a target of two months to complete the application forms and have them submitted for assessment. In truth for candidates with rounded experience to draw on, this is plenty of time, for the less experienced it is probably only uncertainty about how to articulate their sometimes limited experience, making it relevant to the core competencies. At ADAM we are fortunate the directors are keen to see staff properly qualified so they gave us every measure of support and opportunity we needed. We were also lucky to have one of our colleagues, Alex Naraian, enthusiastic to see CIAT grow and expand, acting as mentor and referee offering help and advice as required.

'The application process was successfully completed by the end of November and by the end of January a date was set for the interviews. Because there were a number of us being interviewed, the interviewers came to our office, CIAT doing what they could to help the process. The interviews themselves were a very relaxed affair, simply put, if you are confident and knowledgeable of what you included within your application form, then the interview is a meeting between colleagues to discuss a few points in a little more detail. If the interviewers come away from the meeting feeling

confident the candidate is a safe and reliable pair of hands then membership will likely be offered.

'The whole application process is now really quite straightforward and took only around five months to complete. If you are doing this on your own without trying to fit in with colleagues' diaries, this time could be reduced further. Joining is certainly not as daunting a prospect as it once might have been.'

Steve Bushell MCIAT

'I really welcomed the introduction of the Professional Assessment route to become a Chartered Architectural Technologist. At 57 years of age, I have come late to this point of recognition. People often ask me why I did not apply earlier and you would need to review my whole CV to see that I have had a chequered career spanning nearly 40 years, which has involved me running my own practice, working for contractors and housing development companies, as well as my core work, working in architectural practices. Therefore the stars never quite aligned to allow me to join CIAT through the POP Record route.

'ADAM Architecture has very strong ties with CIAT and early in 2013 we were visited by Colin Orr PPCIAT MCIAT and

he outlined the plans to provide a new route to membership. Along with several of my colleagues, I put myself forward for Professional Assessment. I joined ADAM Architecture three and a half years ago and was promoted to an Associate Director in October 2013. I feel that membership of CIAT is an important step for me and provides recognition to my fellow professionals and clients of my abilities. At some stage in the future I plan to undertake part-time lecturing and membership of CIAT provides credibility to this aim.'

Success is in your hands

Andrew and Steve are two of four colleagues who were successful in becoming Chartered. Ian Lawrence and Elysia Dooley also achieved Chartered status. Working at ADAM Architecture was a real benefit to them, as being a large multi-disciplinary practice meant that they were able to progress as a group. I am immensely proud of them all and know that they are a real asset to the industry and great exemplars for CIAT.

If you are thinking of becoming Chartered then I hope this article will help motivate and encourage. After all, the Institute is as strong as its membership. The Institute's success really is in its members' hands.

ARCHITECTS
BENEVOLENT
SOCIETY



**Here
when you
need us**

Architects Benevolent Society is dedicated to helping members of CIAT, and their families, in times of need.

We help people of all ages when redundancy, financial hardship, disability, poor health or other crises cause despair.

We offer confidential support and advice. Our qualified welfare team can advise about state benefits, housing concerns, needs related to care and mobility in the home and much more.

We can provide financial assistance to help people with limited means to get by in difficult circumstances. We can help with repairs towards the cost of essential household items, provide respite holidays for carers, and even pay bills in times of particular hardship.

Let us help you.

Call us on: **020 7580 2823**

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

or write write to us at:

43 Portland Place, London W1B 1QH

In urgent cases we can give emergency assistance immediately.

Please contact us today.



Discover the power of the group



Group Membership Scheme

Enjoy a waived application fee and 50% off your first annual subscription

If you are a practice or organisation with three or more paying members or applicants applying for any grade of membership (excluding student) then you are eligible to apply through the Group Membership Scheme (GMS), saving time and money in the process.

Financial benefits include:

- waived application fee saving £60 per applicant.
- 50% reduction in first year annual subscription per applicant saving a maximum of £88.
- 25% reduction in future assessment fees when submitting en bloc, which is a maximum saving of £75 per applicant.

Other benefits include:

- eligibility to apply for a licence to use the CIAT GMS logo
- if five or more applicants are ready for their Professional Interview at the same time, the Interview Board can be arranged at your workplace.

For more information and to apply please visit:
www.ciat.org.uk/en/Join_CIAT/benefits/gms.cfm
or contact James Banks, Membership Director.
Email james@ciat.org.uk or tel. +44(0)20 7278 2206.



Wolverhampton wonders

CIAT-Accredited programme awards

In May the Architecture and Built Environment students (ABE) from the University of Wolverhampton presented 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, a scale site models and a scaled working model for their selected project areas.

A formal presentation viva was also completed by each student in front of a panel of academics and external client guests. The Module Leader, Colin Orr PPCIAT MCIAT 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.

A number of the exhibits are being considered for CIAT/APS/RSA national student competitions.

Awards were presented to the following student members:

- Bethany Lees: Best Presentation Boards
- Cherelle Greenaway: Best Exhibit
- Arjan Ubhi: Best Presentation Technique and Model.
- Joseph Groves: Best Technical Detailing

Right: student member Joseph Groves receives his certificate for Best Technical Detailing from Chris Williams, Principal Lecturer



Ulster all-stars

Kylie Braithwaite received her certificate for Outstanding Performing Graduate on the BSc (Hons) Architectural Technology and Management Programme from President Karl Grace at the University of Ulster's end of year show in July. Ms Braithwaite was one of several student members to receive awards



Immediate Past President Colin Orr MCIAT, Principal Lecturer in Architecture at the University of Wolverhampton, and his wife Val were guests of Her Majesty the Queen at the Buckingham Palace garden party in May.

Costco discount deal for members

CIAT members are now eligible to join the discount wholesale warehouse chain Costco. The warehouses are designed to help small-to-medium-sized businesses reduce costs in purchasing for resale and for everyday business use. Individual Members may also purchase for their personal needs.

To apply for individual Membership: CIAT members will need to bring in proof of membership plus a current home utility bill or bank statement dated within the last three months plus photo ID. The annual cost is £25 plus VAT inc. free Spouse Card. An additional card can be purchased at a cost of £12 plus VAT, but it must be someone aged over 18 residing at the same address, of which you must provide proof. This can be done either in writing or in person at the warehouse. A photograph can be done on the Additional Cardholder's first visit to the warehouse. Please quote category number 25879 when applying. To find out more about Costco please visit costco.co.uk

Professional Standards Framework



In July CIAT published its Professional Standards Framework which pulls together the educational standards and the practice standards required of all Chartered Members.

This essentially links the QAA Benchmark Statement, the Professional Assessment process and the Professional Interview. This Framework has been in development since the introduction of the Professional Assessment route of entry in May 2013, to provide clarity for members and external organisations alike.

It was agreed that development of this document would be deferred pending the review of the UK QAA Subject Benchmark Statement (SBS) in Architectural Technology - which was due this year - as the SBS is integral to the Framework. This has allowed the Institute to harmonise the two documents which in turn provides transparency to members, external bodies and others seeking information on the educational and practice standards of Chartered Members. This work also clearly demonstrates CIAT's position as the UK Competent Authority for the discipline.

Professor Sam Allwinkle, PPBIAT MCIAT, Chair of the Education Board was appointed Chair of the QAA SBS Review Group. The QAA and the Department for Business Innovation and Skills commended group's work stating that the SBS would be used as an exemplar for future reviews.

To view the Framework, please click here. www.ciat.org.uk/en/Join_CIAT

Correspondence

Please write to the Editor, *AT Magazine*, 397 City Road, London EC1V 1NH or email editorial@ciat.org.uk. We reserve the right to edit letters.

Clear sky thinking

I refer to the article 'Triple glazing: worth the pane? by Paul Hicks ACIAT in issue 110.

While I agree with the logic that a window's 'energy balance' is more important than adopting a U-value only approach to window specification, I take issue with some of the physics presented in the article.

Mr Hicks' calculations do not take account of the correction applied to the centre pane U-value for double and triple glazed units in accordance with BS EN 673:2011. Centre pane U-values for glazing is almost always quoted for a unit installed vertically. In the case of roof windows, where the unit is installed at an angle, a correction is applied to the U-value to account for additional heat flow via convection (see 5.4.3 of BS EN 673:2011).

The in-situ U-value of a double glazed unit is more sensitive to the angle of installation than a triple glazed unit. How many roof windows are installed vertically?

Mr Hicks' analysis also fails to mention the effect of clear sky radiative cooling on heat loss from roof windows. Under clear sky conditions the apparent sky temperature can be much lower than the air temperature, leading to an increased rate of heat loss.

I am a firm believer in the specification of triple glazed units where large areas of glazing are employed if only to avoid the problems associated with clear sky

radiative cooling and the potential for occupant discomfort.

Finally, Mr Hick's research is based on an unfair comparison between the best performing DGU (-60) and the worst performing triple glazed unit (-66) currently offered by Velux. Perhaps it would have been more meaningful to base a cost/benefit analysis based on the (-62) triple glazed unit with a U-value of 0.83W/m².K.

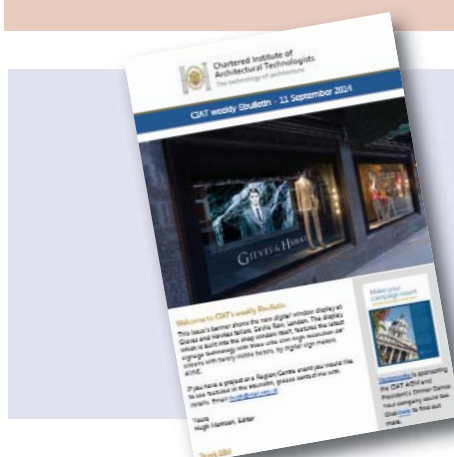
Leigh Caller MCIAT Yeovil, Somerset.

Wood and bad

With reference to the article 'Insulating stone walls', issue 110, the use of wood in a solid masonry wall may well hasten deterioration. It was my practice to remove all wood from within an old wall construction. One uncovered example in an internal wall (load bearing) in a project showed a large amount of decayed wood built in to the structure, which if not discovered would probably have led to partial collapse of the building. The structural engineer was horrified.

What the article does not appear to mention is that the lathe is fixed to vertical timber battens (straps) which in turn are fixed to timber 'dooks' or 'dwangs' (known in England as 'noggings') driven in to the inner masonry face. And I would be surprised if either the plaster work or the lathe or the straps or the 'dooks' would be in a satisfactory condition to be retained.

Ian Elmslie MCIAT, Aberdeen.



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.

Plaque presentations



On 11 June two plaque presentations were made by Institute representatives to the Winner and Commended entrants in the Open Award for Technical Excellence 2013. The Louis Hamilton Centre in Gorleston, Norfolk received the plaque for the winning entry; the picture left shows staff of the centre, a medical facility, alongside Chartered Architectural Technologists Peter Durrant MCIAT and Piet Knaapen MCIAT.

The second presentation was made to Chris Senior MCIAT (below left, centre) by President Karl Grace (right) and Kevin Crawford MCIAT, Vice-President Technical. The plaque was presented for affixing to the Pool House, Cambridge, which was Commended.

Also in attendance were Francesca Berriman MBE, Chief Executive, David Taylor MCIAT, Regional Chairman, and Kevin McParland, of award sponsors McParland Finn who operate CIAT Insurance Services.

Bourne free! Farewell to CIAT's Operations Director

After 19 years' loyal service to the Institute, Operations Director Les Bourne is retiring. Hugh Morrison, AT Editor, caught up with him.

When did you join CIAT?

I started in June 1995 and truthfully expected to stay for only a short period. Having been made redundant previously, finding a new job was a bonus and I am delighted and privileged to have lasted for 19 years.

Where did you work before that?

My main earlier career was with Barclays Bank where I served a 27 year sentence before receiving redundancy on the grounds of age – I was 45 at the time! The discrimination rules were certainly different then.

What are the main changes you have seen over the years?

The obvious changes must be those related to IT and communications. It was a milestone when we took the bold step of obtaining Internet access and email at City Road, then set up a contract for mobile phones. It is hard to remember that I used to do some of my work using pen and paper. As nobody can read my handwriting, it is just as well that computers took over. Most of our

communication is instant nowadays, which is really positive, as it enables any issues to be attended to very quickly.

You're also responsible for arranging the repairs/maintenance at Central Office. How have you found looking after a late Georgian townhouse in a conservation area?

The office building is an old six storey townhouse, converted to office use, so one of the difficulties has been to install modern services such as computer cabling and air-conditioning, but there is always a workable solution.

We have been fortunate in finding some good tradesmen to carry out the maintenance, so generally, the 'awkward corners' found in an old building have not been a problem. I hasten to add that I did not do the work personally but have been known to change a light bulb occasionally.

What has been the high point of your time at CIAT?

There have of course been some noteworthy moments, such as when the Institute obtained its Royal Charter in 2005, but honestly I have enjoyed the whole 19 years. The work has been thoroughly enjoyable even if most of it

has been related to the financial matters. It might sound uninspiring to many, but my job satisfaction has been seeing CIAT's accounts balance each year. Most of all, I shall miss the regular contact with colleagues and members, but I will be glad not to be commuting every day.

I have calculated that since I joined the staff, I have spent a total of 11,000 hours travelling between home and work, courtesy of the Northern Line and Southeastern Trains, so I will be happy to find something else to occupy that time.

Do you have any plans for retirement?

Yes. I will be able to catch up on some DIY at home and glad to be able to spend more time with my family. I am not a golfer and do not go fishing, but have in mind that I will spend some time helping out a couple of charities local to home. If things do not work out, I might just spend the hours of daylight in my shed!

Do you have a farewell message for the Institute?

Yes indeed – a sincere 'thank you' for giving me the opportunity to work with a worthy organisation. I do hope CIAT continues to prosper and of course, to spend its money wisely!

NEW MEMBERS

We are delighted to congratulate the following individuals as Chartered Members:

025294	Michael Cowley	01 Northern
021994	Andrew Holdsworth	01 Northern
023101	Richard Shields	01 Northern
028831	Darren Catchpole	01 Northern
028806	Jonathan Whitehead	01 Northern
017125	Alan Rowe	01 Northern
023173	James Newton	02 Yorkshire
022069	James Holdsworth	02 Yorkshire
010542	Martin Smith	03 North West
028958	Andrew Morgan	03 North West
021519	Alex Scrimshaw	03 North West
016405	Rachel James	04 E Midlands
015118	Anthony Jones	04 E Midlands
029012	Andrew Pearson	04 E Midlands
022328	James Gamer	04 E Midlands
024058	Melanie Horbury	05 W Midlands
025601	Phillip Jones	05 W Midlands
021754	Alexander Collins	05 W Midlands
028177	Jason Asbury	05 W Midlands
027580	Neil Pennell	05 W Midlands
028457	Andrew Roberts	05 W Midlands
020742	Sam George	06 Wessex
027869	Robin Halford	07 East Anglia
025809	Ryan Doyle	09 Gtr London
026842	David Reddy	09 Gtr London

019655	Nicholas Whiting	09 Gtr London
028104	Lee Wood	09 Gtr London
026382	Brian Leonard	09 Gtr London
019838	Daniel Fisher	09 Gtr London
009099	David Bister	10 South East
025686	Robert Millard	10 South East
028995	Alan Signora	10 South East
023030	Benjamin Hewlett	11 Channel Isles
021899	John Yarham	12 Western
021095	Ian Coote	12 Western
023982	Dean Luxton	12 Western
021978	Adam Raspison	12 Western
019858	Callum Haywood	12 Western
015035	Christopher Strike	12 Western
028061	James Neep	12 Western
018435	Paul Pethick	12 Western
029114	James Huntley	14 Scotland East
012925	Kevin White	14 Scotland East
023270	George Hadden	14 Scotland East
019158	Steven Morris	14 Scotland East
020189	Ronan McKee	15 N Ireland
023366	Kenneth Greer	15 N Ireland
028181	Martin McGirr	15 N Ireland
024527	Orin Quigg	15 N Ireland
027164	Dewi Hughes	16 Wales
025270	Gareth Owen	16 Wales
021806	Paul Andrews	C2 Rep of Ireland
028022	Shane Spring	C2 Rep of Ireland
016574	Karol Mac Gairbheith	C2 Rep of Ireland

027885	John Duffy	C2 Rep of Ireland
022190	Terence McMenamin	C2 Rep of Ireland
024776	Michael Quirke	C2 Rep of Ireland
027875	Henrik Jansson	C6 Europe
028018	Roger Taylor	C6 Europe
027878	Michael Christiansen	C6 Europe
026203	Gareth Owen	C7 Mid E & Africa

Congratulations to the following who have re-entered as Chartered Members:

009093	Matthew Lawley	01 Northern
010382	Jonathan Riddle	03 North West
007002	Barry Roberts	03 North West
012173	Graham Theobald	07 East Anglia

In Memoriam

We regret to announce the death of the following member:

Clifford Rutherford, Northern Region.

Correction: please note James Mason and Andrew Fleet are working towards attaining Chartered Architectural Technologist, MCIAT status and are not Chartered Members as described in AT issue 110.

Conduct

In accordance with the Institute's Code of Conduct, decisions by the Conduct Committee are published in AT magazine.

011693/F2599 – Mr Malcolm Percy (profile candidate)

Mr Percy was found in breach of Clause 1a) and Clause 1b) and Clause 4b) from the Code of Conduct effective 1 May 2011:

Clause 1: Professional Conduct

The members shall at all times:

- a) act with integrity so as to uphold the standing and reputation of the Institute;
- b) act faithfully and honourably in their professional responsibilities.

Clause 4: Advertising

- b) Profile candidates may not make reference to their membership of the Institute in advertisements, other promotional activity or to their clients or associated third parties.

Disciplinary action:

In accordance with the Conduct and Disciplinary Procedures Schedule 1, Item 17e), Mr Percy was expelled from the Institute in respect of the breach of Clause 1a) from the Institute's Code of Conduct effective 1 May 2011.

In accordance with the Conduct and Disciplinary Procedures Schedule 1, Item 17e), Mr Percy was expelled from the Institute in respect of the breach of Clause 1b) from the Institute's Code of Conduct effective 1 May 2011.

In accordance with the Conduct and Disciplinary Procedures Schedule 1, Item 17c), Mr Percy was suspended for a period of five years in respect of the breach of Clause 4b) from the Institute's Code of Conduct effective 1 May 2011.

CIAT and IFE sign agreement

A memorandum of understanding has been signed between the Chartered Institute of Architectural Technologists (CIAT) and the Institution of Fire Engineers (IFE) to collaborate on matters relating to their respective disciplines.

The objectives of the memorandum are to:

- recognise the distinct nature and standing of each discipline;
- provide enhanced services to support members' professional needs through joint development, commitment and action;

- improve the professionalism and competitiveness of members through the provision of joint ventures and representation.

Following the signing of the memorandum, Karl Grace, President of CIAT said 'This relationship identifies how Fire Engineers and Architectural Technology professionals are working together to ensure fire safety within the built environment. It also paves the way for a long-term relationship between us.'

Burning issues: CIAT kindles a long term relationship with IFE



Region and Centre News

Yorkshire Region 2

The CIAT-supported Ecoshowcase Green Building Roadshow takes place at the Royal Armouries Museum, Leeds, on 14 October from 10.00 am to 2.00pm. The event will feature a presentation entitled 'How Insulation Works' by Mark Wilson MCIAT, and is just one of the notable CPD presentations at this event. For more information visit www.ecoshowcase.co.uk

North West Region 3

Members are invited to attend a Membership Progression Session at the MacDonald Hotel, Piccadilly, London Road, Manchester M1 2PG on Monday 27 October from 11.00 am to 12.15pm. The presentation will be followed by a Q&A Session. It is free for members to attend. However, spaces are limited and will be allocated on a first come first serve basis. Refreshments will be provided. To reserve a slot, please email membership@ciat.org.uk

East Midlands Region 4

The CIAT AGM and President's Dinner Dance takes place this year in Nottingham on 29 November. A members-only social event will take place on 28 November. For more information and to book your place please email info@ciat.org.uk or telephone 020 7278 2206.

East Anglia Region 7

Members scooped several prizes in the King's Lynn and West Norfolk Mayor's Design Awards 2014 held in July. Lawrence Coussell MCIAT was awarded in three categories: Small Scale Single New-Build Property, Large Scale Single New-Build Property and Gold Award David Taylor MCIAT and Ian Bix MCIAT

also received awards and the ceremony was well attended by Institute members. Lawrence's projects are featured on page four of this issue.

Greater London Region 9

Grand Designs Live, 9-12 October, based on the successful Channel 4 TV series brings together design, inspiration and the industry's top companies. The event is supported by CIAT and members will once again be offering advice to the public at the show. The event is ideal for keeping up with trends in building design. To claim a free ticket visit www.granddesignslive.com and enter the code CIAT2014.

Scotland East Region 13

4 November, 10.00am to 2.00pm The CIAT-supported Ecoshowcase Green Building Roadshow will take place at Hampden Park Stadium, Glasgow. The event will feature a presentation entitled 'How Insulation Works' by Mark Wilson MCIAT, and is just one of the notable CPD presentations at this event. For more information visit www.ecoshowcase.co.uk

Republic of Ireland Centre 2

Amendments to the Capital Works Management Framework (CWMF) to cater for the Building Control (Amendment) Regulations 2014

The amendments to the public works contracts, associated forms of tender and schedule, amendments to the ITTs for service providers and associated form of tender and schedule were published in June. For further information visit Construction Procurement website: www.constructionprocurement.gov.ie

Centre Committee: Due to the tragic death of our Honorary Secretary, John Cloonan, earlier this year, the membership of the Centre Committee is now below the optimum number. The Centre Chairman urges members in the Republic of Ireland to participate as a full complement of active Committee

members is required to achieve current aims with regard to the Building Control Regulations. The Committee aims to meet physically three times a year, with a General Business Meeting every two years. Most business is by email. Please contact Denise Germaine, MCIAT, Centre Chairman and Councillor if you would like to get involved. Mobile 086 3861386. Email denisegerm@gmail.com

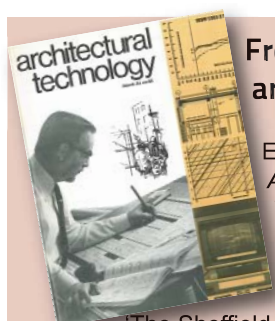
Building Control (Amendment) Regulations 2014

Use of a Commencement Notice when BC(A)R does not apply. The old form of Commencement Notice has been superseded. There is a new single Commencement Notice form. This form must be used for all Commencement Notices, whether they are under the remit of BC(A)R 2104, or not. We advise that the old form of Commencement Notice cannot be used anymore, and if used will be deemed to be invalid. For further information please visit www.environ.ie – Building Standards.

Architectural Technologists' Register

All members on the recently set up voluntary Architectural Technologists' Register (ATR) are required under its Code of Conduct to ensure that they are covered by adequate Professional Indemnity Insurance and any other appropriate insurances. If the Register becomes Statutory, Registrants eligible to act as a Design Certifier or Assigned Certifier will be required to have the necessary verified insurance in place, whether in practise on their own account, as a partner or director, or as an employee.

All Chartered Members are eligible to join the Register free of charge, however it is particularly important for those competent Architectural Technology professionals that work in, or intend to work in the Republic of Ireland to join and we urge you to support this important initiative. Please email atr@ciat.org.uk to request a copy of the Code of Conduct and an MCIAT Nomination Form to join the Register.



From the AT archives

Excerpts from *Architectural Technology* issue 63 (September 1983):

'The Sheffield and South Yorkshire chapter (a Regional subdivision) held a talk on computers

and organised a visit to see computers in action.'

'The problem with the intellectual tool called a "computer program" is that its limitations are buried in its code, and even the author may not have foreseen all the consequences...they may be fast and reliable at *testing* solutions to design problems, but we are still as far away as ever from programs that can *innovate* solutions.'

'Timber frame, or timber panel housing has for long been a subject which has been discussed...the pros and cons have been debated for a number of years...there is no doubt that many questions can be asked. Are all such systems most suitably designed?'

'The position of the technician is vital to the Hong Kong construction industry...I envisage a thriving branch of several hundred members within a few years.'

Nottingham 2014



Notice of the 2014 CIAT Annual General Meeting

Notice is given that the Annual General meeting of the Chartered Institute of Architectural Technologists will be held at the Council House, Nottingham, on Saturday 29 November 2014 for the following purposes:

- To consider the Annual Review
- To consider the accounts and balance sheets as at 30 April 2014
- To re-appoint the auditors and authorise Council to fix their remuneration
- To announce the results of the election of members to the Council and Regional and Centre Committees
- To receive and debate one resolution

CIAT, 397 City Road,
London EC1V 1NH, UK.

Francesca AH Berriman MBE,
Chief Executive, May 2014.

Meet fellow members, network with built environment professionals and enjoy lavish hospitality...

CIAT is holding its AGM and President's Dinner Dance in Nottingham on Saturday 29 November.

These prestigious events bring together over 250 Architectural Technology and built environment professionals – an ideal opportunity to meet fellow members and to network with related industry representatives.

If you would like to attend the President's Dinner Dance, please contact Isabelle Morgan, Administrative Coordinator. Email isabelle@ciat.org.uk or telephone +44 (0) 7278 2206 for more information. Closing date for bookings is 17 October.

We are pleased to announce that the AGM and President's Dinner Dance will this year be sponsored by Vectorworks.



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CIAT



SHOWCASE

The Green Building and Facilities Roadshow

TUE
14
OCT
2014

Leeds

TUE
4
NOV
2014

Glasgow

THU
20
NOV
2014

London

TUE
2
DEC
2014

Bristol

TUE
10
FEB
2015

Manchester

TUE
24
MAR
2015

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