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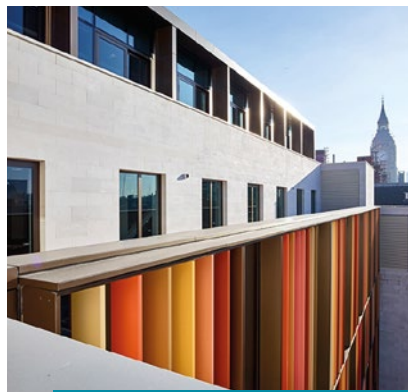
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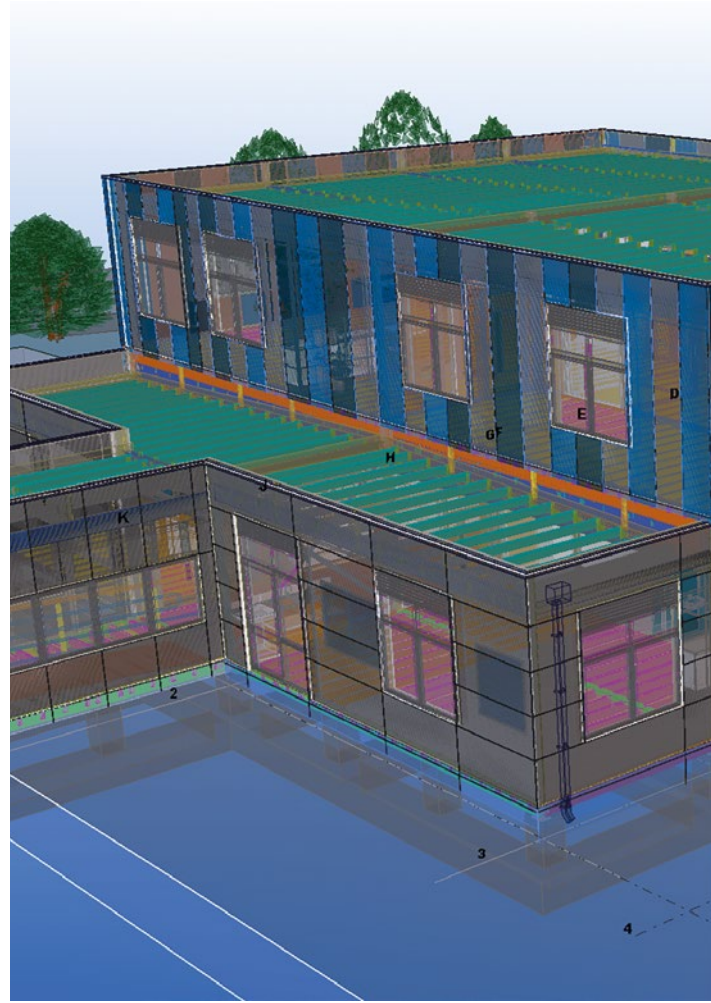
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Young AT impresses at awards

Words by James Evans, Communications Assistant

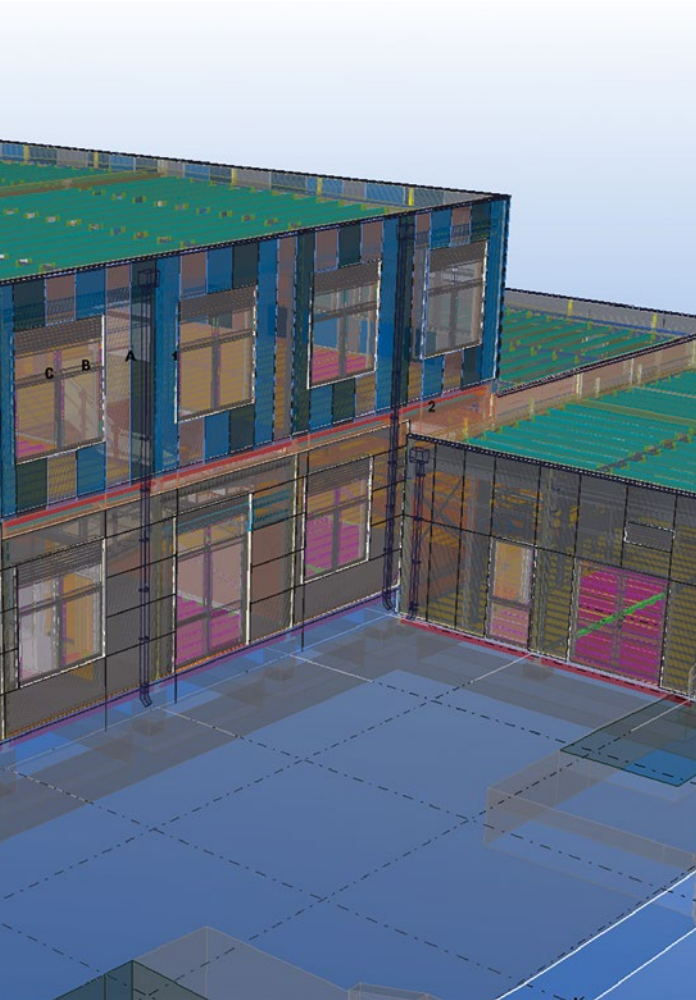
BIM Manager. Lecturer. Chartered Architectural Technologist. These are far from insignificant titles for someone who only graduated from her BSc in 2013 but Hadeel Saadoon MCIAT has held them all. It's no wonder that at the BIM Awards 2018 Hadeel found herself nominated into the category of 'Keep your eye on this one' – the title of an accolade for which she was the inaugural recipient.

It's not her first win. In 2017 she collaborated with a team that won the Best Use of BIM & VR Award at the BIM4SME Awards. Whilst we were organising the interview she was shortlisted for a 'Rising Star Under 30' award by Inspire who aim to encourage diversity in the UK's construction, engineering and housing sectors.

Hadeel is modest about the implied praise. She describes the BIM Award and Inspire shortlisting as 'an honour'. She feels the pressure but regards the accolades as a 'challenge' to 'keep up the good work'.

In 2016 Hadeel joined the McAvoy Group, an offsite construction provider based in Northern Ireland. As a BIM Coordinator she helped integrate clash detection technology. For projects Hadeel worked on, modules were built virtually and run through clash detection software. Reports were produced and handed to the project team who were tasked with rectifying any spatial conflicts that existed between the modules. The models used in the projects were created according to OpenBIM standards. This meant the organisation could remain 'software agnostic' – they weren't tied in to particular BIM packages.

The McAvoy Group engaged in a Knowledge Transfer Partnership (KTP) with Queen's University Belfast. Hadeel was the KTP Associate in this partnership. In practice, this meant transferring information and insights from industry to those in education. Under the supervision



An example of Hadeel's work

of the KTP Academic Supervisor she lectured at Queens once a week. She describes this as a 'really great experience'. It was an opportunity to 'introduce them to offsite construction and modern methods of construction' and help them 'understand what happens in the office'.

Hadeel has not only taught students but also had to train team members at McAvoy in BIM. She was younger than most of them and admits this was 'definitely challenging' but people were keen to learn about new technology. She adds that the company themselves were innovative – her main supervisor was an Innovation Manager who taught 'how to convince people about change'.

Now working at Coventry University, her former place of study, Hadeel is using her BIM skills to capture data on assets and manage facilities.

Does she have any pointers for aspiring rising stars? 'Be open minded...don't get stuck in the old ways of working...be the one who brings change to your practice and brings those new technologies.'

It's sage advice and well worth keeping your eyes on those that follow it. ■

'An uneducated client' ...what an offensive term!

Words by Mark Turner MCIAT, Chartered Architectural Technologist, BIM Manager, AEW Architects & Designers Ltd



These phrases cut through me. The underlying theme is one of satisfaction in doing an average job. There are many reasons why an organisation or individual may be struggling to adopt modern digital methods of working, from a lack of basic knowledge through to simple

fear of change. However, I believe that no matter what, your client should never be blamed or used as an excuse for not improving how you deliver your service.

Remember that the client is purchasing a product from you. It may be that the product is in fact provided by a team or combination of organisations, but ultimately this is irrelevant. The fact is that the customer is buying a product from us as an industry. The product we deliver must improve, as documented in numerous reports over the past 20 years.

So, it begs the question... In what other industry does the supplier (our construction industry) blame the customer for its own failings? The answer is of course none. Nobody else operates this way.

Client focus should be the at the core of your every activity. You may already be doing this without realising. Just as you would challenge a client brief for the scope of the physical building, continue by challenging the client's strategy for maintaining the building. By starting this process, you will be able to work with them to help them find out what can be done better in their organisation. In turn, this will allow you to make better decisions in your own processes, increasing value for everyone.

If you are fortunate enough to be involved early in a project, you have a wonderful opportunity. Take time to get to know your client's internal processes as well as they do. Seek out value opportunities for your clients, and focus on the lifecycle of the building or asset in question – help your clients make better decisions by arming them with the big picture information on lifecycle costs.

If your client is inexperienced in being challenged in this way, then use this to your advantage. Start a joint journey together. You don't need to aim for the stars. Just set out reasonable short-term targets so that each project you do with them is an improvement on the last. If you are simply asked to provide 'BIM' by a client, don't scoff – take the opportunity with positivity. Each client will be different. There is no 'out-of-the-box solution for them all. What is considered value to one, will be different to the next. So, question everything. It is your duty to challenge and advise your client to ensure that they are receiving the best service possible from you and buying the best product they can from your team.

Don't be fooled into believing that BIM is just about data mapping and IFC configurations. Whilst this is undoubtedly a vital part, when starting out remember that at its heart, BIM is equally about people and how we work more intelligently together. ■

@markturnerBIM – Original article published on the Digital Construction Week website

There's no BIM like home Part 3

Words by: Dan Rossiter MCIAT, Chartered Architectural Technologist

Following on from the last issue, *AT Journal* continues its exclusive access to serialise Dan's blog on how he used BIM to produce an information model of his home.

Now that I have established what my Data Requirements and Information Formats are, I now need to consider what Standards I want followed to make sure that the information I receive is right, complete and structured correctly.

It is worth saying (as a member of British, European and International Standards committees) I am a strong believer in adopting a standardised approach. However, often when we are working we deal with standards, instead of a standard.

At BRE, I often audit for our BIM Business System Certification scheme. When auditing, I find it amazing how often I see phrases such as 'BS 1192 amended/ revised/inspired' when referring to naming conventions. What also makes matters worse is when standards are developed often they are not considered holistically and as a result conflict with each other.

As I'm looking at promoting good practice, I will aim to follow existing standards where possible as opposed to producing my own. On the Official BIM Level 2 website, there are six 'core' standards identified which I will be following which are:

BS 1192

guidance on how to produce information using a standard file naming, revision, and suitability code convention, as well as exchanging information within a common data environment. Note: As I am a team of one I will not be following the common data environment exchange requirements;

PAS 1192-2

guidance on what content should be within key documents such as the Employer's Information Requirements (EIR) briefing document, and the BIM Execution Plan (BEP), as well as the relevant information management responsibilities. Note: As I am a team of one I will be undertaking all information management role and will also author all of the documentation.

PAS 1192-3

guidance on the relationship between the Employer's Information Requirements (EIR) and other core documents from the organisation and asset teams, as well as a definition for content included within an asset information model, and guidance on managing the asset information model throughout the asset's life cycle.

BS 1192-4

guidance on how to structure an information exchange to COBie, including how data should be presented, what the expected attributes are, and where to locate recommended type and system attributes. Note: I will be producing COBie compliant content.

PAS 1192-5

guidance on how to define the sensitivity of an asset as well as how to safeguard its information. Note: While my asset is not defined as 'sensitive', I will be requiring safeguards to prevent the release of any personally identifiable information on regarding the location of my home.

BS 8536-1 / BS 8536-2

guidance on forming Plain Language Questions, additional owner and operator information requirements, key employer activities at each project stage, and guidance on post-occupancy evaluation.



Those of you who have been paying attention will have noticed that most (if not all) of these standards have already been referred to previously. These six documents make up the 'core' set of BIM Level 2 standards, but they are not enough to manage a project, so I intend to refer to some additional Standards which will be outlined in future posts.

These Standards (as well as many, many others) will be used to structure my information as well as the key documentation that define relevant standards, methods, and procedures that were used to undertake the production of my information model.

There you have it. I have defined the standards that I intend to have followed. This means that I have now answered another Plain Language Question; PLQ1.4 complete! Now that I know what standards to follow. I need to now establish what Level of Definition is required for my information to satisfy PLQ1.5.

I am only one Plain Language question away from being ready to produce my Employer's Information Requirements. So let's tackle PLQ1.5 and discuss Level of Definition. Now in a slightly different format to usual, I will be tackling Level of Definition with an example; before that let's define Level of Definition. Using the BRE Terminology tool, Level of Definition is: a collective term used for and including 'level of model detail' and the 'level of information detail' – PAS1192-2.

Ok, now to understand what 'level of model detail' and 'level of information detail' are. I will refer to work done by NBS with their BIM toolkit; where there is an article that defines both these terms. In short:

LOD (Level of Model Detail): Is the numerical value related to the amount of graphical detail included within an object related to the digital Plan of Work (dPoW) stages. Objects start conceptually (LOD2), develop to generic representations (LOD3), then developed further to match the geometry of the specified element/product (LOD4), and finally developed to include supporting detail for construction and installation (LOD5).

LOI (Level of Information Detail): Is a non-graphical equivalent of the process described above. Objects start with an outline description (LOI2), then develop to include performance criteria (LOI3), then developed further to include information on the specified element/product (LOI4), then developed to include information on any associated (child) products (LOI5), and finally developed to include installation and maintenance information (LOI6).

The simplest to determine is what Level of Information I need. As I stated when I looked at my Model Purposes and Data Requirements, I will be using my information model to undertake 'Maintenance and Repair' and 'Replacements'. Therefore, I will need installation and maintenance information; requiring Level of Information Detail (LOI) 6. Level of Model detail, on the other hand, is a bit more complex; have a look at this example.

In my home I have an indoor Rabbit called Crempog (Welsh for pancake), he's a dwarf-harlequin rabbit and spends his day roaming the house (eating everything) and at night he stays in a cage. As his cage is fairly expensive and takes up a lot of space, I will want to capture its information, but I was unsure how much model detail I really need? I decided to take matters

into my own hands and produce a few objects. I created three different objects for Crempog's cage. Each has the same Level of Information Detail, but a different Level of Model Detail.

N.B.: As there is no Level of Model Detail definition for Animal Housing (Pr_40_30_04, in Uniclass 2015), an assumption was made by comparing pre-defined LOD4's from Structural Decking where voids are included; and Expansions joints where elements under 10mm are included as justification for modelling the cage bars.

By increasing the level of graphical detail it takes longer to produce the objects and the file's get larger too. Meaning that any detail above what is required can be seen as overproduction (a waste of effort!); it is important to consider how the cage's object will be used and seen (remember, visualisation was not identified as a Model Purpose).

Typically, models are produced to a scale of around 1:50; a balance between performance, resource, and use; matching the coordination view outlined within BS 8541-3. Objects within graphical models are normally used to create other deliverables such as drawings. If you want to create a detailed view (for example, a roof abutment detail) it is much more resource and memory efficient to overlay details over generic model elements instead of modelling every tile, batten, and brick.

For my house, the rabbit cage would only appear on a floor plan drawing, which I expect to be at 1:50 to fit both the ground and first floors on a single A3 sheet. At 1:50 the cage would have bars at 0.06mm spaced at around 0.5mm. Plot lines go as fine as 0.18mm meaning my cage would basically look like one big black blob.

By working through an example, I have decided that I need my Level of Information to be at LOI6 so that operation and maintenance information is captured to suit my Model Purposes, and I need my Level of Model Detail to be no more detailed than LOD3 to ensure that I only model what I need to show.



This means that I have now answered another Plain Language Question; PLQ1.5. Complete! Now that I know my required Level of Definition, I need to establish if I have enough information to create my Employer's Information Requirements to satisfy PLQ1.5.

I am now going to see if I have enough information to draft my Employer's Information Requirements (EIR). So what are the Employer's Information Requirements? Well according to the BRE BIM Terminology tool, an EIR is a: Pre-tender document setting out the information to be delivered, and the standards and processes to be adopted by the supplier as part of the project delivery process.

In addition, PAS1192-2 states that the requirements within the EIR should only contain enough SMART requirements to satisfy the Employer Decision Point aligned Plain Language Questions.

N.B.: It is worth saying that there are strictly three feeder documents for the EIR: Plain Language Questions (PLQs) which I have, as well as the Organisational Information Requirements (OIR) and the Asset Information Requirements (AIR), which I don't. As a one-man client it felt a little over the top, so any Organisational or Asset requirements have instead gone straight into my EIR. If you want to know more about these documents, have a look at PAS1192-3, figure 4, and ISO55000 series.

To capture the layout of my house I will need to ensure that it is developed with an agreed coordination point in mind.



So what requirements do I need to satisfy my Model Generation questions?

2.1 What existing information is available?

I already have a lot of information about my house including a number of condition reports that I will want included as part of my asset information. Luckily, I have already specified how I want this data formatted when I wrote my data requirements, so I will need to ensure that my EIR states the need to include this information.

2.2 Is there sufficient information to produce a BEP?

Before any information is produced I'll need a BIM Execution Plan (BEP) in line with PAS1192-2. The BIM Execution Plan has its own requirements that I'll discuss when I produce it, so for my EIR I'll also need to specify anything in particular I want within BEP, including confirmation of who is undertaking particular information management roles, how various elements will be managed and what information will I be receiving.

2.3 What is the layout of the house?

To capture the layout of my house I will need to ensure that it is developed with an agreed coordination point in mind. In addition, I want it to be delivered in .pdf, named and layered to suit the BS1192 naming conventions, room numbers to BSENISO4157-2, and the use of standard symbology found in BS8541-2.

2.4 What assets are contained within?

To know what assets I have within my home, I will expect a COBie-UK deliverable which includes this information, meaning that the objects will need their property information to comply with BS1192-4 requirements, and be named to BS8541-1. While developing this information model I will also need confirmed how the models will be segregated, if at all.

2.5 What asset information can be linked to the graphical model?

Luckily, I have already specified what information I will need within my assets when I wrote my data requirements so that I have enough information to undertake my model purposes during its operation and maintenance. So, I will need to specify that I want this information included in my information model.

In addition. To receive this information, I will need to know how this information will be exchanged, that it has undergone a sufficient level of rigour in its development and approval, and that it is formatted to suit the software and hardware that I have.

So with this in mind it seems I have all the information I need to produce my Employer's Information Requirements. Using PAS1192-2 and the BIM Task Group's EIR guidance document as a basis, I have now populated a draft set of Employer's Information Requirements.

Now that I have drafted my EIR I need to check how fit for purpose it is, so let's ask a few designers; but first I want to talk about my Smart Home... ■

To be continued in the winter issue.

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The world needs to build more than two billion new homes over the next 80 years



Words by Professor Sean Smith, Director of Institute for Sustainable Construction, Edinburgh Napier University

By the end of this century, the world's population will have increased by half – that's another 3.6 billion people. According to the UN, the global population is set to reach over 11.2 billion by the year 2100, up from the current population which was estimated at the end of 2017 to be 7.6 billion – and that is considered to be 'medium growth'.

The upscaling required in terms of infrastructure and development, not to mention the pressure on material resources, is equivalent to supplying seven times the population of the (pre-Brexit) European Union countries, currently 511m. With the global population rising at 45m per year, comes the inevitable rise in demand for food, water and materials, but perhaps most essentially, housing.

Housing needs are changing

Average household sizes vary significantly between different continents and also by country. According to the UN, recent trends over the last 50 years have also shown declines in household sizes. For example, in France, the average household size fell from 3.1 persons in 1968 to 2.3 in 2011, the same time the country's fertility rate fell from 2.6 to 2.0 live births per woman. In Kenya, the average household size fell from 5.3 persons per household in 1969 to 4.0 in 2014, in line with a fertility decline from 8.1 to 4.4 live births per woman.

Increasingly ageing populations, particularly in developed countries, are causing a demographic shift in future care needs, but it also means that people are staying in their own homes for longer, which affects the cycle of existing housing becoming available each year. One of the most marked changes has been the rise in one and two-person households in the UK and other developed countries.

Statistics published by the National Records for Scotland, for example, reveal the influence of these changing demographics, with future household demand rising faster than population growth. By 2037, Scotland's population growth is forecast to be 9%, with growth in the number of households forecast to be 17%. This 8% difference is in effect the household growth demand from the existing population.

In England, between now and 2041, the population is expected to increase by 16%, with projected household growth at 23%, resulting in a 7% difference in demand.

As people live longer and one and two-person households increase, the number of future households required rises faster than the population. In 2014, urban issues website CityLab dubbed the situation the 'world's ticking household bomb'.

As more developing countries deliver infrastructure and progress similar to developed countries – improving the standard of living and extending life expectancy –

household sizes will decrease, placing greater demand on supply of new housing. So, if this difference between household demand and population growth occurs globally at around 7-8% over the next 80 years, this will require an additional 800m homes.

Taking an average global three-person household (1.2 billion homes) coupled with that 8% demographic factor of total global population over the period results in a need for more than two billion new homes by the end of the 21st century

Meeting the demand

The current and future demand for new housing is compelling governments to push for further innovations in 'offsite' – prefabricated – construction to speed up the supply of new housing. The UK Industrial Strategy published in November 2017 has a strong focus on offsite construction for the future. This sector has grown rapidly over the last decade with new markets in healthcare, education and commercial buildings. But for offsite construction to deliver more houses at a faster rate means looking at alternative solutions to the problem.

Things that slow down the rate that offsite houses are built include the lengthy preparation time required for sub-structures and foundations; delays to the installation of utilities and building services; and a lack of well-trained construction-site managers capable of delivering the complex logistics involved. With more than 65m people displaced by man-made and natural disasters globally, this puts further pressures on countries unable to supply enough new housing as it is.

The issue of availability of materials to meet the demands of constructing two billion new homes emphasises the need for countries to resource them as efficiently as possible. Government policies which encourage the sustainable design of new buildings to maximise future re-use, reduce carbon emissions and manage resources properly will be essential. Over the next 30 years, the countries which promote policies to help sustain and increase new housing provision will be more likely to avoid problems in sourcing materials and price hikes.

For many countries, housing supply is a now a hot topic for national debate and policy strategy. For the rest of the world it will soon become the most pressing issue facing governments this century. ■

Original article published in The Conversation

Human centric cities

Words by Josh Artus, Director, The Centric Lab

All successful long-standing products and services are adaptive and human centric. Our cities should be no different. We should be building on top of smart city technologies to uncover methods to best satisfy and support human needs such as feeling productive and have a sense of wellbeing.

User Experience (UX) design has been around since the 1940s and we live it daily when we visit a great website, use a fantastic phone, or a well-designed car. It has been easy for technology and automotive industries to perform UX research, the parameters for measuring experience were limited and highly controllable.

There was a very direct and binary relationship between the product, how it performed and the user's expectation. This ultimately has been its success in scaling the results globally. This has also highlighted why in urban design the real estate industry and construction processes have lagged behind other industries in adopting these processes. Things are just more complicated with cities and the multiple parameters of influence they possess. So where does one start?

Start with learning about the human.

Advancements in technology in the past decade have pushed neuroscience research forward so much that whilst still a nascent science compared to others, it is now offering a lens on the brain mechanisms

that contribute to perception and experience. Cognitive Neuroscience is the scientific field that is concerned with the study of the biological processes and aspects that underlie cognition, with a specific focus on the neural connections in the brain which are involved in mental processes. It is from this field of research that we, The Centric Lab, and our academic partners University College London believe we can take rich, deep data on how people experience their environments biologically and cognitively and establish principles and guidelines that can inform built environment designers of all kinds with evidence backed UX insights.

When looking at how most people read, observe and learn there is little statistical difference. Neuroscience offers a precise method in how we perform tasks, and how the environment has helped or hindered. It is therefore imperative that further collaboration between the public-private-academic sectors occur to aid this. By orchestrating appropriate



spatial qualities, we can look to help people have the agency to perform their tasks to the best of their ability. We can never control the brain, but we can work harder to ensure that we are not designing spaces, places and areas that hinder our natural human functions.

Economically, this scales out to how cities are impacting citizens. Research is demonstrating that pollution contributes to cognitive decline in the elderly. The most apparent result of this is dementia, the highest combined social care cost in the United Kingdom at around £23bn p/a to the public purse. Further studies demonstrate the impact on children exposed to urban pollution from a young age.

Studies are also demonstrating that city dwellers are experiencing higher levels of stress and little outlets for countering stress, creating a vicious cycle – creating a huge impact on economic productivity of workforce. Whilst stress benefits us in certain situations and doses, the overproduction of the chemicals released during its processes contribute to weakening immune systems, affecting sleep and ultimately mood.

We also have to think about vulnerable or sensitive demographics, such as those on the autistic spectrum, who can experience more acute stress and anxiety in confusing and chaotic environments far easier. If we don't listen, learn and adopt, we run the risk of making our cities places of ill-mental health.

The question we have to ask ourselves is do we choose to make our cities exclusive and unavailable to those not fully normative or high functioning. Or do we take principles from the cognitive sciences and apply them to macro design principles to help with navigation, to help reduce sensory overload induced anxiety, and to provide environments of wellbeing to all citizens?

Do we need to have our brains hacked by machines daily? No.

Do we need to be more patient, ask better questions and do better pre-intervention analysis before we rush building ineffective infrastructure? Yes.

In combining well used tools such as Space Syntax modelling and advanced VR simulated worlds with cognitive experience data, and testing, we can start to unearth a more refined vision of what are good spaces, buildings, environments, streets and city areas. This will be based on their abilities that either enhance or negate the cognitive abilities and functions we as humans need in our complex daily lives. Through machine learning, advanced robotics and smart materials, such as pollution fighting building exoskeletons, we can start to build frameworks that enable a city to act in response to the activities that take place within it.

Neuroscience offers us a tool to add sophisticated layers of information, methods and measurements to build a coherent UX platform for helping design human centric smart cities – cities that are robust and resilient in infrastructure, performance and experience.

As Joseph Pine said in *The Experience Economy*, 'As the nature of economic output changes, so must the efforts that go into it.'

As the purpose of our cities evolve, so must our thinking. ■

@Josh Artus – This piece was published in the run up to the Scottish Cities Alliance – organised Smart Cities breakfast during MIPIM 2018

'Neuroscience offers us a tool to add sophisticated layers of information, methods and measurements.'



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Applying biophilic design principles

Words by Chris Senior MCIAT, Chartered Architectural Technologist, Director, PiP Architecture

As an architecture practice specialising in modern, yet affordable, urban designs, we love the opportunity to try something new, be it the design, materials, techniques or creative use of space. So when we had the opportunity to move to and transform our own new offices, we jumped at the chance to incorporate elements of something we were all very keen on: biophilic design.

While biophilic design is at the cutting edge of architectural thinking, our new office location in central Cambridge is, in fact, a Grade II listed former coach house owned by Jesus College. When we approached the College with the idea of transforming it into a building suitable for our own growing architectural practice, the building had very little going for it. At the time it was being used for storage and had been deemed unsafe after a vehicle had driven into it. Undeterred by the building's derelict condition, we set about converting and modernising it into the perfect location for our own offices, whilst still retaining the character of the original building. A high quality of workmanship was essential in creating a building that both retained the majority of the existing fabric and character of the former coach-house, whilst fitting the needs of a growing architectural practice. This meant great attention to detail and not cutting corners! The damaged parts of the building, for example, were carefully dismantled and rebuilt brick by brick through a hybrid construction method.

The finished building is a showcase not only for our vision but for what can be achieved with a building and its design. Along with the team's effective communication with local planning authorities, expertise in handling conservation areas and listed buildings, and producing designs on time and on budget.

So how did we incorporate biophilic design into this vision? Biophilic design within the workplace should allow humans to interact with nature to achieve better efficiency and wellbeing. We spend huge amounts of our time at our workplaces so why wouldn't we want them to be stimulating environments? Our interactions with them can be direct, such as through plants, water and air; or indirect through the use of natural materials, colours and shapes. The workplace should provide a positive experience of space and place; adopting these basic principles of biophilia will lead to a happier workforce.

Although constrained by a listed building, we used the historic and rich fabric to our advantage, exposing natural textures and colours to provide stimulating experiences when moving through the office. The natural colours from elements such as bricks, pammets and wood continuously take your mind outside as we play with internal and external surface treatments. Outside, we continued to apply the principles, using Corten steel, which is rich in texture, for external planters.

Large windows provide natural light but their main purpose is to provide visual interaction with the natural world within our small courtyards that are heavily planted with various species depending on their orientation.

Inside, we placed plants in every room and positioned them so anyone with their back to the window would still have the benefit of interacting with natural forms. I encourage my staff to care for plants around them to further enforce these bonds.

Every work station within the office has access to an openable window to allow each member of staff to take control of their own environment. Artificial ventilation is also provided to simulate more clement weather should it be required.

We designed the office on split level mezzanines that 'hang' within the original building fabric. As well as preserving the majority of the original fabric, this strategy allowed greater flexibility in designing an open plan working environment over three floors. Every member of staff can visually and verbally communicate with their colleagues on the other two floors. This provides stronger collaboration between all of us and encourages greater discussion over projects, both conceptual and technical.

We are really pleased with how our new environment has created a positive workplace. The renewables help, such as the Air Source Heat Pump, sedum roofs and Pavertherm insulation, but it has to be the constant interaction with nature that has the biggest and longest lasting effect on us. I have seen our team go from strength to strength since we moved here last year. I have no doubt that my colleagues are inspiring but it's obvious to us all...the office helps! ■

@PiParchitecture

I encourage my staff to care for plants around them to further enforce these bonds.



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The remodeled bungalow

A grand bungalow extension and remodel

Words by Alan Signora MCIAT, Chartered
Architectural Technologist, Adapt, Architecture Ltd

Alan purchased a run-down bungalow in Surrey seeing its potential in 2014 and decided to completely transform and extend it into a contemporary family home.

'A heavily sloping site meant some ingenious design features have been employed in order to maintain privacy and make the most of the stunning views of the Surrey hills.'

The design and project management of the project was undertaken by Alan and his team at Adapt Architecture. 'The main prerequisite was to infill the portion of unusable space and to reorient the property to face the garden and make use of its views.'

The build process

The project averaged three days a week on-site, as they still had a busy design firm to run, which is why it was a longer than average build duration taking around 18 months. However, the cost savings were well worth waiting for. Alan called in favours from associate professionals, tradesmen and suppliers. 'We estimated to have saved in the region of 50% on the overall build costs by managing the project, bargain hunting and calling in lots of favours. We got the build cost including the complete fit out and refurb down to under £1000m².'

The project was phased so that myself and my family could live in the existing bungalow almost unaffected until the works were complete, which made the process bearable, as anyone who has lived on a building site will know the disruption and strain it can put on a family!

Alan lives there with his sister Jessica and his partner Beatrice and their baby daughter Ella Nicole born just a few weeks after they completed the project.



The bungalow before and after

Before

The three bedroom bungalow was built in 1950 and was 2.4m above the rear garden level and 1.2m lower than the road at the front. The appeal of the site was a beautiful garden and views over Surrey, however the house was badly orientated and disjointed with the garden.

The design was a two storey infill extension between existing bungalow and large detached garage 12m away from one another, with conversion of the loft space above the bungalow.

After

The rear the property is of a modern design with cedar cladding and white rendered walls, large 6.5m wide x full ceiling height three pane sliding aluminium doors. The doors open out to a large timber curved deck with a gradual stepped seating area to link to the garden level 2m below.

To the front the design is more traditional style. With Clay Plain tile roofs, white rendered walls, and a cantilevered oak porch canopy.

Clever use of dummy roof slopes help give the impression of depth to what are fairly flat elevations.

The sloping site

On entering through the front door from the drive, you are met with views out over the Surrey Hills. The formerly sloping front driveway was built up by ½ metre at the front reducing the driveway slope.

Open plan spaces

Although the living room is open plan to the kitchen and dining space, it was cleverly designed to include a step down living area, closed wall on the staircase side and open oak bookshelf on the other made from left over oak worktop to give the lounge a little privacy and separation between the spaces.



Inside the bungalow

Bedrooms and bathrooms

Two separate staircases were designed to access the first floor. A small staircase on the north side leads to a master bedroom, en suite and walk in wardrobe. Whilst the main oak staircase off the open plan area leads to three bedrooms and a family bathroom.

Exterior spaces

The huge curved patio has been designed to incorporate seating in some of the large curved steps and reconnect the house to the garden. The deck spans the full width of the house around 24m and is 3.6m at its deepest.

Construction

Due to the sloping site, a beam and block floor with underfloor heating and a thick 100mm concrete screed to utilise the largely glazed south east elevation for thermal mass.

A simple block cavity construction for the walls as the house was completely rendered other than a small section on the first floor rear elevation which was battened out with a secret fix western red cedar cladding added.

There was some fairly substantial steelwork at ground floor to make the space open plan, with the first floor dividing walls all in blockwork to reduce sound between bedrooms.

The roof was made up in a warm roof construction for speed and simplicity from the front pitched section to the concealed rear flat roof.

The stairwell has two mechanically operated rooflights which are rain and heat sensed. These were implemented so that in the hot summer months the windows will open automatically and draw out the hot air, creating a simple stack effect. We have also integrated interior sun blinds along the rear sliding doors, as it is over 16m² of glass, which lower the blinds over 24 degrees. I would have preferred to add triple glazed glass and external shading or blinds as this would be more efficient but budget constraints would not permit. ■

If you'd like to watch the build process, a flick book video was created and uploaded to YouTube which you can access via: [youtube.com/watch?v=8tasaGBPHLA](https://www.youtube.com/watch?v=8tasaGBPHLA)



A room with a view



Project notes

- **Project:** Extension and remodel of a bungalow
- **Location:** Surrey
- **Build time:** March 2015-December 2016
- **House size before:** 120m²
- **House size after:** 300m²
- **Plot cost:** £425,000
- **Build cost:** £200,000 (180m² extension)

European BIM Summit 2018

Words by Amina Khanum, Assistant International Director

The Summit in progress



CIAT was a sponsor of the fourth European BIM Summit (EBS) in Barcelona and has supported the event since its inauguration in 2015. This year, the Summit focused on the transition of construction models, virtualisation of each stage of the building superstructure and metropolitan infrastructure.

The Summit's objective is to spread good practice in the use of BIM and its methodologies. The conference was host to professionals from all over the world and representatives from the Institute included Professor Sam Allwinkle PPCIAT MCIAT, Elliott Crossley MCIAT (Associate from Building Design Partnership (BDP)) and Solam Sizer MCIAT (Partner at SA Architectural Services).

Day one – BIM Experience

Solam hosted an hour-long presentation on behalf of the Institute entitled 'BIM in Architectural Practices in the UK', where she spoke about the discipline, implementing BIM Level 2 and brought in her own experience of what this meant for her practice and the benefits.

Solam takes up the story:

I was invited along to give a talk at the university and our practice is currently making a transition to BIM, using Graphisoft ArchiCAD as our chosen platform. I presented this to a room full of interested students and members of the public. During this visit, and my earlier visit to Chile in November, I discovered how Britain is well respected in our use of BIM by professionals from other countries, and for our use of BIM UK standards. CIAT aims to be at the forefront of setting and raising standards on BIM adoption and implementation.

The audience were curious about how our practice has chosen to implement BIM for small scale work. I was able to demonstrate the undeniable benefits of information sharing including the client/consultant and consultant contractor interface by using BIMX software which allows the information to be shared and viewed on a tablet. This innovative and straightforward method of information sharing fosters the kind of collaborative approach, and dialogue, that cuts to the very core of BIM L2 values.

CIAT has a vital role to play, and there is great opportunity in driving forward BIM implementation. Initially it is scary, expensive and slightly unconventional

Amina Khanum speaks with a delegate



to use a BIM approach in small practice, but technology is eagerly embraced by Chartered Architectural Technologists. It is an opportunity for us to underline our ability to lead a multi-disciplinary design team. More than a year on from the Farmer Review entitled 'Modernise or die', if these are the options, then I know which one I'm taking!

Day two – BIM Present

Elliott hosted a short presentation entitled 'Technology is the future of Architecture, but it won't replace you'.

Elliott writes:

Zaha Hadid Architects coined the phrase 'parametricism' to describe their exploratory architectural style, typically a balance of natural and complex geometries, heavily reliant on maths formulae and never homogeneous. With the passing of the studio's founder and namesake, I reflect on the role technology plays in architecture and how emerging systems may shape the future of the industry.

As design concepts are communicated through the life of a project, they are transformed from theory to realisation, from idea to product, via the rational and pragmatic world that is construction. The tools of a designer provide a way to describe their vision, they offer a vehicle to carry the ideology of design and, as such, are slaves to the designer; tools do not restrain, they liberate. By standardising an efficient process, technology can build a foundation from which design is able to flourish.

With the rate of change currently experienced in the architectural toolset, we find ourselves in the midst of an 'era of disruption'; a paradigm shift towards all things digital. Technology is now ubiquitous in everyday life and designers who are not able to adapt will find themselves irrelevant in the future market; being 'boring is always the most risky strategy', pertinently penned Seth Godin. I would also stress the importance of analogue tools in tomorrow's world, noting that technology is not just synonymous with blue light emitted from our computer screens. Tangible models, notebooks, sketches and prototypes are used to convey emotion, provide reflective discourse and generate interest in a scheme.

By clearly and effectively describing the design intention, we are able to collaborate with all project stakeholders more successfully. This is the overriding principle in realising an architectural concept. Through the use of BIM we now create full project databases to take the throne where drawings once ruled. The designer's focus shifts to ensure the integrity of this data, as good quality data becomes the guardian of a good quality product. After all, designers don't provide buildings, they provide information.

Technology in this disruptive era of exponential development brings about its own problems.

Primarily, in the human ability to adapt. New software takes time to learn and even longer to standardise within an organisation, let alone across a national or global industry. Deciding which tool is right for the job can be subjective, but something we should spend effort agreeing if we are to run a design office efficiently. A

basic standard is really the best starting point, even if it simply states the lowest common denominator of opinion to get traction. Appointing a custodian of this internal design process to act as the vanguard of ever-emerging tech is next on the priority list – able to research, develop and apply innovative tools to meet the demand of new architectural ideas and ensure lean office operation – the 'periscope operator' of AEC, if you need a job title.

What recent computing evolution has really done for the architectural practice is exemplified in the power of simulation. Environmental analysis, agent-based modelling and visualisation technology, such as virtual reality, all allow designers to test iterative design solutions to ultimately inform better outcomes. They allow us to measure design quality virtually and react at a point in the project where we are still able to influence change. We are more accurately able to predict conditions before they are born physically, giving opportunity to use design data to assess and validate the end-product.

To meaningfully move the industry forward, evolution alone will not suffice, revolution is the order of the day. Revolution in process. Revolution in people. Revolution in procurement.

If we see BIM as the complete source of project knowledge, then it is within this arena that we exchange intelligence. That can be done most effectively when we speak the same language, through a consistent data structure. In achieving this, it is possible to create a process that exists beyond the architectural office, one that also envelops fabrication, construction, validation and operation. In this scenario, stakeholders are rapidly able to extract and evaluate progress of design quality through visualisation, cost analysis (capital, operational and environmental) and buildability at any stage of the project, as digital design data becomes totally transparent. We can push design iterations through this complete digital loop for instant feedback. We make better decisions.

However, the limiting factor in this set-up is, once again, people. Current contracts monetise risk and the long-term 'blame culture' remains rife in our industry. Trust is not a term we are particularly familiar with.

An architectural output (a building) is a response to a particular set of constraints dictated by a) the project brief b) the project site and c) the chosen construction methods. The barrier that currently exists is that the project site is often the only absolute constant, briefs change as cost analysis is drip fed back to clients, and construction techniques are identified at such a late stage that the cost of design change can outweigh the benefit. Even worse, designers are often contractually obliged not to discuss project needs with manufacturers.

So, post-Crossley's revolution, this digitally enabled common language spoken by all users, all projects, all software, brings constraints around methods of fabrication to the fore, making the supply chain fully accessible to the design team. As the project develops, the designer's transitions from the design lead to a supervisory role (potentially much earlier), ensuring prototyping and manufacture of products and systems adheres to the overall concept. The rhetoric that then takes place allows a designer to manage and co-ordinate the interfaces of all involved.

It is unfair that architecture is often compared to product-driven industries such as the automotive and the aviation world. While the output from our industry is ultimately an 'object', of sorts, there is no mass production here. Each and every project responds to its



**Technology is
now ubiquitous
in everyday life**



unique parameters to deliver a bespoke solution. Some systems within that puzzle may well be off-the-shelf but, ultimately, we create an individually tailored solution for each of our clients.

Technology should be seen as a facilitator for good communication, it should all-empowering for the designer and in no way restrictive. As the environmental impact of urbanization squeezes the construction industry to work harder, we must find tools, processes and mindsets to allow us to appropriately respond. Whilst computing power will help automate, simulate and control, and manufacturing innovation will unlock multi-system pre-fabrication through material technology and robotics, we must harvest new skills to really capitalise; data managers, construction and manufacturing experts, and programming specialists. This isn't future-gazing, it's happening outside right now. But technology is so engrained in our day-to-day lives, it's already becoming transparent.

Sensor technology will lead to adaptive architecture, where occupant data drives the behaviour of the built asset; Responsive design. Smart cities allow us to live more...smartly. It allows firemen to save more lives (Google it). Augmentation will add layers of data on top of reality, personalised and targeted information delivered in new ways. All of which is facilitated by data. Big data. None of this affects the creative process, it embellishes it. Technology is not the place to create, it doesn't replace the creativity of the human mind.

Innovate, lead by example and admit where things are broken. The current industry simply cannot cope with the demands of a growing global population and I don't believe the evolution of what we already have will allow us to adapt quickly enough. The challenges are mounting; we need to build more, in more densely populated areas and in more hostile environments. We need to build quicker, to meet demand, and we need to build better, to waste and emit less.

The ultimate place to create is in the imagination. Technology should not change that, but technology can facilitate a process to meet the challenges of the future, if we let it.

Professor Allwinkle moderated a panel session entitled 'BIM 4 Infrastructures – values for planning, constructing and managing projects'. The session had speakers on 'Games Technology in infrastructure asset design and management', 'BIM for predictive management of road structures' and 'How to apply BIM to infrastructure design'.

Day three – BIM Future

BIM Futures focused on talks by leading BIM authorities, pioneers and keynote speakers who discussed the new developments in BIM.

Sam gave a presentation on 'BIM Process Optimisation: Lean Design, Manufacture, Assembly and Construction' for the robotics, virtual reality and offsite manufacture session.

This paper was jointly authored with Professor Sean Smith, Melanie Robinson and Andrew Livingstone all from Edinburgh Napier University and included the challenges ahead and future growth in offsite construction linked to BIM research and applications for technical design solutions. The presentation included the context of the need of two billion homes globally in the next 80 years (see page 16) and why industrialisation, mass production, automation linked to offsite volumetric units, higher productivity and better integration with BIM enabled design and construction solutions and the need for step change. The opportunity for offsite, lean and performance-based construction utilising BIM is significant for clients and industry and growth is predicted at all levels. The mandatory drive by Government for BIM legitimises the requirement for building projects and the utilisation of this approach. The presentation also included current BIM research such as identifying micro level competency barriers to an effective macro diffusion of BIM in the UK and highlighted the general trend of adoption being positive and the intensity of adoption linked to performance improvements. He also presented a second area of research of the use of automated code compliance (ACC), multi-dimensional data fitting (MDDF) which allows the substitution of a complex, multi-equation structural calculation algorithm with a single equation. This allows for multi-variable problems to be solved simultaneously and thus enables ACC features to be integrated into a SMART BIM component. This is now being used for mass customisation of structural design, a BIM platform for offsite construction and for structural design for timber connections, automated code compliance checking within a BIM environment. The final part of the presentation focused on the need for a BIM based asset register and this was highlighted using the experience of the Grenfell Tower tragedy. There is a major problem with the built environment being that there is no complete registration facility and BIM offers such an opportunity. By utilising BIM for key build periods of construction the creation of an asset register would provide an invaluable resource for future efficiency by understanding the materials, components and buildings as systems. Sam presented robust details for sound insulation in buildings and how this could be broadened to other components and building systems. In conclusion, the recommendation of BIM within a systems approach to planning, designing, constructing and using was essential, if the construction of buildings and their performance in use of the optimisation of product and process is to be achieved.



Day four – Serious Games for Architecture and Construction

A workshop was held on gaming for students at the College of Architects, Technical Architects and Building Engineers of Barcelona, where CIAT was an event collaborator. David Comiskey MCIAT, Senior Lecturer from University of Ulster, opened the event and provided his insight into BeIMCraft (Built Environment Information Modelling Craft) game concept that he has been involved with and was featured in issue 122 AT.

David continues the story:

The purpose of the visit was three-fold, to present the BeIMCraft game concept to professionals and students from local universities in Barcelona, to participate in a GameJam event and to further ongoing Architectural Technology related research projects being undertaken at Ulster University.

BeIMCraft is a modification (mod) of the game Minecraft and is designed to align with real world construction practice, promoting the industry and its various disciplines and roles, especially Architectural Technology, to the next generation in a fun, engaging and educational manner. The game features aspects in relation to health and safety requirements, foundations, structural design, thermal properties and cost as well as aesthetical design. It essentially allows players to think about the technology and structural requirements behind buildings and consider performance related aspects at an appropriate level and in an engaging manner. It is aimed at primary school pupils in the first instance, but the gameplay can be altered and enjoyed by players of any age. A set of lesson plans have been created to assist teachers with incorporating the game into the existing curriculum and highlighting the key learning outcomes which can be derived from playing the game. The lesson plans are incorporated within an eBook which has been developed to provide information on the construction industry, the stages of a construction project, techniques and materials used and an overview of the main professions.

BeIMCraft was presented at the 2017 Summit and the presentation was so well received that I was invited back to present BeIMCraft as an exemplar gaming resource to participants in the GameJam and supported by CIAT. The GameJam brought together students from different universities in Barcelona studying construction related programmes and video game design. The concept was for these students to work in collaboration and to come up with new innovative and exciting game concepts. The GameJam event was included as part of a news item on Spanish television, with the BeIMCraft game also featuring on the television clip. This was excellent exposure and promoted the innovative, diverse and important work taking place by CIAT members to promote and showcase Architectural Technology.

Two of my final year students at Ulster University, Erin O’Kane and Conor McNamee, both student members, accompanied me on the trip to further their own research work in relation to BIM. They met with CAATEEB members and leading construction professionals in Barcelona to gain a better appreciation of BIM implementation in Catalonia and Spain in general and to ascertain how their own research could potentially have an impact in Europe.

Erin’s work is focusing on the performance gap within the construction sector between technical details

which are produced in practice and the actual on-site constructed details, especially in relation to low energy design projects. Erin presented her work to the expert panel and then facilitated a focus group discussion to ascertain the similarities between construction workflows in the UK and Spain. Her ongoing research was recently presented at an International Conference on Small-Scale Intelligent Manufacturing Systems and she has also been invited to present her research to the Northern Ireland All Party Working Group on Construction at Parliament Buildings, Stormont. The research she is undertaking is part of a wider research project entitled ‘Project Verify’.

Erin commented ‘The opportunity to speak with industry leading experts in Barcelona in relation to BIM implementation has furthered my research and provided me with a better appreciation of how my study relates to current practice in Europe in relation to low energy building design and technology integration.’

Conor’s work investigates how a combination of BIM workflow processes and virtual reality can be used to assist small contractors improve their Health and Safety practice. Like Erin, Conor presented his work to the expert panel and then facilitated a focus group in relation to his research. Conor stated ‘It was refreshing to see that the findings from my research aligned with the feedback the experts were providing. Good practice in relation to health and safety is a priority in all countries and I was delighted that the expert panel had seen the benefits in my research and how it could be applied to small contractors in Spain.’

This visit to Barcelona has been extremely worthwhile. It has showcased the innovative work taking place by CIAT members, both Chartered and student, and the presentation on the Architectural Technology discipline was warmly received. Erin and Conor were excellent advocates for the Architectural Technology profession. The feedback from the CAATEEB experts was fantastic, commenting on how impressed they were with the research being undertaken and its potential to make a real world difference. I look forward to further enhancing the excellent relationship between CIAT and CAATEEB.

The Summit had over 450 attendees with 40 presentations on different areas of BIM. The Institute is now looking at other ways of working with the organisers of the EBS for 2019. ■



The workshop in progress

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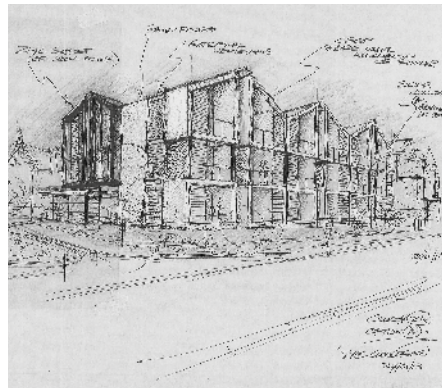
Spotlight on the Australasia Centre

Following on from the previous issue, *AT Journal* meets other members from the Centre.

Mark Scott-Jeffs BA (Hons) MCIAT, Chartered Architectural Technologist

Mark is the Chairman of the Australasia Centre and has worked closely with the Committee to develop the Centre and standing of CIAT in Australasia since the Centre's inception in March 2015.

Originally trained in industrial design, Mark later studied architecture at De Montfort University and was strongly influenced by the Bauhaus movement. He started his architectural career by joining a UK practice in 1982 as an Architectural Assistant. CPD was essentially 'on the job' (OJT) working closely with clients and projects from initial concept through to completion. OJT was invaluable to him and akin to an indenture or apprenticeship in architecture. Eventually becoming a partner in the firm and working on varied projects from chemical factories to licensed premises he remained there until the early 90's. During those times he became accustomed to the boom and bust cycle of architecture, the need for agility and adaptability to accommodate that and the importance of technology and practical 'buildable' solutions. From this grounding Mark branched out to set up his own practice and continued to work on a wide variety of projects including many years in defence work. Mark joined CIAT in 1995.



Some of Mark's work

Mark is unusual in that, although CAD trained, he still prefers to draw and design mainly by hand. Naturally CAD is essential today and he sees industry norm platforms such as Revit, SketchUp, 3D rendering, and other software packages, simply as tools in the toolbox alongside more traditional methods such as card modelling, freehand drawing and that essential ingredient – understanding construction on site and buildability – which is where Architectural Technologists excel. He has also spent time on site, working alongside trades to understand the practicalities of what is being done, which should be an essential part of any professional's training.

Emigrating to Perth, Western Australia in early 2005, Mark joined Campion Design Group (CDG), working with a close-knit team of 20 to create many substantial buildings. Projects typically ranged from \$5 million to \$100 plus million and has won several awards for their work during that time. Amongst their portfolio is the first modular building in Success, WA.

Mark worked with CDG as Associate Design Director until leaving in early 2016 to set up the first CIAT Registered Practice in Australia – Au Design Group. He is pleased to report that support from the Institute has been excellent and networking with his colleagues on the CIAT Committee and elsewhere in Australasia is leading to greater recognition of the profession here.

For AT in Australasia, Mark sees a bright future. The breadth of members skills are illustrated simply by the demographic of the Centre Committee members. Although Mark has a more traditional architecture and design role he is also a BIM crusader and is looking to recruit new blood to the profession in Australasia and across the board. Clients and builders need and deserve a healthy mix of artistry, technical competence and integrity; CIAT members are well equipped to deliver this blend for successful project outcomes.



Subiaco

Birubi Beach Clubhouse



Gerald Lockard BDes MCIAT, Chartered Architectural Technologist

Gerald is an experienced Chartered Architectural Technologist who has worked in various architectural practices and with numerous building contractors in England and Northern Ireland prior to joining Laing O'Rourke Australia as Senior Digital Engineer. After completing a degree in Design and Digital Modelling in Liverpool in 2001, Gerald began his professional working life, developing his knowledge of construction technology and detailing. Over the following years he had the opportunity to work across a number of sectors including residential, commercial, retail and transport. In his current role, Gerald is responsible for the development and integration of BIM enabled

systems and workflows on civil infrastructure projects.

Since achieving Chartered Architectural Technologist status, Gerald has had the opportunity to take on greater responsibilities within projects and project delivery. Notable projects include New Scotland Yard London, working for specialist subcontractor Windell Ltd to deliver the award winning architectural design from AHMM.

Gerald adds 'Sometimes there can be a disconnect between the designer, the manufacturer and the installer. Chartered Architectural Technologists have the technical knowledge and expertise to bridge this gap and oversee the project from initial design conception to completion, skills which are critical in modern construction.'

In Australia the term 'Chartered Architectural Technologist' is not common, but Chartered Membership of a professional Institute is respected and allows individuals to stand out from the crowd. Connecting with fellow members in the Australasia

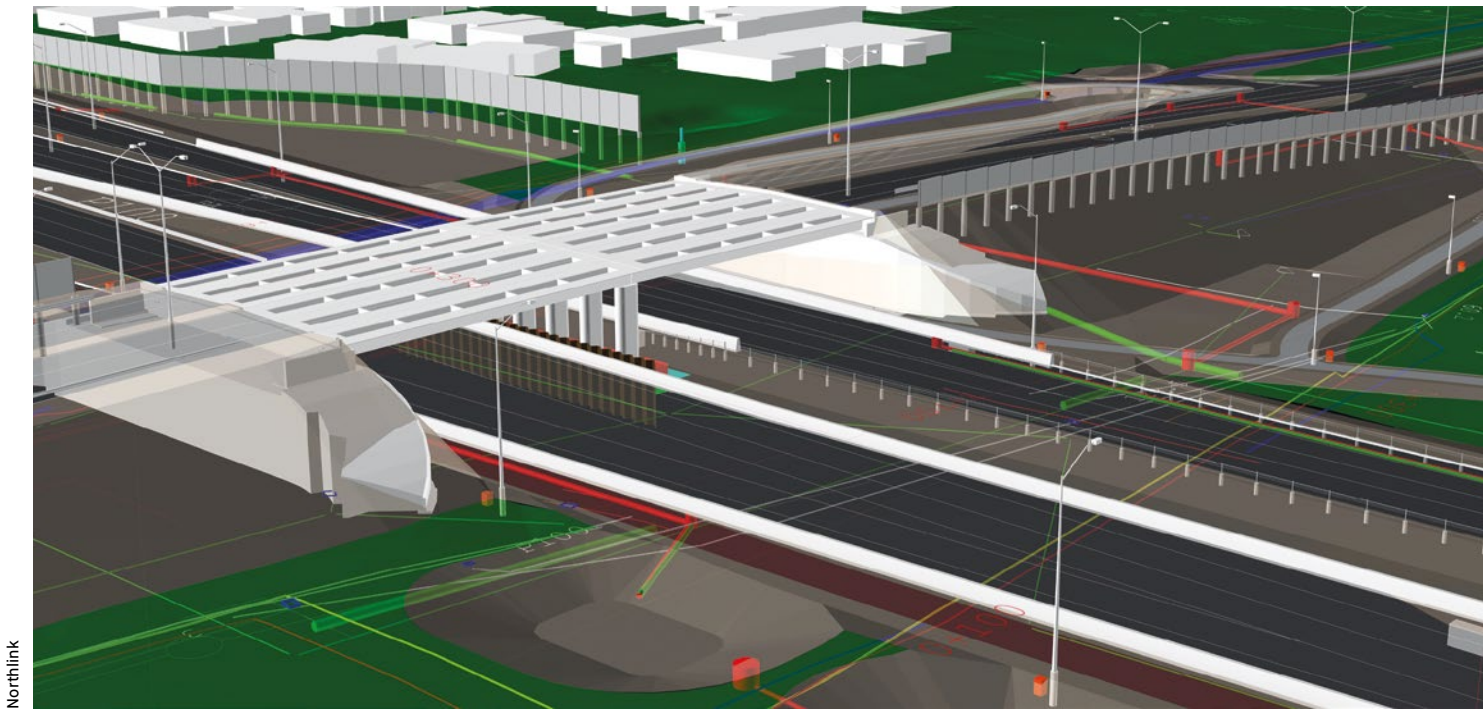
Centre has helped to build Gerald's network and share knowledge and experience from different backgrounds.

Gerald says 'Since I arrived here last year I've had the opportunity to apply my BIM knowledge from the UK construction industry to the AU civil engineering sector, and this has been a great opportunity to learn new skills. Moving from building construction projects to linear infrastructure can have its challenges, but as a Technologist they are challenges I thrive from!'

Hunter Sports High School



New Scotland Yard



Northlink

Gareth Gamble ACIAT

Gareth is currently residing in the Australian city of Newcastle located two hours north of Sydney. Gareth completed his Honours degree in Architectural Technology and Management at the University of Ulster in 2001 and his post graduate Masters degree in Construction and Project Management a year later. Gareth started work for Belfast based architectural practice Gregory Architects until he emigrated to Australia.

During his time at Gregory Architects, Gareth was involved in a wide range of projects from educational, mixed-use, retail, office to high rise apartment developments. Prior to leaving Northern Ireland he was involved in La Salle Secondary School in West Belfast and a number of access upgrades of sports stadiums across Northern Ireland.

Gareth joined Newcastle based EJE Architecture when arrived in Australia in 2007. During his time at EJE Architecture, Gareth had the opportunity to continue to work on a wide range of projects with a focus on educational, mining and aged care projects. In particular, he has worked on documenting Hunter Sports High School which was a new built secondary school to be constructed on the existing school site and the world class Westrac NSW Facility which was a 50,000sqm industrial facility built on a 23 hectare site. He has also worked on a number of other education and aged care projects ranging in construction value from \$1m to \$20m.

Gareth joined NBS in Australia in mid-2017. NBS is committed to offering distinctive, innovative specification and information solutions to construction industry professionals around the world. NBS origins lie in the UK's National Building Specification and has over 40 years experience in developing products to support built environment professionals and construction product manufacturers. More recently NBS has developed an integrated Building Information Modelling (BIM) platform designed to support global design and construction. Gareth is part of the Australia based NBS

Gareth had the opportunity to continue to work on a wide range of projects with a focus on educational, mining and aged care projects



technical team responsible for the development of local content authored to Australian Standards, codes of practice and the Building Code of Australia.

When Gareth arrived in Australia he found that Architectural Technology was not a recognised profession and the role closely aligned to Architectural Technology is known as Building Designers. While experienced Architectural Technicians were respected in architectural practice they did not have the opportunity to have their profession recognised in its own right. ■

If you are a member based in the Australasia Centre or know someone who is there and would like to get involved with the Centre Committee, then you can contact Mark Scot-Jeffs MCIAT, Centre Chair at australasiacentrechair@ciat-centres.org.uk. Alternatively, if you would like to find out about the work undertaken by Central Office to develop the discipline in the Centre, please contact the International Department at international@ciat.org.uk.



Denmark 2018: Celebrating CIAT's year

The AGM weekend will be taking place this November in Denmark, *AT Journal* looks at the full details of the events taking place.

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Annual General Meeting

Saturday 10 November

09:30

Ceres Auditorium, VIA University College Campus C
Free for all members to attend, registration required

The Annual General meeting is the yearly business meeting for the Institute, as per the Laws of the Institute (please see the formal notice). Each Region/Centre has representation at the AGM, which is its Councillor and the Voting Delegates, elected to represent you by your Region/Centre Committee.

The AGM will receive and debate the Resolution(s) put forward. Regions/Centres who wish to table a Resolution for consideration at the AGM will need to advise the Chief Executive in line with the timetable issued in the first quarter of each year. For this year, the deadline is 31 August 2018. Individual members have the right to put submit a written proposal for consideration at the AGM as a Resolution. Such members may approach either their Regional/Centre Committee or the Chief Executive direct. Such proposals must be received as a Resolution by 31 August 2018

In September, following the Council meeting, timings for the AGM will be confirmed along with any Resolution(s). Please register your attendance by completing the online booking form via the website or contacting the Chief Executive's Office.

NB: Consideration is currently being given to how the afternoon may be used; should the business of the AGM allow for another session.

President's Ball

Saturday 18 November

19:00-01:00

Musikhuset, Aarhus

Dress: Black tie and long dresses

Tickets: £95 per person

Table of 10: £750

10% discount for 5+ persons

The President's Ball, hosted by the President, is the Institute's annual networking and social event to celebrate the continued successes of Architectural Technology and CIAT. Tickets include a pre-dinner drinks reception, three course dinner and a night of entertainment with a live band and dancing. The Gold Award recipients will be announced and presented.

Fringe events:

Friday event hosted by the Europe Centre

Friday 9 November

17:00-19:00

Welcome reception at the City Hall, Aarhus

19:00-23:00, organised by the Europe Centre

Committee, dinner with entertainment

Tickets: £35 per person

Open to all members and their guests (subject to space).

A Taste of Aarhus: City walking tour

Saturday 10 November

10:00-12:00

Dress: Casual

Tickets: £12 per person

Whilst the AGM takes place, there will be a city walking tour open to all guests and partners to attend.

Sponsorship

For sponsorship opportunities, please contact Adam Endacott, Communications Director (adam@ciat.org.uk) or visit ciat.org.uk/sponsorship.html

Further information

For further information on the events please contact Rochae Cook-Anderson, Events & Administrative Assistant (rochae@ciat.org.uk)



Notice of the Annual General Meeting 2018

Notice is given that the Annual General meeting of the Chartered Institute of Architectural Technologists will take place in the Ceres Auditorium, VIA University College Campus C, Denmark on Saturday 10 November 2018 for the following purposes:

- To consider the Annual Review.
- To consider the accounts and balance sheet as at 30 April 2018.
- To re-appoint the Auditors and authorise Council to fix their remuneration.
- To receive and debate the Resolution(s).
- To announce the results of the election of members to the Council and Region and Centre Committees.

*Francesca Berriman MBE HonDTech
Chief Executive
June 2018
CIAT, 397 City Road, London, EC1V 1NH, UK*

Honorary Officer elections 2018

nominees standing for election

Following the call for nominations in the last issue of *AT Journal*, each candidate now takes the opportunity to explain why they should be elected.

President Elect Kevin Crawford MCIAT



I believe what we do today shapes the industry of tomorrow. What we do inspires the next generation and stimulates those who have the passion, creativity and wisdom to embrace and drive new innovative ideas.

CIAT is at the forefront of our industry and is a dynamic forward-thinking organisation. As your President Elect, I will endeavour to uphold this ideal through listening to members and industry, to promote our membership, education and the discipline of Architectural Technology.

If elected, my role will be to offer direction and experience to achieve success for the betterment of our Institute, through leading, promoting and protecting the discipline of Architectural Technology and to enhance the profile and brand of CIAT.

Recognition is key to success. The relationships which we nurture are both fundamental and necessary to the CIAT brand. The actions of the President, together with the officers, staff and members all working together as a single voice are the public face of CIAT. Working with the Regions and all of the Centres is key in promoting the discipline of Architectural Technology.

It is our responsibility to shape and mentor the next generation. To encourage the young people of today to become the Technicians and Technologists of tomorrow. As the leading body in our industry, there is no better professional organisation who can provide a home for Architectural Technologists. However, where I feel we lack vision is in promoting the natural progression from Technician to Technologist or even promoting Technicians on their own.

There are no better ways of integrating young people into our industry than by offering apprenticeships, internships or placements to those who would benefit from the guidance and mentoring of a Chartered Architectural Technologist in practice. This is an area I believe we need to develop, fostering closer relationships with employers and engaging with

colleges and universities at local, national and international level to promote Chartered Architectural Technologist practices as viable businesses.

As well as encouraging the next generation, it is my intention to enhance the benefits and services currently offered to our members and to ascertain their opinions on current services and what their expectations are from CIAT.

We must provide a clear indication of what the benefits are to be a member of CIAT. To do this we must first establish what our members do in the workplace. Providing the Board and the Institute's Departments with statistical information would enable us to look at the efficiency of our resources, build a clearer picture of trends, help us plan for the future and provide a better understanding of what services we should be offering.

Finally, as a professional and passionate individual, I have been delighted to serve as your Vice-President Technical and if you were to elect me as your President Elect, not only would it be a great honour, it would allow me to continue to serve and promote CIAT and its members where I would carry out the role with integrity, transparency and professionalism to the best of my ability.

Paul Laycock MCIAT



I am honoured once again to be recognised and to accept this nomination for President Elect of the Institute. I did not seek this nomination when originally taking on the role of Vice-President Education, but after encouragement by colleagues and friends on Council and in the industry I feel more than a match for the challenge and more than able to make a real difference.

In my time, so far, as Vice-President Education we have seen the beginnings of many elements you will find in my full manifesto.

Strengthening of the identity of Architectural Technology, let us now take that identity and celebrate our contribution to the built and natural

environment that shapes and moulds all our lives.

Widening and deepening participation through our membership routes. Membership has grown not only in numbers, but also in its diversity and in the skills and expertise we can now claim as part of the Architectural Technology profession.

Strengthening of our aspirATion Group in many Regions. Giving our younger membership a voice at the highest levels of the Institute.

The re-imagined Research Group growing in strength to develop, promote and celebrate and raising the profile of the Institute. Seeing our members leading the field in all aspects of advanced technical and materials research, strengthening our university based Centres of Excellence and cascading this world leading expertise to our developing members currently in the education system.

Amongst all of this I continue my involvement in Accreditation of our undergraduate and postgraduate degrees. I continue to promote the highest standards of technical and creative excellence, and rising to the new challenge of working towards the Architectural Technology apprenticeship, a critical development in continuing the growth of the Institute and the profession.

I believe it is essential we continue this good work and secure the long term future of our Institute and our profession.

Eddie Weir MCIAT



Those who know me, will be acquainted with how passionate and proud I am of both my Institute and profession. I feel a huge sense of honour, privilege and responsibility in representing Architectural Technology.

Our Institute is at the forefront of our industry and will continue to draw strength from the connections and commitments of its talented people formed through genuine collaboration. For us, context and relevance are absolutely fundamental to everything that we do.

When I sum up all the aims and visions contained in our aspirations, I have to tell you that our future looks exceptionally enticing and the most thrilling part is that a significant proportion will become a reality within the next decade. We need to make stronger and bolder stances on areas that concern us, especially in raising awareness and ensuring fair practice within public procurement.

It is imperative to me that we never lose sight of the bigger picture. For some, it's all too easy to get caught up in the minutiae and sometimes fail to recognise the importance of benchmarking and adhering what we do to our current and future Strategic and Corporate Plans. We sometimes fail to see the impact we have and the endless possibilities in front of us just waiting to be grasped. It's not about reacting to every whim of the Government. It's not about making headlines in the newspapers or stealing the limelight on radio shows. Not yet. We will achieve those goals and more by enhancing our own strong vision of Architectural Technology and by continuing to develop our own strong sense of identity.

Inspire – we must enhance and encourage member engagement especially at a Regional/Centre Committee level. Developing good effective succession planning is critical to continued success and creates an effective process for recognising, developing and retaining top leadership talent.

Promote – as an international organisation, we must continue to improve our communications and visibility by educating and promoting to the wider general public, as to the value the expertise of our members have to offer. Our biggest advantage and value comes from the fact we are able to consider design holistically, by applying our broad range of knowledge to mitigate potential future issues. On a world platform we are held in high esteem by our peers. The contribution, views and the stances we take matter. We must not be complacent about this and must continue to grow and enhance internationally and the great opportunities that comes with this.

Support – the built environment plays a crucial role in how people understand and value the world around them and the pivotal discipline of Architectural Technology is at the centre of this. We must be prepared to have robust strategies in place to deal with what the final outcomes of Brexit may be and offer strong support and guidance members affected by the changes that this and the economic landscape may present.

I consider it an absolute honour and privilege to be nominated for the position of President Elect.

Honorary Treasurer Doug Fewkes MCIAT



Standing for a potential third term as Honorary Treasurer gives me the opportunity to reflect on the work that has taken place over the past four years.

Coming into the post four years ago has seen two significant changes, with a change in staffing in the Finance Department and the recent departure of David Cheddie, Finance and Operations Manager. This along with the revisions to the financial regulations reporting have been a great challenge for the Finance Committee to manage and the changes have been delivered successfully.

This however is not the time to sit back and let these successes simply move along on their own pace. We now need to push on with the next round of challenges.

Our Regions and Centres

Allowing access to online accounts has given more control to the Regions/Centres of their financial allowances. However, with only a small number of Regions/Centres submitting annual returns, suggests that more work has to be done in supporting the development of Regional/Centre financial and business plans. As indicated in my presentation to the AGM in November last, I would like to see all of the Regions/Centres challenge the Finance Committee's allowances identified for the Regions/Centres. To develop Regional/Centre business plans that mirror the Corporate and Strategic Plans which will ultimately see the growth of the Regional/Centre activities supporting the grass roots of the profession, aspirATion Group members, university engagement and more importantly the individual members within each Region and Centre.

Our Departments

The funding of our Departments within Central Office is obviously key to the on-going development of CIAT both within the United Kingdom, our Centres

and internationally. It is now time for the Departments to push on and begin to turn this great work into real returns with income being generated by their activities. Outside of any increase in our general membership, financial growth must come from our widening exposure of the profession nationally and internationally with new membership streams being developed to support the export of CIAT as the architectural profession beyond our shores.

Our Corporate and Strategic Plans

Ultimately being flexible and able to respond to the Corporate and Strategic plans that are currently under review is essential if CIAT is to progress is a key for the Finance Committee. We must be mindful of these ongoing areas of development but also be able to respond when new areas of opportunity present themselves. Having a sound understanding of the Institute and future plans, aids in my abilities to offer insight and advice to the Institute.

In summary, my first two terms as your Honorary Treasurer have seen a number of challenges for the Finance Committee and Finance Department. We have come through these in a very strong position and have benefited from the changes that we have taken onboard. Now is the time to push on with the next challenges for CIAT Regionally, nationally and internationally. To challenge for continued growth in the name and recognition of the CIAT name, brand and reputation as the foremost professional body in Architectural Technology.

I thank you for your support to date and trust that having responded to the challenges of office to date, best places me to face the challenges of the next few years.

Vice-President Technical Steven Hedley MCIAT



My journey with Architectural Technology started when I graduated from

Northumbria University with BSc(Hons). I have amassed a wide range of technical experience working on residential extensions, mass new build housing and bespoke luxury dwellings. Other work has included commercial factories and international stadia, refurbishment works to banks, restaurants and retail units.

I formed Hedley Design Limited, a CIAT Registered Practice, and this has given me experience in the end to end running of a business and extends to roles I have assumed as client, developer, designer and end user. Hedley Design has grown and with the support of our staff, I am now in a position where I am able to dedicate myself to the role of Vice-President Technical.

I have been actively involved in numerous roles in CIAT. At present they include:

- fifth year as Northern Region Councillor;
- second term as an Executive Board Trustee;
- member of the Projects Taskforce;
- regular attendee of the CONIAC SME working group meetings and HSE briefings; and
- member of the Conduct Committee.

With this experience and skill set it has prepared me to accept the role of Vice-President Technical, allowing me to understand the importance of its influence to our members, the Institute and industry.

It is paramount to me the link between our Practice and Technical Department and industry is a strong one. With the relevant CIAT experience, I initially have several objectives I would like to achieve if elected as Vice-President Technical.

This is not an exhaustive list however can be summarised as follows:

- open up our Taskforces to be more inclusive to our Regions/Centres and members;
- develop the prominence of the Practice and Technical Department through AT Journal, website, events, shows and Awards programme; and
- increased collaboration with the Practice and Technical Department and Education Department for universities, events and meetings.

The future is an uncertain one for our industry with Brexit looming, the development of BIM technology, the national skills shortage, Edinburgh school's inquiry and Grenfell Tower tragedy will all hugely influence how we design, specify and procure projects in the future.

CIAT needs to remain forward-facing in an ever-changing industry, and plan for future changes. I believe I am the correct individual to lead the Practice and Technical Department into this period:

- I am a driven proactive individual and operate in a pragmatic manner



and can positively contribute to the Department;

- I have my own opinions and embrace new initiatives, with an open mind when fronted with key decisions;
- I solely have the interests of the Institute and members in mind;
- I have experience in policy setting, strategic direction and management;
- I have strong thoughts on embracing the next generation of members and through working with students and aspirATion groups, I can create a positive link between the old and the new to secure the future development; and
- I have over 18 years' experience and realise the importance of linking theory with relevant working practices.

I look forward to receiving your support in my nomination for the role of Vice-President Technical and welcome any questions you may have during the lead-up to election.

Nominated candidate: Mark Wilson MCIAT



I have represented the Yorkshire Region as Councillor for the past four years and very much enjoyed that role and the interaction with other like-minded members in supporting our Institute and profession.

Working with the Institute, to date I have achieved a number of goals and been a part of a number of initiatives as Regional Chairman and latterly Councillor; these include the creation of the Regional Professional Development Day, initiating council debate over the value of the various grades of membership, which remains ongoing and in 2015 I proposed and co-Chaired the first Region/Centre Summit, this has become a biennial event and brought to the forefront the idea of better and more effective communication between those that run the Institute and the members which it serves.

If I were elected your Vice-President Technical I would seize all opportunities

to utilise assessment of industry trends to help focus on what is important to the development of CIAT and how best that can benefit the overall membership.

I am not alone in having a passion for my profession. The key is to harness that passion to help in our drive forward to realise better industry engagement and recognition of the hugely diverse skillset of our members. We can do this effectively by demonstrating to those that control the construction industry at the highest level that we not only have the knowledge base, but also the vision to be one of the leading professions that recognises the benefits of emerging technologies and importantly how they may be nurtured and best implemented.

As an Institute we have made great progress over recent years in both public and industry recognition. However, in maintaining that momentum I would value highly the opportunity to be involved in the development of new strategies and to bring my own 'can do' brand of thinking to the role of Vice-President Technical.

CIAT is about to embark upon the next five year Strategic and Corporate Plans. Whilst the product of those plans just coming to an end in 2018 has been excellent, I strongly believe that we should be aiming to better those results over the coming five year period and will work to do so.

I value highly the honour of nomination by my peers for the position of Vice-President Technical and I should be delighted if you would read my manifesto, which provides further detail on my aims, goals and aspirations and how we may further increase our influence amongst our industry colleagues. If you agree with the ethos I put forward, please contact your Regional/Centre Committee to ask them to give me their vote. If you are part of a Regional/Centre Committee you will be aware of your influence with your Councillor. CIAT members I am ultimately in your hands.

I should be pleased to respond to any questions you may have regarding my application for the post of Vice-President Technical. You can contact me by email at: mark@designoffice.org.uk

What happens next?

The full manifestos for the nominated candidates have been issued to members by email and can be found on our website. A campaign trail is now in progress with the election talking place at Council on 8 September 2018.

Key dates summary

Campaigning by candidates
25 May – 8 September 2018 inclusive

Election ealerts and updates on the website
25 May – 8 September 2018 inclusive

Election at Council
8 September 2018

Candidates advised if not in attendance at Council

Ealert announcing the election results
10 September 2018

Assumption of position
10 November 2018 close of 2018 AGM

Apprenticeships then and now – what has changed?

Words by Paul Laycock MCIAT, Chartered Architectural Technologist, Vice-President Education

There have been significant changes within education.

Previously, becoming a competent professional involved becoming an apprentice, where the craft and specialist knowledge were learned simultaneously. From there, the shift was for individuals to primarily acquire their knowledge through academic study while possibly seeking out some work experience during this time; followed by gaining relevant employment afterwards. More recently, the prevalent route our members take into the profession has involved studying an Architectural Technology or relevant degree and, where possible, gain experience whilst still studying. During these shifts, a considerable proportion of highly skilled individuals have retired or otherwise left the industry, leaving those that may not have benefited from that knowledge to lead a changing industry.

The vocational nature of Architectural Technology is reflected in the way it is taught, mostly in design studios accompanied by lectures on more theoretical topics. Academia is about preparing students to develop their analytic and communication skills; allowing them to explore ideas and their creativity whilst equipping them with a set of important, yet initially narrow skills which are then to be nurtured and developed further while out in practise. Unsurprisingly, these changes in education have resulted in employers generating their own perceptions of how 'work ready' graduates coming in from the academic routes are – some of whom may still not have had much practical experience.

In response to the skills gap, the UK Government has taken a stronger interest in ensuring that future generations become as skilled and competent as the existing work force. Hence a big push to create opportunities for individuals to earn while they learn, particularly in higher occupational positions when compared to the previous apprenticeship system. This not only allows for individuals to gain a qualification and relevant skills without amassing large debts currently associated with going to university in England and Wales. These opportunities can now be taken up at any age as this restriction has been lifted, affording companies to take on new talent or to retrain/upskill their existing staff.

I will now explain some of the similarities and differences of apprenticeships across the UK. It is also important to note that professional bodies do not lead on the apprenticeship process, however the Institute has been and will continue to support apprenticeships as a route to membership.

The similarities

The levy

As of April 2017, UK employers in every sector with an annual payroll of over £3 million have paid a levy which is how the Government is funding all apprenticeships. This equates to 0.5% of the employer's pay bill and less than 2% of UK employers are paying this levy. The levy is paid each month through the PAYE process much in the same way as paying income tax or National Insurance contributions. Levy payments are a deductible expense for Corporation Tax.

All four Nations are committed

As the UK Government has promised three million apprentices by 2020, all four nations are or will be offering/expanding their apprenticeship provision. Which in turn will boost the UK economy and skilled workforce.

Employer input

To address the skills shortage employers have been able to influence apprenticeships by outlining and prioritising the most necessary abilities across all sectors through relevant training.

A relevant job role where the individual will gain the required knowledge and skills must be in place. Employers are obligated to pay the apprentice a wage commensurate with that role. Additional support would include a professional mentor to be assigned to the individual(s) for the duration of their apprenticeship.

The differences

Apprenticeship funding

Skills are a devolved matter, therefore the apprenticeship systems throughout the UK are different. This includes how funding from the levy is accessed, and what it can be used for.

In addition to the levy, employers in England are able to fund apprentices through two other routes. These include:

Co-funding investment

Employers that do not pay into the Levy, but whose apprentices are aged 19 and over will share the cost of training and assessing their apprentices with the Government by contributing 10% of the cost, with the Government paying the remaining 90%.

16-18 year old apprentices

Employers that do not pay into the levy, but offer apprenticeships to 16-18 year olds receive 100% of the cost of training from the Government. If the company has less than 50 employees, they will receive a £1000 incentive towards apprenticeships.



The allocation of levy money between the four Nations

England Will fund apprenticeship training and assessment. Funds are accessed through the Digital Apprenticeship Service and allocated by the Education and Skills Funding Agency	Wales Policy under development
Northern Ireland Policy under development	Scotland Can be used to fund: apprenticeships; workforce development; pre-employment programs. Allocated by Skills Development Scotland

Apprenticeship structure

Apprenticeships are currently being developed in two ways:

1 Apprenticeship standards

Apprenticeship standards, often referred to as Trailblazer apprenticeships are only applicable to England, where each standard relates to a specific occupation. By completing a standard, the apprentice will develop specific core skills, knowledge and behaviours relating to that role.

There are a range of levels associated with apprenticeship standards; these relate to the academic qualification that the apprentice will gain (i.e. a level 4 apprenticeship is equal to a Higher National Certificate (HNC), a level 6 apprenticeship is equal to a UK Honours degree and a level 7 refers to a Masters level qualification obtained as part of the standard). The two main types currently being developed are higher and degree level apprenticeships (levels 4, 6 and 7).

In order to develop a Trailblazer, a minimum of ten employers must come together to create a standard for a specific occupation or job role within the industry; this is because employers will know which professions require added workforce as well as what skills that workforce should have. It is expected that the Trailblazer employer groups will then employ apprentices for that particular occupational standard.

Once an expression of interest has been approved by the Institute for Apprenticeships (IfA), which is the public body that oversees all apprenticeship activity in England, the Trailblazer group should make contact and consult with relevant stakeholders such as educational establishments and professional bodies regularly to ensure what is proposed is feasible for all involved.

When standards have been finalised, they are submitted to the IfA. These are then approved for delivery or amendments are suggested so that they comply with IfA requirements. Until these are approved for delivery, recruitment cannot commence.

2 Apprenticeship frameworks

Apprenticeship frameworks on the other hand are work-related vocational and professional qualifications which involves training in the workplace and classroom; Wales, Scotland and Northern Ireland have opted for this route. Apprenticeship frameworks allows individuals to develop the required skills, knowledge and attributes within their chosen specialism during the

apprenticeship at a specified educational level (i.e. HNC/ Diploma, undergraduate or Masters level).

Professional recognition

Another draw to the 'earn while you learn' nature of these apprenticeships is that they may allow progression towards professional membership. However, depending on the type of apprenticeship standard or framework, the involvement from a professional body may vary.

For example within English apprenticeship standards there are two ways in which these can be designed: A non-integrated apprenticeship standard is where an apprentice is employed, gains a relevant degree and becomes a particular grade of membership (such as MCIAT or TCIAT) of a particular professional body as part of the End Point Assessment (EPA) of that standard.

An integrated apprenticeship standard is where the apprentice completes a degree while employed in a relevant role. The educational establishment would perform the EPA in this instance by testing the apprentice's knowledge. Should the apprentice wish to become professionally affiliated they would have to pursue this separately. They could however use their apprenticeship as evidence towards their submission.

It is likely that within the apprenticeship frameworks adopted by Wales, Scotland and Northern Ireland the apprentice will be able to use their apprenticeship as evidence towards any membership applications with the professional body of their choice.

To reiterate, the Institute is keen to support apprenticeships as one of the routes into the profession and potential membership. At this time, CIAT welcomes expressions of interest from employers and educational establishments as there are a few standards related to Architectural Technology in development that would benefit from added input. Please email education@ciat.org.uk providing your contact details and type of interest (i.e. educational establishment wishing to deliver an Architectural Technology higher/degree apprenticeship or employers wishing to be a part of a national employer group). ■

Useful resources

Visit ciat.org.uk to find more information about apprenticeships.

For more information visit, the UK Government website gov.uk or Institute for Apprenticeships instituteforapprenticeships.org to sign up to their newsletter for updates.

gov.uk/government/publications/apprenticeship-levy/apprenticeship-levy
gov.uk/government/publications/apprenticeship-levy-how-it-will-work/apprenticeship-levy-how-it-will-work

To create an apprenticeship standard in England: instituteforapprenticeships.org/developing-new-apprenticeships/

For additional information on apprenticeships in:

- Scotland please visit: apprenticeships.scot/take-on-an-apprentice/
- Wales please visit: gov.wales/topics/educationandskills/skillsandtraining/apprenticeships/?lang=en
- Northern Ireland please visit: nidirect.gov.uk/campaigns/apprenticeships

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Architectural Technology: Professional Insight events

Are you a student or recent graduate or work in practice? Would you like to find out more about Architectural Technology and meet those that are putting it into practice?

Look out for one of these events near you throughout 2018

CIAT is hosting a free nationwide roadshow series of *Architectural Technology: Professional Insight* events throughout the year.

The event will provide inspiration and insight into a career in Architectural Technology.

Events will be promoted in AT Weekly and by email.



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Ensuring compliance with the Code

Words by Paul Forrester, profile candidate

Choosing not to renew membership of the Institute, which I've held for the best part of a decade, was not a decision I took lightly – and in the end, I'm happy to say it was a decision I didn't have to see through.

Changing times

My day-to-day work is completely different to when I first received the ACIAT designation in 2008. Then, I was part of a small, thriving architectural practice in Cheshire, widening my experience of domestic and commercial projects, and happy in the certainty that, one day, I'd be running jobs from start to finish.

Progressing to Chartered status was always the plan, but having a plan doesn't guarantee that it will be stuck to. Throughout much 'umm-ing' and 'aah-ing' over starting my POP Record, my relationship with work gradually changed and I eventually took up a different role within construction, working for an insulation manufacturer.

(Readers with a well-maintained AT archive can go back to the winter issue 2013 and find a piece I wrote on the subject of U-value calculations).

At the end of 2017, I decided to continue my technical writing, support and advice work in a freelance capacity. The bulk of my time is spent authoring and editing articles and technical literature, with a few U-value calculations every now and again. There are no design briefs, planning applications or site inspections; no similarities to the architectural practices I was once part of.

To my mind, I certainly didn't have my own practice.

It feels strange to admit this, even more so to commit it to words, but earlier this year I briefly thought I needed to leave CIAT.

experience, where you learn by doing. As a result, it's easy to get swept up in the excitement when, actually, you'd be better served taking a step back and pausing for a moment of reflection.

It's also easy to assume that a professional institute finds change difficult, and that it might not be equipped to cater for the way in which we now work.

In fact, the opposite turned out to be true. Years of contentment with my ACIAT designation hadn't prepared me for the possibility of change, and my view of what constituted 'a practice' was so rigid that I didn't believe my new career would interest CIAT.

When it turned out that I did indeed need to register my practice, I had to make a decision on becoming a profile candidate. Mistakenly, I believed being a profile candidate would obligate me to pursue Chartered status – something which I don't believe suits the nature of my work. It was at that point I thought I had a decision to make...

A helping hand

For many CIAT members, reading about how the Institute has adjusted to the changing needs of its membership will not be news. For the rest, however, a reminder of its adaptability may be welcomed; it was certainly welcome for me.

My experience only served to highlight, somewhat embarrassingly, how unfamiliar I had become with CIAT policies. As much as I endeavour to act with professionalism in all aspects of my new business, too much of what I learned about CIAT's expectations of me, and registering a practice, came as a surprise.

How you view your work from your own little bubble is distinctly different to somebody not caught up with keeping the plates spinning, and I'm grateful to the Institute's Practice Department for providing much-needed clarity and perspective.

Should you find the path of your own work starting to change, they are on hand to help you steer the course and continue abiding by the Code of Conduct. I'm now a profile candidate, and happy in the knowledge that I'm part of a community pursuing the discipline of Architectural Technology in any number of diverse ways. ■

Find out more about Paul and his work on his website, TheWritingMan.com

My experience only served to highlight, somewhat embarrassingly, how unfamiliar I had become with CIAT policies



Getting carried away

Setting up a business and embracing new ideas and opportunities outside the structures of 'conventional' employment can be a whirlwind.

Even working in a familiar subject area, so much is novel and often daunting. It's a perpetual learning

The Code of Conduct states: "only Chartered Members and profile candidates may act as principals and offer and/or provide services directly to a client". As explained in the Requirements for Registered Practices 2.11 "...The reason for this is that only Chartered Members have demonstrated to the Institute their skills and competences..."

The profile candidate route is there to allow those who have not yet had the opportunity to progress to Chartered Membership, but are practising on their own account, to remain in compliance with the Code. In response to changing times, CIAT expanded its criteria to qualify. As a result, the Chartered route is

no longer restricted to traditional skills but allows those members with specific skills in other areas of Architectural Technology to demonstrate their specialist abilities and qualify. Our Membership Department would be happy to discuss this with any profile candidates out there looking to progress. Remember though, that if you are providing a service on your own account, you will need to register your practice, and if necessary, transfer to profile candidate type b while you are progressing. The obvious benefits of being Chartered would be the designation "MCIAT" which demonstrates clearly to your potential clients and employers your competence, and differentiates you from those that are not qualified.

Republic of Ireland Centre, C2 news

BS 8300 – Design of an accessible and inclusive built environment

The revised standard aims to give the design information needed to create an inclusive built environment that works for as wide a range of people as possible – including older people, disabled people, and children, from the outset of a project.

The revised BS 8300 now comes in two parts: Part 1: External environment – code of practice and Part 2: Buildings – code of practice.

Part 1 primarily covers access in and around the external environment and approach to buildings such as parking spaces, access routes, and the entrances to buildings. Part 2 provides guidance on access within a building, including facilities provided inside the building such as entrances to buildings, including outward opening doors and windows, and interiors of buildings such as entrances and reception facilities.

BS 8300 is regularly referenced in Technical Guidance Document M 2010 – Access and Use, as a source of further information in relation to numerous matters relating to Part M of the Building Regulations including:

- Building management
- Slip resistance
- Designated car parking
- Sanitary facilities
- Audience and spectator facilities
- Signage
- Visual contrast

As such it is considered prudent to reference the latest updated version of BS 8300 when further information is required in addition to the guidance given in Technical Guidance Document M 2010.

Building Control Regulations

At the request of CIAT, in January 2017 the Department of Housing, Planning, Community & Local Government, together with the Law Reform Commission has published a consolidated version of the Building Control Regulations 1997. This incorporates into one comprehensive document, the original Regulations together with all the amendments between 2000 and 2015.

It may be downloaded from the Department of Housing, Planning, Community & Local Government website (housing.gov.ie) under Building Standards/ Building Regulations/Building Control – Revised Building Control Regulations 1997 (S.I.496 of 1997) or alternatively from the Law Reform Commission's website, revisedacts.lawreform.ie

Planning

Three new Statutory Instruments have been published by the Department of Housing, Planning, Community & Local Government. They are SI 29, SI 30 and SI 31 of 2018 and are amendments to the Exempted Development Regulations giving exemption to certain works by Irish Water, residing above a retail establishment and statutory undertakers of telecommunications systems. ■



Plaque presentations for AT Awards 2017

Plaque presentations took place during March and April for the winners of the Architectural Technology Awards 2017.

On 23 March, a presentation was made to Lee Evans Partnership LLP who received Highly Commended in the Award for Excellence in Architectural Technology for The Family Stand, Dover Athletic Football Club. Also in the South East, the Commended category was presented to Mitchell Evans Architects for Fieldsend on 27 April.

The presentations were made by Kevin Crawford MCIAT [not shown here], Vice-President Technical and Alex Naraian, President to Lee Waters of Lee Evans Partnership LLP





Alex's Insights

Does our title define us or do we define our title? It's a question of identity

Words by Alex Narayan PCIAT

For those who are active on LinkedIn, you may have seen the suggestion that we should consider changing our name as an Institute and our title. What is sometimes suggested is that we re-badge ourselves as Technical Architects or something of similar ilk. Those who suggest this often do so with the right intent as they believe that such an alternative title might be more readily understood by the general public.

However, I do not share or agree with this. In fact, I am strongly against this and believe this would impact negatively on our profession, who we are and what our discipline is in practise, if we were to follow such a path for a combination of reasons.

Our title does not define us, but we as a profession define the title and continuous evolution.

It is enshrined within our Royal Charter that we are 'to promote, for the benefit of society, the science and practice of Architectural Technology; to facilitate the development and integration of technology into architecture and the wider construction industry to continually improve standards of service for the benefit of industry and of society; and to uphold and advance the standards of education, competence, practice and conduct of members of the Institute thereby promoting the interests, standing and recognition of Chartered Members within the industry and the wider society'.

It is also a collective responsibility of ours to actively promote our discipline and why our distinct profession is unique, together with its value, impact and critical importance within the built environment process, and how it is complementary to our fellow professionals. It is about confidence in ourselves and not about re-badging our descriptor for a simple solution – which is incorrect – and which would lead to confusion and blur us with other professions, rather than celebrating our unique and necessary differences.

**Promote the discipline,
profession and brand, with
pride and vigour**



There is a myriad of opportunities to spread and widen our reach



In support of your profession, our website provides descriptors, explaining what a professionally qualified Architectural Technician is and does and likewise for a Chartered Architectural Technologist. We have a suite of AT documents for use by members for promotional purposes, for clients, employers, careers, colleagues etc. Get 'tooled up' as these documents are here to help you as is the staff at Central Office.

So here are a few tips of the attitude and behaviour I choose to employ. I find that these help shape and hone my character, which in turn helps me in raising awareness of our profession:

- Be positive in your approach when challenged, be enthusiastic about the discipline its vibrancy, growth and importance. This positive approach breeds positive response and people gravitate towards positive and enthusiastic personalities.
- Look for opportunity all the time. If you looking out for opportunity, you will spot it.
- When asked what Architectural Technology is, view this as another opportunity to spread the word. I am always pleased when this question comes up. It's a great conversation opener.

Understand that we are still a relatively young profession so demonstrate how you collaboratively work with other professionals. In this comes the opportunity to showcase that we are distinct, recognised and equipped for the needs and challenges of the future of the built environment.

Remember and understand that:

- we are leaders, influencers and solution finders;
- we are creative, innovative and are at the cutting edge of technological advances in architecture;
- we have a worldwide brand and a global presence;
- we collaborate and partner with our fellow key influencers across the UK and globally;
- accept that it will take patience and continued effort; and finally
- we are the technology of architecture.

If you want society to know who we are and what we do, then we together as a collective have to put the effort in. If it is a shared and united effort it is easier for everyone.

There is a myriad of opportunities to spread and widen our reach. Here are just a few that are available to you, which I invite you to consider:

- spend a few minutes each day on LinkedIn, Twitter and Instagram – to engage, comment and debate;
- represent the Institute at various shows and events, such as Grand Designs Live, The Ideal Home Show etc.;
- join and support your aspirATion Group or Regional/Centre Committee and help raise awareness;
- attend local business networking groups, such as Construction Networking Breakfasts;
- represent your discipline on a CIAT stand at a local careers fair;
- speak at shows/events;
- collaborate with a local school or university – guest lecture, offer summer placements, or work experience – invest time back in education;
- attend Regional/Centre collaborative events with partner organisations, such as RICS, CIOB, RIBA, etc. Stay for the networking bit, rather than side off and seize that opportunity to find out what other professionals do, but equally spread the word about what Architectural Technology is; and
- speak with Central Office about how you can get involved. They are just a phone call or email away.

Like everything in life, you get out what you put in. Be creative, be persistent, be positive and do not give up. Step out of your comfort zone. So, I encourage you to make the following choices:

- choose a positive attitude;
- choose to help widen and broaden our reach;
- choose to review the resources available on the website and get clued up; and
- choose to get involved.

Promote the discipline, profession and brand, with pride and vigour; just think if all 10,000 members did this what an impact we could have... wow, and the impact it could have on you and your career!

The outcome is that you will find that our followers and influence continue to grow.

I'll end on this quote which inspires me by Edmund Burke, an 18th Century Statesman, 'Nobody made a greater mistake than he who did nothing because he could only do a little.'



aspirATion events

A look at some of the work of the Institute's aspirATion Groups.

Scotland East

At The Robert Gordon University on 7 November 2017, Scotland East aspirATion Group presented two inaugural Awards at the annual Scott Sutherland Prize giving Ceremony. aspirATion Chair, Jamie Yorkston MCIAT presented alongside then President Gary Mees.

They were:

aspirATion Best Stage 3 Project presented to Scott Murray and the aspirATion Best Stage 4 Project to Lauren Livingston ACIAT.

Lauren reports on her award winning project:

My final year studio project was based on the Redevelopment of the Indoor Market, Market Street, Aberdeen. The brief for the project was for the demolition of the current market and replacement with a similar building which engages more with the surrounding area on a social and environmental level. The aim being to create an exciting, social, meeting space, while reconnecting the market with the history of the site and surrounding area.

The final proposal was designed within the footprint of the existing market and provides more approachable entrances engaging with the surrounding streets and connecting with the Green to the rear of the building. Allowing temporary markets to spill out onto the Green and connecting with the local community.



Connor Milton ACIAT makes the presentations



Work by students at the Northern aspirATion Group Professional Development Day

The focus of the project was the design and development of the interior spaces, making the areas exciting, interactive, providing an accessible route joining each section together. The main influence for the design came from Europe street food markets and social environments they create.

The Bar Area became the focal point of design, designing an intimate space that used a mixture of recycled and raw materials. I wanted to create booth/pods to allow relaxing social spaces with the Bar Area. Creating containers filled with stacked plywood with built-in lighting, taking influences from Kengo Kuma, 'Shun * Shoku Lounge.' To make the space feel enclosed and reduce sound travel throughout the market a suspended timber ceiling was designed incorporating lighting features. The ceiling also acted as a design feature for the walkway on top of the containers.

Scotland West

Scotland West aspirATion Group held a pilot programme with the City of Glasgow College called the aspirATion awards. Lecturers were asked to nominate a student from each programme and was sponsored by Xtratherm. The awards were presented at the End of Year Show by Group Chairman, Connor Milton ACIAT.

Northern

The Northern aspirATion Group had a great 2017. We hosted several CPD events, attended careers events for various ages across the North East, held a Professional Development Day and attended the AGM weekend in Newcastle.

To end the year, we held a social event to network in a relaxed setting. The event was held at Lane 7 in Newcastle, where we enjoyed ten pin bowling and mini golf. It was a great way to end the year by socialising with new people/potential members and to celebrate the successful year we have had as a Committee.

We booked a couple of lanes in the retro style bowling alley, which is a modern take on traditional ten pin bowling. Afterwards, we made our way downstairs to the inside 9-hole mini golf course which was great fun with added healthy competition. It was interesting to be in a well-designed building which really uses the tight space to the full, as well as creating a relaxed environment, a great experience for a group of Architectural Technologists!

Harriet Rose ACIAT ■

Membership News

Chartered Members

We would like to congratulate the following members who sat their Professional Interview and have attained Chartered Membership, MCIAT:

025131	Paul Bull	North West, 03
030267	Susan Darbyshire	North West, 03
015677	James Chester	East Midlands, 04
017629	James Cunnington	East Midlands, 04
031117	Justin Yeo	East Midlands, 04
032632	Tom Burford	West Midlands, 05
024511	Suneil Ram	West Midlands, 05
031623	Hadeel Saadon	West Midlands, 05
027710	Thomas Cannon	East Anglia, 07
023631	Stuart Farr	East Anglia, 07
026590	Steven Hall	East Anglia, 07
009613	Barry Hill	East Anglia, 07
020170	James Lewis	East Anglia, 07
025692	David Rogers	East Anglia, 07
025580	Liam Donohue	Central, 08
018595	Chris Durham	Central, 08
024728	Vaseema Hussain	Central, 08
024786	Frances Peacock	Central, 08
031954	Sheikh Akmal	Greater London, 09
032101	Gerard Judge	Greater London, 09
032279	Shameel Nanuck	Greater London, 09
025824	Woshil Shrestha	Greater London, 09
021474	Graham Anderson	South East, 10
025953	Ewelina Nozynska	South East, 10
028214	Lawrence Collins	Western, 12
032094	Vladimir Hlavaty	Western, 12
019212	Keith Allardyce	Scotland East, 14
020830	Michael Sloan	Northern Ireland, 15
027101	Gari Evans	Wales, 16
019012	Alun Roberts	Wales, 16
023751	Gavin Roberts	Wales, 16
024585	Benjamin Wright	Wales, 16
013943	Declan Byrne	Republic of Ireland Centre, C2
032542	Seamus Harvey	Republic of Ireland Centre, C2
018898	Emma Hayes	Republic of Ireland Centre, C2
023307	Karl O'Reilly	Republic of Ireland Centre, C2

Technician members

We would like to congratulate the following member who has successfully progressed as an Architectural Technician, TCIAT:

025776 Kay Richardson Yorkshire, 02

Welcome back

We would like to welcome back the following Chartered Member:

014455 Thomas Wade West Midlands, 05

In memoriam

We regret to announce the death of the following member:

011143 Richard Cowling East Midlands, 04

Northern Region make presentation to charity

On 2 May 2018, the Northern Region made a presentation to CHUF (The Children's Heart Unit Fund) at Freeman Hospital, following the successful fundraising evening last November, hosted by the Region, as part of the AGM Weekend.

The event raised £2500 for the charity that raises vital funds for large and small pieces of equipment, facilities, aftercare, salaries and research. CHUF's charitable activities however, go far beyond that of providing medical equipment and personnel. The Charity provides holistic care to the children by providing services and facilities that allow Heart Heroes to develop their skills and mature as any healthy child normally would.

Steven Hedley MCIAT, Regional Councillor, said 'We are delighted to have raised so much money for the charity. The event was a huge success and a great opening night of our 2017 AGM Weekend. Thank you to everyone involved'.



Left to right, Phil George MCIAT (Regional Treasurer), Jacques Pienaar MCIAT (Committee member), Shannon Hands (Community fundraiser, CHUF), Rosie Johnson ACIAT (aspirATIOn Group), Chris Bird MCIAT (Committee member)

Correction and apology

In the last issue of AT Journal, page 31, the feature was entitled as 'Africa's first MCIAT'. It should have read 'First MCIAT working and living in Uganda'. Apologies to Members who have qualified as Chartered Members from Africa pre Andrew's achievement. The first Ugandan Chartered Member was K. David Semakula MCIAT.

David is currently working as Technical Coordinator at Berkeley Homes (East Thames Region). Originally from Entebbe, Uganda, David's Chartership progression began after graduating from the CIAT Accredited Architectural Technology Honours degree at the University of Bolton.

AT CPD Register Directory

For full details please visit ciat.org.uk/education/cpd/cpd-register.html

CDM

JRA CDM

This one-day, interactive, introductory course will equip delegates with the knowledge and understanding to undertake the new CDM2015 Principal Designer role on small and medium sized projects.

Cost/fee for attendance: £150.00

Contact: James Ritchie
E: james@jamesritchie.com
T: 07785915687
jracdm.com

BIM

BIM Strategy and Concepts (ACM015) and BIM Application (ACM016)

Learning will take place through the Robert Gordon University virtual campus with a mix of online lectures, tutorials and self guided study. Each topic within the module will have a number of self required and obligatory activities aimed at emphasising the learning.

Cost/fee for attendance: £600 per module

Contact: Professor Richard Laing
E: r.laing@rgu.ac.uk
T: 01224 263716
rgu.ac.uk/bim

How Virtual Reality saves time and resources (VR for Architecture)

To demonstrate how the sensation of actually being inside a building makes VR a powerful and money saving tool for communicating design intent.

Cost/fee for attendance: a nominal fee of £10 for the VR viewer

Contact: Scott Berry
E: scott.berry@applecoredesigns.co.uk
T: 0121 447 7788
applecoredesigns.co.uk

Building Regulations

Reducing the Performance Gap Through Fabric First

The presentation will improve understanding and confidence regarding insulation and how it is used; how its performance is measured; the role of the designer/specifier in ensuring that manufacturers provide accurate U-value calculations and

condensation risk analyses; and where insulation works with airtightness and thermal bridging details to contribute to a 'fabric first' approach.

U-value Calculations and Condensation Risk

This presentation will improve understanding and confidence regarding insulation and how it is used; how its performance is measured; the role of the designer/specifier in ensuring that manufacturers provide accurate U-value calculations and condensation risk analyses; and where insulation works with airtightness and thermal bridging details to contribute to a 'fabric first' approach.

Cost/fee for attendance: free to groups/practices

Contact: Lee Buckley
E: buckley.lee@recticel.com
T: 01782 590470
recticelinsulation.co.uk

Rainscreen Cladding: Compliance with BR135

Topic areas for this CPD course include Rainscreen Cladding, BR135 and Fire Performance of External Thermal Insulation for Walls of Multistorey Buildings.

Part L1A 2013 - Fabric Performance and Towards Passive, NZEB Targets

Topic areas for this CPD course include Building Regulations - Part L1A 2013 targets and corresponding specifications, Thermal Bridging and Airtightness Targets.

Section 6 2015 Scotland – Fabric Performance and Towards Passive

CPD topic areas include Building Regulations - Section 6 2015, Thermal Bridging and Towards NZEB/Zero Carbon House/Passive Standards.

Conventions for U-value Calculations – In accordance with BR443

Topic areas for this CPD course include Standards for U-values Calculations, Fabric Performance, Thermal Measurement and BR 443 Conventions.

Contact: Linda Smith
E: marketing@xtratherm.com
T: +353 46 9066079
xtratherm.com

Materials

Low carbon GRP daylight solutions for the metal building envelope

The seminar delivers an understanding of how rooflight choices in relation to key performance requirements can impact on the overall contribution rooflights can make to the metal building envelope.

Cost/fee for attendance: free

Contact : Nicola Hancock
E: nicola.hancock@ncsservices.co.uk
T : 07956 847533
hambleside-danelaw.co.uk

Other

Using Drone Technology within architecture

This half-day, interactive, introductory course will equip delegates with the knowledge and understanding of how the latest advances in drone technology are changing and enhancing traditional architectural working techniques.

Cost/fee for attendance: £49.00

Contact: Ian Tansey
E: ian@prodroneworx.co.uk
T: 07805 864642
prodroneworx.co.uk

Loft insulation isn't working – what can we do about it?

A one-hour online CPD module by LoftZone will explain the 'in-use factors' that limit the effectiveness of loft insulation; the research by the National Physical Laboratory and Carbon Trust that show how widespread these factors are; traditional insulation and building methods which are no longer appropriate; alternative techniques to maximise insulation performance; specific design considerations and a U-value calculator and safety requirements in lofts.

Cost/fee for attendance: free

Contact: Dave Raval
E: cpd@loftzone.com
T: 01483 600304
loftzone.co.uk

BREEAM Associate

This BRE Academy course has been designed to help understand, in depth, the essence of what BREEAM is about, what it involves, and how to successfully support the BREEAM process day to day.

Cost/fee for attendance: £195
breeam.com

AT CPD Register

CIAT offers an online platform for members to find relevant courses on a range of topics to support their professional development.

The CPD Register is a directory of providers whose courses have been deemed by the Institute to be of a high standard, current and relevant to Architectural Technology professionals.

How to apply?

Providers are able to apply to become a part of the Register by submitting their course(s) online*. The total cost of having CPD course(s) provider by educational establishments is £636 and for other organisations the price is £939, these prices are inclusive of VAT. This includes the price of a non-refundable administration fee of £30 + VAT.

Accepted courses will be added to the Register within 28 days of applying.

How will CPD be assessed?

Content will be assessed according to its currency, relevance and how professionally beneficial it is to members of CIAT. This includes determining whether:

- The aims and objectives outlined, the mode in which the CPD will be delivered, duration, location as well as intended audience are appropriate.
- Promotion of service(s) and/or product(s) has been kept to a minimum.
- The course content relates to the CIAT Professional Standards Framework or the built environment industry.

Visit ciat.org.uk/education/cpd.html for further information about the CPD Register or email Holly Banks, Education and CPD Administrator on Holly@ciat.org.uk.



Benefits of being on the Register include:

- A designated page in the CPD section of the website which will list your course(s) for 12 months*;
- All courses on the Register will be referred to as 'CIAT Certified CPD';
- Your course being promoted through CIAT's social media platforms including Twitter, Facebook, LinkedIn and Instagram upon approval, and as a 'CPD course of the week' on a rotational basis amongst other providers thereafter;
- Receiving AT weekly, an e-newsletter;
- Receiving AT Journal, a quarterly magazine;
- A full page advert of your course in AT Journal;
- A double page spread of your course as well as periodic features through 'Spotlight on ...' an article series that serves as an opportunity to promote your course in AT Journal;
- Visibility at relevant trade shows by distributing literature regarding your course;
- Promotion of planned course dates to members and included in the 'events section' of the website;
- Information disseminated to CIAT's Region/Centre CPD Officers and aspirATion Group Chairs; and
- Publish reviews should member(s) provide feedback on your course.

*The initial duration to be listed on the CPD Register is 12 months, after which renewal will be necessary. The renewal cost for CPD course(s) provided by educational establishments is £225 and for other organisations the price is £350, these prices are inclusive of VAT.