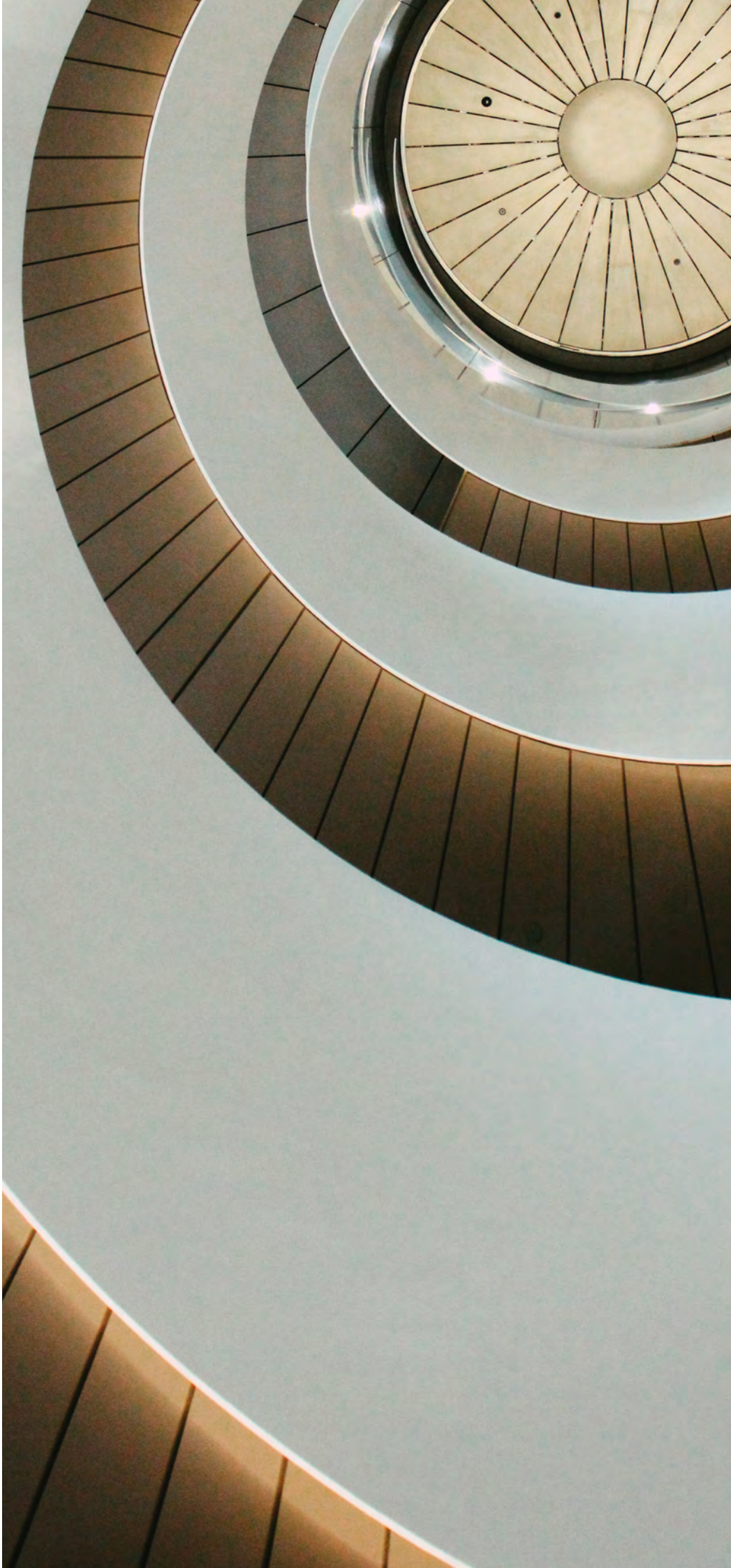
Architectural Technology Journal



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AT Awards 2024 close in June and July

The AT Awards opened for submissions and nominations on 5 February 2024 for the following Awards:

- Excellence in Architectural Technology
- Student Awards for Excellence in Architectural Technology
- The aspiration Award for Emerging Talent in AT
- The Chartered Architectural Technologist of the Year
- Gold Award

Full details and application forms can be found on the website. Winners will be announced and presented at the AT Awards event on 25 October 2024.

The AT Awards are recognised as the premier accolades that demonstrate outstanding achievement in Architectural Technology and celebrate the technology of architecture.

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CIAT

Editor's welcome

Here it is – issue 150! To think that the first issue was about 20 pages in length when it made its debut in September 1995. This is a momentous edition in more ways than one as we also welcome the new Deputy Editor, Tim Fraser. Tim joined the Institute at the end of April as Publications Executive and we look forward to his work and contributions for future issues. I'll let him tell you more about himself below.

This edition features a number of pieces on artificial intelligence and how the built environment sector might benefit from it, or on the other side of the coin, how it might not! This issue looks to the future in more ways than one, with multiple articles on how we can better future-proof buildings and homes and how the upcoming General Election might create changes in the sector. We also have pieces on a wide selection of topics that further demonstrate the versatility of the discipline and the varied career paths of Architectural Technology professionals.

The AT Award categories, which have varying deadlines, will begin coming to a close over the next few weeks and months. Enter a project or nominate an individual who you think deserves recognition within the discipline, profession or for their work for the Institute. You can find all the information you need at: architecturaltechnology.com/atawards/enter.html.

I continue to enjoy receiving communication from members and affiliates looking to contribute and write for *ATJ*. If you have any ideas for an article, would like to showcase your work or have an opinion piece, then please do get in touch.

Over to Tim!

Adam Endacott
Editor

Hello everyone!

Tim here, *ATJ*'s brand new Deputy Editor. I've only just started at the Institute but already I've received the warmest welcome and have been getting stuck in as much as possible. I am thrilled to have the opportunity to delve further into *ATJ* and see what my skills can bring to the table. My aim is to help bring the journal into a brand new era, providing you with even more punchy, relevant and exciting Architectural Technology content.

To tell you a little bit about me, my background is in both editing and writing. After studying BA English Literature at the University of Reading and MA Screenwriting at the National Film and Television School, I segued into a career in theatre in London. Over the last few years, my play *Candy* has been performed across the UK, culminating in a London run last summer at Park Theatre. I also collaborate with illustrator and creator Sarah Soh to co-write the *Juniper Mae* series of illustrated children's books, which are published by Flying Eye Books. I am a Reader for the National Theatre too, writing reports on scripts that burgeoning playwrights submit to the theatre's literary department, in which I highlight strengths, suggest edits and look at ways in which the writers might improve their plays.

Taking a leap into the built environment sector is an enticing challenge for me, as it is a world I am still learning about. But, as you might have ascertained from my varied career history above, I love learning new things and lending my creative and supportive hands to them.

One thing I do not know is any Architectural Technology-based jokes; something Adam suggested I include in this welcome to really showcase my fun side. I did know an architecture-based joke once, but it took too long to learn...

Ahem, well now that's over with, all I have left to say is welcome to issue 150! Hope you enjoy reading it as much as we enjoyed editing it and I look forward to seeing you at the next one.

Tim Fraser
Deputy Editor

Empowering construction with AI integration

Words by Simon Herod, International Manager, EstimateOne

In today's fast-paced digital landscape, you can't seem to move without hearing about artificial intelligence. Whether it is the impressive things ChatGPT can do or the doom-mongering that robots are taking over, AI is everywhere. But love it or hate it, AI isn't just a buzz phrase; it is becoming a big part of our future, and we must adapt accordingly.

Applying this to the built environment sector, a study by McKinsey highlights construction as one of the biggest industries in the world, but historically among the slowest to digitise and innovate. Despite this, given the innovation of work involved in construction, it is in a prime position to benefit from embracing this new technology.

Think less about 'taking jobs' and more about boosting productivity. AI can relieve users of their administrative burdens and support them in their day-to-day tasks. Here I will show you how.

Where AI and construction meet

From the moment a building is pitched by a client to long after practical completion, the construction process requires and deals with huge swathes of data. Lengthy contracts, rounds of architectural drawings and designs, thousands of tender submissions, supplier quotes (RFQs), scope of works and bills of material quantities; the list is endless.

The opportunity to analyse and identify areas for improvement lies within this collated information, paving the way for greater automation, from planning, design and construction to enhanced safety or precise job estimations.

Within these datasets lies the gold. With AI technology, we can collect insights, such as why a project was a success or why it was a failure. By looking at data from past projects, we can duplicate the similarities, focusing on our strengths and spotting differences in our current projects.

At EstimateOne, we have been using AI-like pattern recognition for years, in our case to help subcontractors find specific keywords in page-heavy documents and to auto-recommend superseding documents, so that only the most relevant and up-to-date information is referred to. Done properly, it can lead us to a future where we work faster and smarter while creating safer buildings in the process.

The human touch

One of the biggest misconceptions surrounding this type of tech is that it is going to replace jobs. Construction is fundamentally a human-first profession, requiring years of on-the-job knowledge and experience. At its heart, the sector runs on relationships, not stats and figures.

If you are doing your job in construction solo behind the keyboard, chances are you are not doing it right. Every building, from inception to completion, results from interpersonal relationships and good communication; something AI cannot replicate. For those still unsure, we need to remember that the likes of Siri and ChatGPT have been designed explicitly to improve, not replace, our daily functions.

New horizons

By embracing innovation and tapping into AI's potential, we can make construction more efficient, sustainable, and collaborative than ever before. We can automate data collection, analysis and decision-making on a level not yet seen, allowing construction professionals to focus on more critical tasks.

By leveraging AI-powered systems, workers can save time, reduce errors and complete projects more efficiently; exactly what the sector needs to get back on its feet. But to get there it must overcome a vital hurdle: to embrace technology rather than reject it. As well as daily use of digital tech and increased levels of training, companies also need to foster a data-first approach.

Eventually, AI will become embedded into the DNA of construction. Those who choose to embrace it now will have the most to gain. ■

AI in architecture: Combining human creativity and tech innovation now and in the future

Words by Amy Bunszel, Executive Vice President, AEC Design at Autodesk

When designing our homes, workplaces, schools and communities, the built environment sector is facing rising pressures to help combat climate change, accommodate growing populations and meet increasing standards and requirements. To address these challenges, the sector is undergoing a technological shift, incorporating a more outcome-based way of working, in addition to incorporating 3D modelling, which is driven by AI, automation, and data-supported software applications.

New tools have been transforming the way designers work over the last two decades, from sketching concepts on a page to creating drawings in AutoCAD, and more recently collaborating on a building information model (BIM) in the Cloud. Designers have always been trailblazers in digital transformation, combining human creativity with tech innovation. Now, AI opens up a myriad of new opportunities that automate routine tasks, empowering designers to solve even more complex challenges and deliver more sustainable building outcomes.

AI: unifying architectural workflows

At the turn of the century, designers embraced 3D parametric modelling through BIM, bringing in an era of greater creative and technical collaboration. Now, AI promises to disrupt the practice once again, for good.

Although BIM revolutionised the industry, the issue of silos remains. Currently, BIM struggles to meet expectations to unify data and workflows across the entire plan, design, build and operate lifecycle. Integrating granular data, automaton, and AI into existing workflows, while leveraging the design tools that designers use today, will create a more connected and outcome-based approach.

Insights derived from data collected during the design process can simplify everything from the exploration of concepts, to evaluating environmental qualities surrounding a building site, to how a building performs in the real-world.

Leveraging the ability of AI to augment, automate and analyse gives designers their time back, not just by increasing productivity but by giving them the space to focus on ambitious creative solutions. AI can help designers analyse a myriad of design variations in a very short amount of time, offering new perspectives that focus on solutions to important project outcomes. This expands the realm of design possibilities, bringing us closer to meeting increasing demands from clients, all while creating something sustainable that stands the test of time.

Outcome-based design for climate change resilience

Societal challenges such as rapid urbanisation, population growth and climate change are putting pressure on the AECO industry. The complexity of urban areas has massively increased and climate change is fundamentally affecting the way people live and work.

At the same time, the economic demands on the architecture and construction industry are increasing. The creativity of designers is being tested by the need to maximise building density and use of space without negatively impacting people's quality of life and the environment. This is precisely where AI and outcome-based design come into play, empowering designers to solve problems and enhance their current ways of working. The shift towards outcome-based design, powered by AI, enables designers to arrive at solutions faster and more efficiently.

AI also allows designers to easily incorporate environmental and other contextual data into plans when optimising their designs. AI not only provides real-time analytics that fuel essential insights into operational energy, microclimate, sunlight, wind and noise, it also enables designers to test a wide variety of scenarios within a risk-free digital environment to find optimal solutions.

Take Project Phoenix, for example, a 316-unit modular housing development in West Oakland, California on a site that is heavily impacted by congestion and noise pollution. In a collaborative effort between MBH Architects, Factory OS and Autodesk, a multi-disciplinary team harnessed the power of technology to share data and workflows and tap into AI-powered insights across the project lifecycle to make housing that was faster to design and build and is more sustainable.

In the early phases of the project, the team made data-informed trade-offs between goals for operational carbon, embodied carbon, cost and liveability. The team also leveraged their unit catalogue from past projects to reduce time and risk through reusable design intelligence.

Targeting carbon neutral, the housing units feature innovative materials, including facade panels made from a core of mycelium, the rootlike structure of mushrooms. The panels themselves are carbon-negative, as the process of making them involves more carbon absorbed than emitted due to the large volume of plant-based material that draw carbon out of the air as it grows.

In the final stages of development, the team combined physical and digital automation to construct a set of buildings that ended up both efficient and loved by residents.

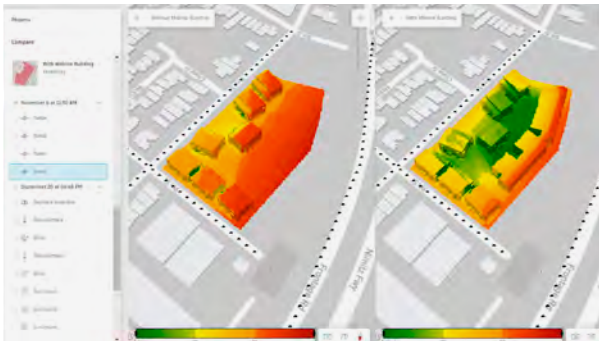
AI also allows designers to easily incorporate environmental and other contextual data into plans when optimising their designs.

A collaborative future: designers & AI working hand-in-hand

Despite the benefits that AI brings to architectural professions, it is understandable that many are still wary of the threat it might pose to job displacement. We envision AI serving as an assistant in the design process, with designers retaining their role as decision-makers, controlling the creative process and ultimately making the final call. It is the designer who has the real-world understanding of cultural, aesthetic, regulatory, local and regional specifics and needs, and of the complex web of relationships with stakeholders and customers. There is no doubt that machines can help with the heavy lifting, but it is humans who answer the all-important question of how to create better homes and buildings.

So, what is next for the designer's toolbox? It is undeniable that AI is here to stay, both in our personal and professional lives. Design practices like Architectural Technology are poised to leverage AI as an indispensable tool for transformation.

As technology streamlines mundane processes and enhances workflows, designers will gain more time to create solutions to some of the world's most pressing problems. In the face of rapid change, one constant is the irreplaceable intuition and expertise of designers, essential for balancing technological advancements with their understanding of human needs and cultural values in shaping the cities of tomorrow. The humble pen and pencil will remain in the designer's toolbox, but now they are set up to work side-by-side with sophisticated AI-supported digital tools. ■



AI and the challenges to intellectual property

Words by Brett Lambe, Senior Associate specialising in intellectual property matters, and Stephen Homer, Partner in the construction law team, Ashfords LLP.

The impact of AI on Architectural Technology

Architectural Technologists and other architectural and design professions have not been immune to fears that artificial intelligence (AI) will take jobs and make existing roles redundant. Recently, The Guardian posed the question: 'Will AI wipe out architects?' Similarly, the Financial Times earlier this year ominously declared that 'AI is coming for architecture.' It is important to remember that most professions have been warned over the last 12 months that AI is going to steal their jobs, so in this respect, architecture and building design are not unique. Despite this, we have already seen how AI can significantly enhance these practices by creating helpful tools and efficiencies.

As lawyers, we have identified several issues and risks presented by AI and related technologies that those in the building design sector must be aware of, particularly concerning intellectual property, data privacy and security risks.

Adopting AI in architectural practices

Architectural Technologists are utilising AI in several ways, the first of which being virtual reality (VR), which is already heavily used by many practices embracing the opportunity to explore created 3D environments.

For our clients who are general practice or small commercial architects and designers, VR is used more frequently than AI, although we are observing an increasing number using platforms such as ChatGPT. The purposes are different though: VR aids the design process, whereas a language model like ChatGPT is used to save time during day-to-day tasks, such as providing a starting point to create project descriptions, blog articles or press releases.

As with all tools, though, the output is only as good as the input. Understanding how they work and how to craft effective prompts helps ensure language tools produce content with the appropriate level of detail and relevance. For this reason, tools like ChatGPT, at least for now, do not have the capability to make jobs redundant. They require an expert to craft the prompts and oversee the output to ensure it is not just technically accurate but also aligns with the company's brand and approach. Only with this prior knowledge and expertise are AI programmes like ChatGPT able to generate time and cost savings.

Another form of AI gaining traction in the industry is the text-to-image generator; programmes such as DALL-E, Midjourney, and Stable Diffusion. Like ChatGPT, these programmes take prompts to search the internet for elements of images, rather than text, to create

With every input into an AI programme, you are training that model to develop its intelligence. You cannot guarantee that data will be safe and adequately protected from breaches and other cybersecurity risks.

the requested image. This can significantly save Architectural Technologists time, as any follow-up changes can be made simply by prompting the AI again – no arduous Photoshopping required.

Intellectual property concerns and legal landscape

While many of these AI programmes represent significant drivers of efficiency for Architectural Technologists, there are numerous legal issues to be aware of, particularly in relation to intellectual property (IP).

For an Architectural Technologist, these issues should be considered from the perspective of both IP creation and IP protection. An IP creation perspective means avoiding infringement of a third party's IP through use of AI-generated output in your business. An IP protection perspective means avoiding third parties infringing your own IP through them using your work to train their AI models.

While there are a range of different types of IP, for the purposes of this article we will focus on copyright and design rights, as they are the most relevant IP rights in architectural and design professions.

From an IP creation perspective, can an AI model be considered the creator of IP, instead of the designer? Under English law, the main copyright legislation is the Copyright, Designs and Patents Act 1988 (CDPA 1988). In some senses, copyright protection is straightforward to obtain, as there is a relatively low threshold to its creation and there is no need for formal registration under English law. But when AI is involved, the position is less straightforward.

To qualify for copyright protection, creative works must first be 'original', which traditionally meant that the work had to be created through the author's own skill, judgment and individual effort. As of more recently, 'original' is defined as the "author's own intellectual creation".

Is a work created by AI its own intellectual creation? We do not currently have a definitive answer from the courts. In our view, it is unlikely that copyright would exist in a work created by AI, because the AI itself cannot independently create the work; it needs to be fed information that it uses to create the work.

Even if copyright is found to exist, there is then a separate question of who owns the copyright. The CDPA 1988 says that the first owner will be the author (this is true for copyright and designs). The 'author' is defined as the person who creates the work. As with other intellectual property rights, where work is created during the author's employment, the employer will own the copyright. However, if a work created by AI meets the originality requirement (which, as discussed above, we believe is unlikely) who would the author be?

Unlike many jurisdictions, the CDPA 1988 expressly provides protection to works that are completely computer-generated. For those works, "the author shall be taken to be the person by whom the arrangements necessary for the creation of the work are undertaken". Separately, the CDPA 1988 defines computer-generated to mean works generated by a computer where there is no human author. If the legislation means that the person behind the development of the AI will be the author, then how much intellectual input did that person have in the individual output? Was there any 'intellectual creation' from this person?

It would be a major leap to argue the AI developer's role was significant in the creation of each individual output. It is likely that the legislation means the person who inputted the instructions to the AI will be the author, but at the time of writing this has not been confirmed by any court.

The UK Government, following consultation in recent years, has accepted that AI systems should not be considered the owner of a design. Until this is tested in the courts, though, we cannot be certain that it is the current law.

Moving on to the IP protection angle, understanding who owns AI-generated work and how AI trains itself with existing material is important. Very few of these issues have yet been considered in detail by the courts. One live example involves Getty Images, which is suing Stability AI (the developer of the image generator Stable Diffusion), in the UK and the US, for copyright infringement, pointing to the claimed reproduction of the Getty Images watermark as evidence of the infringement. Similarly, at the end of last year, George R. R. Martin, John Grisham and fifteen other authors filed a US lawsuit against OpenAI (the developer of ChatGPT) for copyright infringement and an alleged "systematic theft on a mass scale" in relation to the data they used to train ChatGPT.

If an author can prove their copyright work has been replicated, it gives rise to a claim of copyright infringement. As mentioned above, this could feasibly include use of copyright work (such as images) in training an AI model. While we await the outcome of the above cases, in practice, given the opaque workings of many AI models and the reluctance of AI providers to show the training methods used, it is likely to be incredibly difficult for all but the most blatant examples to prove the copying of an Architectural Technologist's IP.

Looking ahead

While the law is in a state of flux, it is nevertheless prudent for those in the built environment sector to be mindful about using AI to create designs. As the above court cases demonstrate, there are unresolved issues around how AI uses material to train its programmes. This creates a twofold problem for designers, as it is very difficult to peer behind the curtain and understand how an AI model is trained. How can we know whether it is using copyright material in an infringing manner? Your IP could be being infringed in training an AI model, allowing others to benefit from your work, whilst also potentially rendering any output derived from the use of the AI model infringing.

Moral rights also factor into this debate, particularly for an architect or Architectural Technologist, because if they are the author of the work, then they own copyright in buildings constructed to their design, and they have the right to be identified as the 'author' of the copyright in the building. This usually takes the form of a plaque or signage near the entrance, for instance.

Beyond IP, there are also relevant considerations from a data privacy and security perspective. With every input into an AI programme, you are training that model to develop its intelligence. You cannot guarantee that data will be safe and adequately protected from breaches and other cybersecurity risks. Those already utilising tools like ChatGPT should be careful not to include any client-specific or otherwise sensitive or personal information in their prompts, both from a legal perspective as well as from thinking of wider industry regulatory requirements and the potential reputational damage and the commercial impact breaking them would entail.

Architectural Technologists are certainly going to have to learn to coexist with AI, and many will be investing in ways to make the technology work for them. We are undoubtedly at an exciting frontier of development in truly groundbreaking technology. While the legal landscape takes shape, the built environment sector will be able to exploit the potential opportunities for growth and innovation. But it must equally be aware of the emerging risks by continuing to learn and adapt to the evolving legal framework. ■

While the law is in a state of flux, it is nevertheless prudent for those in the built environment sector to be mindful about using AI to create designs.

Drone data at the edge: three steps to better AI insights

Words by Jimmy Tam, CEO, Peer Software.

Data from drones can be hugely valuable. From surveying land to inspecting infrastructure, using drones offers greater accuracy and quicker access to insights than traditional methods. But it also generates a vast quantity of data and, of course, that presents challenges. Beyond the obvious storage capacity needed, wading through terabytes of information can mean some architects are missing out when it comes to getting the most from their drone data.

Enter AI. Offered up as a solution to unlock the power of data, AI has capabilities that could help architects, and other sectors that handle large volumes of data, to access insights and improve business outcomes. Algorithms to process and analyse drone data in real-time, for example, promise to speed up decision-making. Machine-learning algorithms have the capacity to identify patterns, anomalies and trends, and automating repetitive tasks like image recognition, feature extraction and classification can limit user error and free up time to focus on the jobs AI cannot do.

Without the right infrastructure in place, though, AI could fall short of the high expectations we all have for it. And all that valuable drone data could be left to languish in storage.

If AI solutions struggle to access data stored in edge locations, or if they access out of date information, the resulting insights will be inaccurate at best. At worst, the information produced could mean firms fall foul of regulations or are left open to legal challenge.

It all stems from how AI accesses information; we must make sure AI is analysing and learning from the right data. That means stepping back and looking at the way we store data in the first place. If files are stored in silos, locally with no global access, or if there are multiple versions, AI has to work so much harder, and that makes it more difficult to trust its insights.

The good news is that there are simple ways you can provide your AI tools with the right access to drone data, or any other data for that matter. To get started, I usually suggest the following three steps for the most targeted impact.

1. Provide instant access to data

If someone gave you out-of-date information and asked you to make a critical business decision, you would be worried. The same goes for AI. With real-time access to data, AI algorithms can analyse data streams as they are generated, provide immediate insights on emerging trends, and respond to changing circumstances or unusual patterns. By making sure AI has access to the most recent drone data, your plans and ideas will be based on what is happening right now, rather than an old snapshot from months ago.

2. Think always-on

Imagine, you are putting together a project proposal. You are relying on AI insight into a land survey carried out by one of your drones, but at a crucial moment an outage stops everything in its tracks.

AI algorithms rely on a constant stream of data to learn, adapt and make informed decisions in real-time. If access to data is interrupted, whether that is through connectivity issues, downtime or datacentre failure, it could dramatically impact results. So prioritise continuous availability to your data and ensure AI solutions can access critical files and data at any time, regardless of network disruptions.

3. Prioritise version control

AI using outdated data is likely to generate inaccurate assessments of site progress, for instance miscalculating building dimensions or overlooking recent structural changes. Project managers taking decisions with these flawed insights could go on to allocate the wrong resources or make design modifications that simply will not work.

So if data is stored across different systems and locations, look for ways to automate file updates so that changes are reflected immediately wherever they are stored. And think about how you will track changes, manage revisions and maintain a clear audit trail of data modifications, so that your AI model can readily identify the most recent version.

AI offers so much potential, especially when it comes to handling large data sets like those we see produced by drones. Opening up AI's access to accurate, up-to-date information will help to unlock your data's true value. Without that access, the technology's results will be limited and it will be it impossible for us to realise its true potential. ■

CIAT Principal Designer (PD) Register

The Institute's Principal Designer (PD) Register launched on 1 May 2024. It is open to Chartered Architectural Technologists practicing in industry who undertake the role of PD under the Building Regulations etc. (Amendment) (England) Regulations 2023. Here are some FAQs regarding the scheme.

What are the assessment criteria for joining the CIAT Principal Designer (PD) Register as a PD for Higher-Risk Buildings (HRBs) or as a PD for Non-HRBs?
Please refer to the Principal Designer Framework, application forms (Non-HRB, HRB and Non-HRB to HRB) and Candidate Guidance Notes, which can all be found on our website: architecturaltechnology.com/resources/building-safety-hub/principal-designer.html

PD for HRBs – The registration process will take the form of a written application with supporting evidence cross referenced against our PD Framework followed by a Professional Interview. The fee is £350 to apply for HRB PD registration and we will charge no subscription in the 2024/25 period for those who are successful in joining the Register/s. By demonstrating competence as a PD for HRBs, you will qualify for dual registration as also a PD for Non-HRBs.

PD for Non-HRBs – The registration process will take the form of a written application with supporting evidence cross referenced against our PD Framework with no envisaged Professional Interview. However, we reserve the right to interview any applicant applying for PD registration. The fee is £200 to apply for Non-HRB PD registration and we will charge no subscription in the 2024/25 period for those who are successful in joining the Register/s.

Individuals currently on the Non-HRB Register wishing to act as a PD on HRBs can complete the application form and submit additional evidence covering the HRB requirements outlined in the PD Framework. This will be followed by Professional Interview. In this instance, the fee is £150 to apply for HRB PD registration and we will charge no subscription in the 2024/2025 period for those who are successful in joining the Register/s.

Will it be mandatory for Chartered Architectural Technologists to be on CIAT's Principal Designer Register?
No. It is not a legal requirement to be on a Register, however Chartered Architectural Technologists will need to be able to demonstrate their competence.

The benefit of being on a Register is that an external organisation has reviewed and assessed evidence in order to determine their competence. However, there are benefits for Chartered Architectural Technologists that apply to be on the Register as it will provide prospective clients, duty holders, members of the public, and building users assurance that the work has been/will be carried out by a competent professional. In turn, this may

provide them with a competitive advantage over other professionals that have chosen not to be on a Principal Designer Register.

Who is eligible to apply for the Principal Designer Register?
Only Chartered Architectural Technologists MCIAT or FCIAT practising in the industry are eligible to apply to be a part of the PD Register.

It is important for those who provide services directly to clients, such as sole traders who have not yet attained Chartered Architectural Technologist status, to qualify as soon as possible to ensure their efficacy in demonstrating their skills. Affiliate status for those providing services directly to clients is intended to be a route into the Institute to allow them to come through for Chartered Membership whilst maintaining compliance with the Code of Conduct.

Through its Professional Assessment process, the Institute can ensure that Chartered Architectural Technologists provide services to clients and users within their technical expertise and professional capabilities. CIAT works to maintain and enhance standards of professional and technical proficiency in Architectural Technology and its quality assurance procedures ensure that all Chartered Architectural Technologists achieve and maintain the required level of knowledge, skill and professionalism in Architectural Technology.

This is why all those wishing to register with CIAT as a Principal Designer will need to qualify as a Chartered Architectural Technologist. This is achievable relatively quickly via the Professional Assessment qualifying route. Free Chartered Membership short courses are available for all Associate members and affiliates. The short course explains in detail the requirements and processes to qualify. These are held bi-monthly and are promoted via AT Weekly and on the events section of our website.

When acting as a Principal Designer, is it the individual who should register and demonstrate their own competence to act as a Principal Designer for non-HRB and/or HRB projects as opposed to being able to demonstrate organisational competency to act as a Principal Designer?
The Institute will maintain a Register of Principal Designers exclusively for individuals (i.e. Chartered Architectural Technologists) who have been deemed competent in the Principal Designer role. All Chartered Architectural Technologists aiming to join this register must undergo a formal assessment of their competence. The focus is on the individual's competence for the Principal Designer role and not the organisation's; therefore, the responsibility would be on individuals to demonstrate their proficiency.

The legislation does mention organisations. However, it only references capability which is not the Institute's current focus. There is however an ongoing discussion about a potential management system standard for organisational capability being developed by The Building Safety Alliance.

Will additional safety qualifications be necessary, or will experience be considered?
The necessity of additional safety qualifications will depend on whether an individual meets the Institute's requirements for registration as a Principal Designer in the respective strand of the Register (i.e. Non-HRB or HRB). Therefore, for certain individuals, having prior experience may or may not suffice without additional experience and/or qualifications.

Do Chartered Architectural Technologists already have the necessary skills, or will they need to engage in additional continuing professional development (CPD)?
This will vary because some of our Chartered Architectural Technologists already possess substantial design experience in ensuring regulatory compliance and dealing with Building Control. Our goal is to ensure that individuals acting as Principal Designers on all buildings including HRBs are suitably accommodated within registration options. Re-accreditation will be required every 5 years, as there is a requirement to reassess these individuals on a cyclical basis to ensure their ongoing competence and suitability to remain on our Register.

Will CIAT modify its Code of Conduct to restrict Chartered or Fellow Members from offering Principal Designer services if they are not on CIAT's Principal Designer Register?
No, the existing Code of Conduct already addresses this matter clearly. It explicitly states that members and affiliates must operate within their capabilities and recognise their own limitations. Therefore, if an individual lacks the capacity or experience to provide a specific Principal Designer service or role, they should refrain from offering it to the market. Our intention is not to detail every single service, especially considering the increasing specialisation within the industry. The Code is designed to encompass a wide array of services. However, it remains crucial that members and affiliates possess the necessary expertise and resources to effectively deliver any service they offer.

Under Flex 8670 any organisation offering a Building Safety Act-related (i.e. Principal Designer or Principal Contractor) Register must determine how information about a registrant's validation and/or revalidation is to be made accessible to members of the public, building occupants, duty holders etc. ■

Further information can be found on our website: architecturaltechnology.com/resources/building-safety-hub/principal-designer.html

Leveraging technology to enhance student prospects: a case study on the significance of the Autodesk Revit certification.

Words by Dr Nacer Eddine Bezai and Bhavna Crossley, School of Architecture, Design, and the Built environment, Nottingham Trent University

The Architectural Technology sector is continuously evolving, and as it does the demand for professionals who possess Building Information Modelling (BIM) skills and various industry-recognised certifications is significantly increasing.

In today's highly competitive job market, employers have the luxury of choosing candidates who excel in challenging exams and possess relevant certifications. These can make a big difference. Autodesk certifications, specifically Autodesk Certified User and Autodesk Certified Professional for Revit Architecture, have become essential in helping Architectural Technology students obtain their desired placements and graduate roles. The certification also allows students obtain a badge that they can display on professional platforms such as LinkedIn, improving their visibility and interview prospects. These certifications assure employers, showing that the candidate has completed a challenging exam that demands specific skills.

This article delves into the importance of BIM skills and the significance of the Autodesk Certified User for Revit Architecture certification. It presents the findings of two student surveys conducted to assess the impact of the certification on their confidence, development, focus, profile enhancement, and CVs. The survey also explored methods of enhancing teaching techniques and resources to improve students' success rate.

Autodesk Certified User-Revit architecture exam day: Computer room Nottingham Trent University 26-04-2024.

Two questionnaires were developed and distributed to students to collect data. The first was filled in by Level 5 students after sitting the exam, giving feedback on teaching methods, the students' experience, preparation tools and competencies. The second was taken by Level 6 students after they completed their placement. It aimed to assess how the certification boosted confidence during placement applications, as well as to assess professional growth and future recommendations. The first was distributed to fifty students, while the second was distributed to a cohort of thirty students.

Regarding their expectations prior to taking the exam, 64% of students said their initial expectation was that the certification was difficult. However, with effective teaching methods (as shown in the chart) a remarkable 90% of students successfully obtained their certificates.

Participants were asked to evaluate different software packages, including AutoCAD, SketchUp, and Revit,

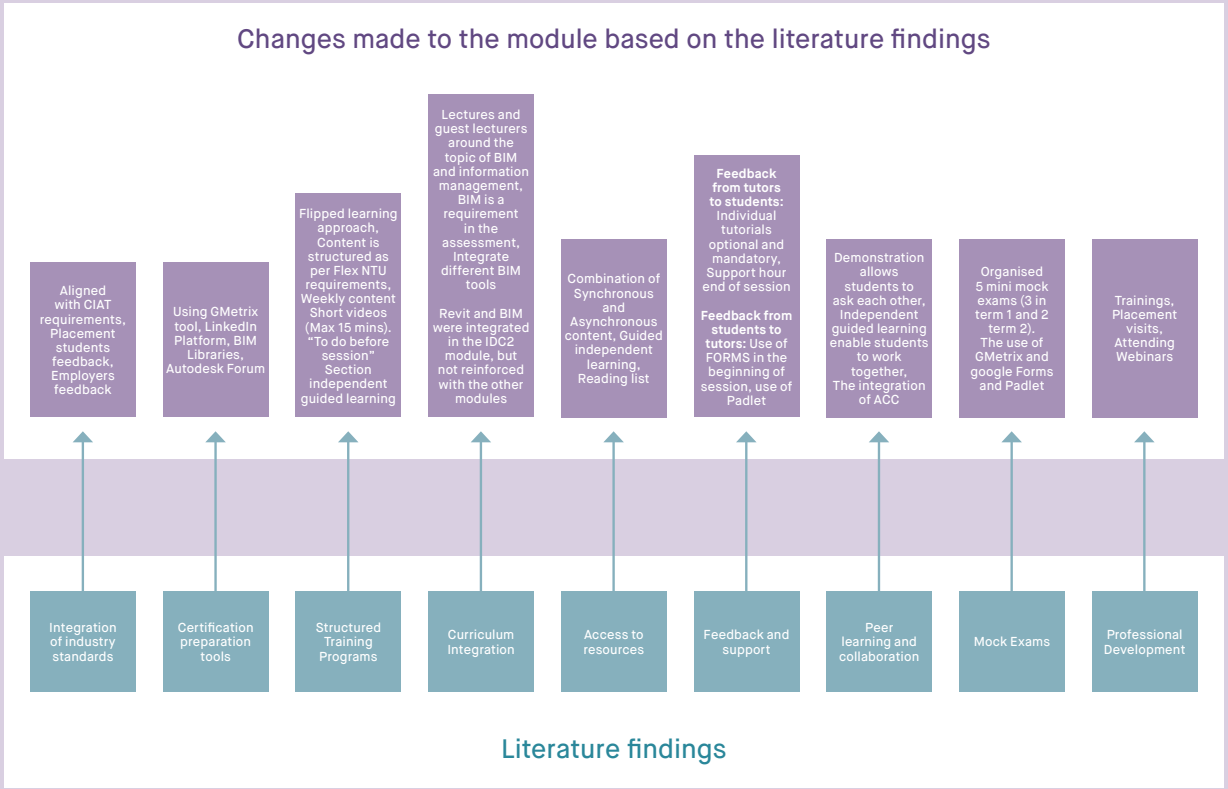


Chart summary of the findings from literature and changes made to the teaching method, literature findings.

based on their personal preferences and suitability for their projects. 87.7% of respondents rated Revit as their top choice, underscoring its widespread favourability, suitability for various project needs and the significance of incorporating the Revit certification into educational curricula.

Participants were asked to evaluate how effective teaching techniques and resources were for Revit exam preparation and obtaining the certificate (results shown in the table). Evaluation of our findings led to us implementing various changes to teaching methods. These in turn have significantly contributed to increasing pass rates among Level 5 students.

Teaching techniques and resources	Effectiveness %
Recorded videos	77.5%
Attending sessions	83.7%
Individual support tutorials	72.3%
Mock exams	96%
Preparation tools such as GMetrix	70.9%

Table showing students' evaluation of teaching techniques and resources.

An open-ended question asked for students' advice for those preparing for the certification. They recommended a multifaceted approach involving instructional videos, consistent practice, and actively seeking clarification on uncertainties, which they preferred face-to-face.

In the second survey, when reflecting on their placements, 85% of participants indicated that their Autodesk Revit certification significantly bolstered their confidence, which helped them feel more prepared for the role. 70% of participants stated their Autodesk Revit certification had been significantly valuable for their career development and professional growth. A resounding 93% of respondents highly recommend obtaining the Autodesk Revit certification to fellow students pursuing a career in Architectural Technology.

When asked if they would be interested in pursuing the next step of Revit certification, which is Autodesk Certified Professional (ACP), 100% of students expressed keen interest in furthering their certification journey. This resounding enthusiasm illustrates the importance of these types of qualifications in career advancement and professional development.

We are excited to see what the future holds for the Autodesk Certified Professional (ACP). For our next steps, we are looking to embed ACP into our final year assessments in Digital Design and Building information management. ■

Student Testimonial

Juliet Philips
Final year student BSc Architectural Technology
Nottingham Trent University

Following my successful Autodesk Certified User (ACU) certification, my job prospects significantly improved. It was a point of conversation during numerous interviews because it is a recognised industry qualification. After successfully securing a placement in ACA STUDIOS in London, the ACU qualification provided me with the skills, confidence and qualifications required to thrive in an ever-evolving digital environment. In short, the ACU has been transformative to my professional development.

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Digital sustainability through future AEC tools: bringing together industry and academia

Words by Associate Professor M. Hank Haeusler, Director, ARC Centre for Next-Gen Architectural Manufacturing (Arch_Manu) and Andy Watts, Director of Design Technology, Grimshaw, and Partner Investigator, Arch_Manu

The built environment sector is under increasing pressure to operate in sustainable ways, pursuing profitability while contributing to the wider ecosystem through economic, social and environmental goals. To fulfil our obligations under the Paris Agreement and achieve net-zero by 2050, we must engage a critical mass of firms to support them in decarbonising the construction process. A critical focus of this mission is doing this through minimising emissions and waste generation, as well as building with less materials for more humans.

This pursuit is not without its challenges. Issues such as tight project deadlines, budget constraints, and a low tolerance for risk often clash with innovative solutions for sustainability-driven processes, services, and products. To effectively achieve policy targets, it is crucial we transform decarbonised construction from a customised approach to a widespread market solution. The Architecture, Engineering, and Construction (AEC) sector must undertake a coordinated effort to effectively address these challenges, understanding the intricate relationship between digital technologies, sustainability and the required practices and capabilities.

Australia's foremost Architecture, Design, and Engineering (ADE) practices and professional bodies have come together to establish the ARC Centre for Next-Gen Architectural Manufacturing (Arch_Manu ITTC).

We aim to transform the national architectural, design, and engineering professions to meet Australia's

immediate strategic needs in terms of productivity and climate goals. Being a partnership between academia and industry, we will triangulate world-leading researchers, visionary practitioners, and talented graduates to integrate state-of-the-art research into practice. Our program of twenty-five industry-embedded PhDs, national and international placements, short courses and three postdoctoral projects is positioned under a digital sustainability framework. It will grow architectural manufacturing knowledge, skills, and capacity within the Australian and global AEC sector, while delivering novel architectural manufacturing-specific design tools and frameworks for the sector.

Meanwhile, on the other side of the world...

While the Arch_Manu ITTC was taking shape, a parallel conversation on the other side of the world was shaping the framework for it to align its trajectory to. This was the Future AEC Software Specification.

The conversation initiated with a cohort of digital leaders from UK-based architectural practices, coming together to share thoughts and insights from their experiences in the field of architectural design technology. Amongst common issues was a frustration with the slow pace of change in some of the more prevalent design platforms on the market and, provoked by an evolution of licensing models, the group were motivated to write and publish the first open letter to Autodesk.

The letter started a wider conversation around software and its role within the AEC industry and gave rise to a broader dialogue encompassing the US and Europe, as well as spawning further open letters. Despite this, there was little to see in terms of meaningful progress from Autodesk and other major vendors. On the verge of writing another open letter, a couple of us decided to put forward a different approach. Instead of reacting to one well-established and entrenched software developer, we sought to start a more proactive open dialogue with the entire AEC software community.

With that in mind, a small group of UK-based architectural practices began to sketch out a vision of what the ideal software ecosystem would look like for a contemporary architectural industry. The intention was twofold: to make this vision, this specification, available to the industry to gain more feedback from peers; and to describe to the software development community and their investors exactly what the AEC industry, their clients, are looking for in terms of technological capabilities. Comprised of ten tenets across data, functionality, capabilities, and commercial, the specification intends to give the development community a checklist to align their efforts to.

The specification was launched by AHMM's Aaron Perry in June 2023 at NXT DEV in London; a unique conference bringing together AEC firms, software developers and investors. Following the launch, the reception from both the AEC and the software industry has been remarkable. Whilst initially set out by UK-based architectural practices, firms from across the AEC spectrum, and across the globe, have reached out to lend voices of support and to offer their involvement. Similarly, a host of software companies, from big players to smaller start-ups, have been in touch to find out how they can both learn more and further align with the specification.

Aligning centre and specification

Back in Australia, we at the Arch_Manu ITTC are planning to develop and deliver these tools within the framework and thinking of the Future AEC Software Specification. We believe too in an open-source specification for future design tools that facilitate good design and construction by enabling creative practice and supporting the production of construction-ready data.

Our commitment to software and digitalisation is because digitalisation is undeniably one of the most powerful drivers of societal change. It offers the scalability and speed required to address the second societal change: climate change. We do not see digital and sustainability as separate but as a 'twin transformation' or 'twin transition', with an intersection in which digitalisation strengthen sustainability. We call this digital sustainability.

Digital sustainability distinguishes itself from traditional sustainability approaches already in use within the AEC industry. We believe that digital sustainability will be a driving force for a fair and prosperous future because all industry sectors can reach their climate and ESG targets with proper use of digital solutions. We understand digital sustainability for the ADE sector as a way forward to review and reimagine existing practices and capabilities to harness the potential of digital technologies, delivering organisational and societal benefits.

We believe that digital sustainability will be a driving force for a fair and prosperous future because all industry sectors can reach their climate and ESG targets with proper use of digital solutions.

Our PhD students will investigate digital sustainability to enhance productivity and efficiency in the AEC sector, with the primary objective of bridging gaps in knowledge and practice through three interconnected architectural research and training themes:

1. Synthesis of creative operational processes and practices in pre-design. This creates more efficient, reliable and effective software, making it easier for Australian manufacturers to complete new product designs.
2. Management of business processes and commercial models. Rethink the standard business models of the architectural sector to consider new digital Anything as a Service (XaaS) models for influencing what to design and manufacture.
3. Analytics unlocking the potential of architectural data in post-design. Use advanced computation to unlock the commercial potential and operational efficiency of existing and new data in CAD, BIM and other formats.

Closing the loop on industry

The involvement of both academia and industry at Arch_Manu promises to bring an exciting depth of rigour and real-world experience as we investigate what the future technological landscape of the AEC industry looks like. Aspects of the Future Specification will evolve through PhD research before being tested and proven in an industry setting on real-world problems. By closing the loop in this way, we will make progress at a much faster rate than relying on the organic transformation of the industry.

After all, our industry carries a weight of responsibility in delivering a sustainable future, which technology is key to realising. This is the challenge we face, and we are excited to meet it. ■

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Has ISO answered the question, “What is a digital twin”?

Words by Dan Rossiter FCIAT, Built Environment Sector Lead, BSI

For at least the past five years, the built environment, as well as other economic sectors, have been investigating ways of using digital twins. However, several activities to bring stakeholders together have been thwarted by a lack of consensus in relation to what a digital twin is.

Earlier this year, BSI, the UK’s national standards body, published as BS ISO/IEC 30173. This standard looks to formalise some of the key concepts which constitute what a digital twin is, as well as some key terms and definitions.

So, what is a digital twin?
BS ISO/IEC 30173 provides a definition:

digital twin: digital representation of a target entity with data connections that enable convergence between the physical and digital states at an appropriate rate of synchronisation.

Whilst this definition is helpful, it is also quite complex. So, let’s break it down.

Target entity
The target entity, simply put, is the subject of the digital twin. The standard describes these as being ‘real’ things like components, assets, systems and processes. The subject is then observed through data connections like sensors.

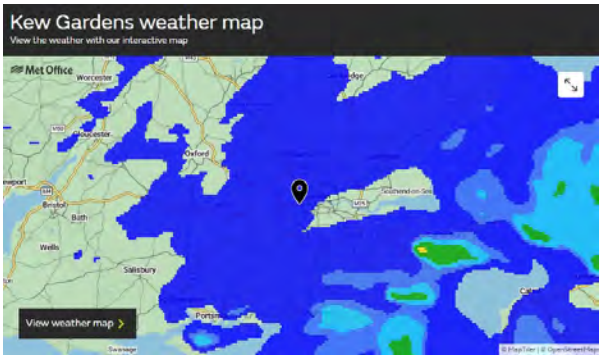
Digital representation
The digital representation is the digital version of the target entity. Depending on the subject, the way it is represented may change. It may be useful to represent the shape of a component graphically (i.e. a 3D model), but a process or system may need to be represented more conceptually (e.g. as a diagram or a model notation). Much like with Building Information Modelling (BIM), digital twins aren’t about 3D models, they are about the exchange of pertinent information.

Convergence
Perhaps subtly the most significant part, Convergence is the act of coming together. In this instance, convergence can be achieved in three different ways:

1. The digital representation changes to reflect the target entity (e.g. a component, which is being tracked, is moved. Once in its new position, its location is updated with new coordinates).
2. The target entity changes to reflect the digital representation (e.g. someone sets a thermostat which is monitoring a living room. The thermostat triggers the room to warm up).
3. Both the digital representation and target entity change to meet in the middle (e.g. a complex algorithm behind a series of interconnected digital twins may influence several entities and representations concurrently).

Appropriate rate of synchronisation
This is the idea that convergence occurs as often as needed. For cases relating to life safety, near real-time may be a requirement. For other use cases, this convergence might happen less frequently.

So, is [X] a digital twin?
Let’s use an example: the Met Office Weather Map.



If I go to the Met Office website, I can see a digital representation of the UK weather system in the form of an interactive map. Weather stations provide a data connection by sending weather data to the Met Office’s Weather Observations Website. This data connection allows the data behind the interactive map to converge with observed data at an hourly rate. As such, it appears that the Met Office Weather Map is a digital twin, as defined within the standard.

There we have it. Hopefully, standards such as BS ISO/IEC 30173 will provide the support needed to help stakeholders come together to talk about digital twins in a more consistent manner. In doing so, we can look to advance their application within the built environment. ■

From mud bricks to smart concrete: a brief history of building materials

Words by Instarmac

Did you know that concrete is the second-most consumed material in the world, second only to water? One of modern humanity's most important innovations, concrete has brought home construction to new levels, supported sprawling cities and facilitated structures previously thought impossible.

And with the news that NASA researchers have been working on waterless concrete for 3D printing on the Moon, concrete might be about to play another huge part in the advancement of humanity.

Bricks and concrete have been used side-by-side for centuries. But how did we arrive at today's lofty construction standards? Here, the building material experts at Instarmac take a look at the most important building materials used throughout history and examine how we arrived at the smart concrete of today.

7500 B.C.: mud bricks
The oldest bricks discovered to date, in Tell Aswad, Syria, date back to around 7500 B.C. These bricks were shaped with clay or mud and left to dry in the baking sun, allowing them to become sturdy enough to use.

7000 B.C.: concrete
While concrete might appear to be a newer phenomenon, we can trace the earliest concrete structures back thousands of years. Early concrete, made by mixing quick lime with water and stone and leaving it to set, was found in a hut in Israel that dated back to 7000 B.C.

3700 B.C.: Knap of Howar
The oldest house found in the UK is thought to be the Knap of Howar, on the island of Papa Westray in Orkney, Scotland. This home was built with local stone, as are some of the other earliest dwellings across the country. This indicates that the UK's earliest homes were most likely built with the sturdiest materials their occupants could get their hands on.

43 A.D.: concrete arrives in the UK
The Roman invasion of the UK in 43 A.D. heralded the arrival of plenty of new infrastructural advances, from roads to walls, for both homes and cities. The Romans brought concrete far more advanced than anything available in Britain and developed building techniques that created a smooth finish while protecting the building's concrete core.

When the Romans left the UK in 410 A.D., Roman concrete left with them and the recipe was lost. It was later revealed that Roman concrete's strength came from its use of pozzolana, a type of volcanic ash found in Italy.

1200 - 1500: stone foundations or wattle and daub
Without Roman concrete for housebuilding, the UK's homes took a step back. Early medieval city dwellers used a combination of stone, chalk and flint to build their homes and created thatched roofing with dry vegetation, such as straw or reeds. After a huge fire in London in 1135, however, it was decreed that no more new homes would be built using thatched rooves.

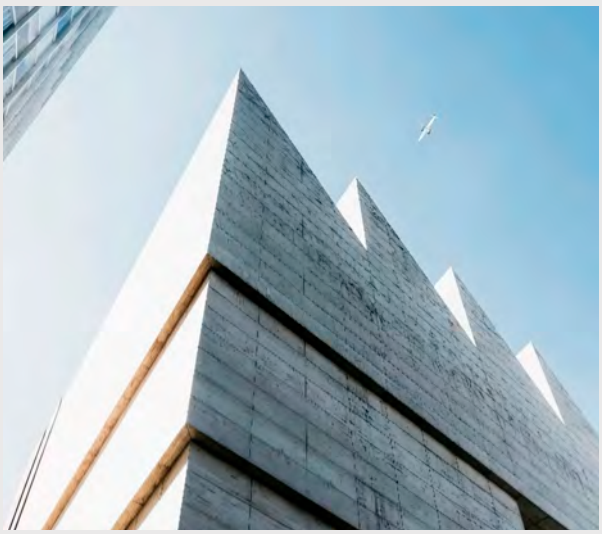
Under Elizabeth I, timber frames known as wattle were used for home construction. These would be filled in with daub, a mixture of wet sand, clay, dung and straw. This construction method was also adopted by the Tudors and provides the foundation for many of the Tudor houses remaining today.

Though wattle and daub construction declined in popularity over time, it remained a viable construction method until the 20th Century.

1500-1800: bricks are back
Throughout the 17th Century and beyond, bricks were back in vogue. Used extensively in the rebuilding of London after the Great Fire of London in 1666, brickmaking had become a respectable, regulated trade. Techniques such as Flemish bonding characterise the work of that time.

A number of significant buildings using Tudor brick remain from this period, perhaps most notably Hampton Court Palace.

1824: Portland cement
It was not until the 18th Century that engineers took up a renewed interest in concrete, trialling new compounds to increase stability and durability for the demands of the modern world. In 1824, a huge breakthrough in Leeds changed everything.



Bricklayer Joseph Aspdin patented Portland cement. He named the cement after its resemblance to Portland stone, the ingredient that would eventually constitute the base ingredient of today's modern concrete. Although Aspdin's version of Portland cement differs considerably from the product with the same name today, it represented a huge innovation on the path to modern concrete.

1855: brickmaking at scale
As the Industrial Revolution began to take hold, we made huge strides in brickmaking, particularly with the rate of production. In New York in 1852, Richard A. Ver Valen patented a brickmaking machine, establishing his town Haverstraw as the capital of global brick production.

In the UK, the Bradley & Craven Stiff-Plastic Brickmaking Machine was also invented in 1852. Although Henry Clayton's patented 1855 version is perhaps better known: capable of creating 25,000 bricks a day.

Today: smart concrete
Reinforced Autoclaved Aerated Concrete (RAAC) aside, we have seen some huge strides in terms of the quality of building materials used in the UK in recent years. Many of today's buildings are now constructed with smart concrete, bringing a whole host of benefits.

Smart concrete is an umbrella term that covers several different forms of concrete, which each have their own associated benefits. Self-healing concrete, made with mineral additions or superabsorbent polymers to encourage autogenous repairs, falls into this bracket.

Other forms of smart concrete might include self-sensing concrete, also known as self-monitoring concrete, which can sense the stress, strain and damage within itself.

The future...
Going forward, new innovations in concrete could facilitate humanity's next venture: to populate different areas of our solar system. NASA researchers, in collaboration with Louisiana State University, are currently working to develop feasible robotic construction technology that could support life on the Moon.

Materials such as sulphur and regolith, which are already available on the Moon and Mars, could be used to develop 3D-printed, waterless concrete. With other building innovations taking place all around us every day, who knows what the next most-important building material will be for the human race? ■

Specifying extruded polystyrene (XPS) insulation in masonry cavity walls below DPC level

Words by Rob Firman, Technical and Specification Manager, Polyfoam XPS Ltd

Detailing masonry cavity walls below damp-proof course (DPC) level has seen greater focus across the construction industry, including with major housebuilders. What should design professionals look for when seeking to maintain existing wall insulation specifications above DPC, while improving the robustness of their detailing below DPC? And how can extruded polystyrene (XPS) insulation help?

Detailing junctions where a ground floor meets the external walls must consider thermal performance. The psi-value of the junction, along with avoiding risk of condensation and mould growth, is a well-established part of the Building Regulations.

Equally well-established is the moisture resistance of floors and external walls, including the provision of DPCs, covered by Approved Document C in England and Wales. Moisture resistance of floors is relevant because the position of thermal insulation and damp-proof membrane (DPM) within the floor influences the detailing of the wall construction below DPC level.

Like its predecessor, Approved Document L1A 2013, Approved Document L1 2021 says the building fabric should be constructed "to a reasonable standard so that the insulation is reasonably continuous over the whole building envelope." Unlike its predecessor, the 2021 document includes extra guidance that says, "moisture-resistant insulation should be fitted below damp-proof course level and extend to the foundation block/structure."

It is for this reason that more and more designers and specifiers are paying closer attention to their below DPC detailing.

What are the moisture resistance requirements in the Building Regulations?

Part C of Schedule 1 of the Building Regulations in England sets out requirements relating to site preparation and resistance to contaminants and moisture.

Requirement C2, 'Resistance to moisture', says that a building's floors, walls and roofs "shall adequately protect the building and the people who use the building from harmful effects caused by: (a) ground moisture; (b) precipitation including wind-driven spray; (c) interstitial and surface condensation; and (d) spillage of water from or associated with sanitary fittings or fixed appliances."

At the time of writing, the Building Regulations in Wales adhere to the same Requirement C2. Section 3 of the Scottish Building Standards, 'Environment', has its own moisture resistance requirements, with technical guidance published in the domestic and non-domestic technical handbooks.

- **Moisture resistance of floors**

Section 4 of Approved Document C gives guidance on how ground-supported floors featuring a concrete slab ('solid floors') and suspended concrete and timber floors can meet requirement C2. Different guidance applies if the floor is subject to groundwater pressure.

A DPM is an essential part of a solid floor construction and might need to be part of a suspended floor design. The guidance for solid floors requires the DPM, which can be placed above or below the concrete slab, to be "continuous with the damp-proof courses in walls, piers and the like."

- **Moisture resistance of external walls**

Section 5 gives guidance on how external walls can be constructed to resist moisture from the ground, and from outside the building (i.e. precipitation). As with floors, different guidance applies if the walls are subject to groundwater pressure.

A wall meets the requirement if it has a DPC that is continuous with any DPM in the floor, and the DPC is a minimum of 150 millimetres above the adjacent ground level.

If the external wall is of cavity construction, the cavity should continue down at least 225 millimetres below the level of the lowest DPC; or a "damp-proof tray" (cavity tray) should be provided to prevent precipitation passing to the inner leaf (with weep holes to aid the passage of moisture out of the wall through the external leaf).

Section 5 also describes suitable outer leaf materials for cavity walls, what materials and components can bridge a cavity, and how exposure zones affect the width of clear cavity that should be maintained.

As well as this, it details the conditions that a thermal insulation material must meet to be considered suitable for use in a cavity wall, including that rigid insulation boards "should be the subject of current certification from an appropriate body".

Generally, that means an Agrément certificate issued by a third-party. This is usually the British Board of Agrément (BBA), although other Agrément certificate providers are available.

Does cavity insulation below DPC level require third-party certification?

Cavity wall insulation tends to feature a single solution/product type, whether full fill or partial fill, which continues down the cavity past DPC level. As a result, it can seem as though the requirement for third-party certification applies to the complete wall construction.

To recap, the structure of Approved Document C breaks the wall down into two distinct areas. The first is below DPC, where it is necessary to resist moisture from the ground. The Second is above DPC, where it is necessary to resist external moisture, and where the requirement for third-party certification is specifically mentioned.

The below DPC 'zone' is where specifiers and contractors look to use the moisture-resistant properties of XPS insulation to provide added reassurance that their external walls will resist moisture from the ground.

At the time of writing, there is no XPS insulation product with third-party certification for use as a partial fill cavity wall insulation. But our view is that this only precludes the use of XPS above DPC level.

What are the options for using XPS insulation below DPC level?

Used with full fill insulation, XPS can fully fill the cavity below DPC. Used in conjunction with a partial fill insulation product, XPS insulation can either partially or fully fill the cavity below DPC.

If XPS partially fills the cavity then the same width of clear cavity needs to be maintained below DPC as is present above. This ensures the required width and depth of cavity is maintained.

Polyfoam XPS recommends fully filling the cavity below DPC level to ensure the insulation remains in position and delivers the maximum thermal benefit to the junction detail. You should also install a cavity tray over the insulation.

Depending on the relative levels of the ground floor insulation and the base of the cavity, you should consider starting the XPS insulation on the first row of wall ties rather than the base of the cavity/lean mix cavity fill.

Following these recommendations will, we believe, help you deliver high levels of thermal performance in the junction detail, and avoid the possibility of condensation in the junction detail.

Using the advice in this article

The use of XPS insulation products in masonry cavity walls below DPC level is a relatively new development. This article represents a summary of our best understanding of the Building Regulations and offers advice based on details and guidance produced by others in the built environment sector.

The details included here should not be used as a detailed specification; project-specific specifications, detailing and calculations should always be produced.

The advice of a building control department, approved inspector or other warranty-providing body should also be sought when looking to implement any of these recommendations. ■

School Specification 101: plumbing and heating systems in our schools

Words by Richard Bateman, Product Marketing Manager, RWC

Making learning environments safe and comfortable places for students and staff is a top priority for schools up and down the country. Plumbing and heating systems have a key role to play in creating spaces that are conducive to effective teaching and learning; they elevate safety and performance at every point of use.

There are more than 30,000 schools and academies in the UK, providing dedicated learning environments for more than ten million pupils and employment for more than 600,000 teaching staff. For each of these environments to be effective, it is essential for buildings to perform optimally, including their plumbing and heating systems.

Essential to the smooth, safe and efficient running of schools, plumbing and heating systems must withstand high levels of usage every day, as well as perform reliably for years to come to maximise the stretched budgets of individual schools.

To achieve this, specification is key in equipping schools with the systems they and their pupils will need to rely on.

Optimising systems for health and safety

Health and safety should be a primary consideration. Accommodating users of all ages, schools should be acutely aware of protecting users from risks such as scalding, as well as diseases such as Legionnaires.

To protect people at the point of use, Thermostatic Mixing Valves (TMVs) can be installed at each outlet, ensuring water temperatures do not exceed 46 degrees Celsius and therefore do not pose a scalding risk. To provide adequate performance and meet the required standards, it is essential that schools use TMV2-approved valves, unless the users are likely to be at a higher risk of scalding. Higher risk users could be those with disabilities, or children of nursery age. In these environments, only TMV3-approved valves should be installed.

To protect users over the long-term, valves should also be easy to access, supporting future maintenance and servicing. Along with testing at time of installation, interim testing should take place every six months for TMV3 valves, and every twelve months for TMV2 valves.

Schools generally have larger hot water systems and user demand is constant, so secondary circulating hot water systems are becoming more common to enable instant hot water at the outlets. It is essential to thermally balance this type of system to ensure optimum efficiency from the heat source; unbalanced systems create a host of problems, from inconsistent hot water availability to creating environments for harmful bacteria to grow. Thermal Balancing Valves (TBVs) negate these challenges. Installed at various points across a system, they safely provide a constant and stable supply of hot water and regulate the flow of water in line with temperature.

Aside from risks such as scalding, specifiers should also seek to prevent against backflow, which is when pressure fluctuations move water in the opposite direction and contaminate the supply. Schools are Fluid Category 4 and as such require the installation of Reduced Pressure Zone (RPZ) valves as standard for this.

Future-proofing systems

Besides safety, the longevity and reliability of plumbing and heating systems is paramount for schools, enabling them to withstand heavy usage and remain functional for years to come. In practice, effective specification helps schools to maximise their budgets and deliver consistent value for all stakeholders.

Along with protecting users from some of the common challenges associated with hot water systems, effective specification also improves ongoing maintenance. Through effective system planning, regular maintenance and servicing gets carried out quickly and accurately, maximising lifespan and performance. ■

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Will urban development priorities shift from brown to green if the government shifts from blue to red?

Words by Katy Davis, Planning & Development Partner, Carter Jonas (London office)

In July last year, the government outlined its long-term plan for housing, which committed to “a new era of regeneration, inner-city densification and housing delivery across England” and launched its visions for growth in London, Leeds and Cambridge. The Spring Budget made further commitments to these cities, allocating funding for London and Leeds and promising both a development corporation in and a future long-term funding settlement for Cambridge, which will be announced in the next Spending Review.

The same day, the government also published an independent review of the London Plan and, following this highly critical report, Michael Gove ordered the London Mayor Sadiq Khan to conduct a partial review of the plan.

There are two specific areas of focus. The first is industrial land: the government believes that of the 6,800 hectares of land used for industry in London, 736 hectares could be used for housing. The second is opportunity areas which have not delivered the intended 2,500 homes. For the Conservative party, brownfield development remains the priority.

If, as is widely predicted, the current government is replaced with a Labour administration this Summer, the preferred location for new homes is set to change.

In a speech on 19 April, Keir Starmer set out his policy for housebuilding, specifically freeing up space for between 100,000 and 500,000 homes by building on "ugly" parts of the green belt land. His proposals include prioritising brownfield land within what is currently designated green belt but also improving green spaces such as parks and woodlands.

The 'grey belt' has become a focus for Starmer in many of his pro-development speeches. It was almost a year ago that he depicted a disused petrol station as an example of land within the Green Belt which had little aesthetic value but considerable development value. The petrol station, along with "disused car parks" and "dreary wastelands", has since been branded the 'grey belt', a new description for protected land which would otherwise be made available for development based on its suitability and sustainable location.

This is unlikely to be straight-forward in addressing London's housing crisis, as Khan is committed to protecting the capital's green belt and has stated that even "derelict and unsightly" parts should be shielded from development.

Why Khan has such an extreme view on not releasing the green belt remains a mystery. Some commentators have suggested that his reasoning is environmental – the green belt being the 'lungs' of London, or the 'climate safety' belt. Other suggestions include him wanting to ensure transport emissions do not increase from sprawl, supporting London's resilience to a changing climate through preventing flooding and production; thus providing important habitats for wildlife and allowing space for recreation and relaxation.

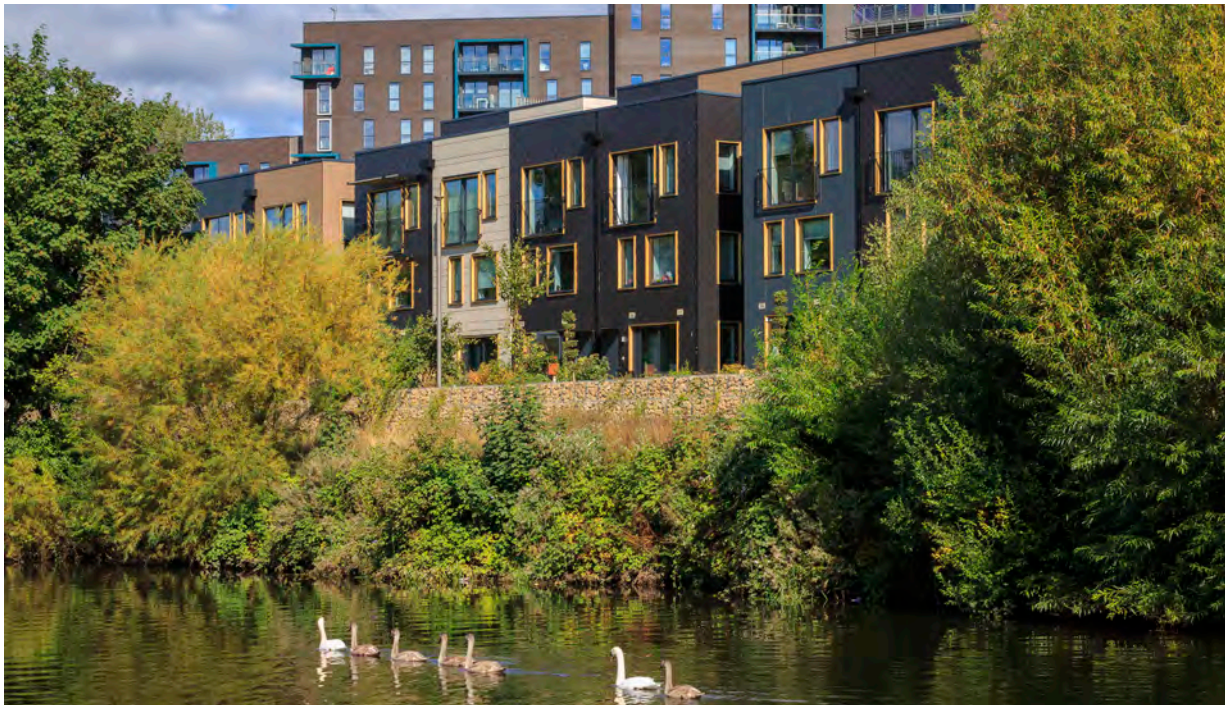
While that may be true, the opposing view is that the green belt has contributed to long commuting distances, house price inflation, less choice and poorer quality, smaller homes.

As we are now building greener developments that focus on active travel, sustainable energy and increased biodiversity, releasing the 'grey belt' for sustainable development is eminently logical.

Almost unquestionably, green belt release is the single most effective way of resolving the housing crisis. There are many parts of London where the green belt is isolated pieces of land between major transport infrastructure. These are prime sites for the development of employment and homes. Some London boroughs, including Labour-run Enfield, are boldly proposing major green belt release in their draft local plans, knowing that it will not sit well with Khan but that it will align with the policies of the potential Labour government.

Development on the green belt – and there is substantial green belt surrounding London, Leeds and Cambridge – is one of the most contentious planning policies that a government could introduce (evidenced by the fact that the current government has made great efforts to avoid doing so). Clearly Keir Starmer believes that it is a cause worth fighting for, but Sadiq Khan remains opposed to this key Labour planning policy. There is reason to believe that the Mayors of Cambridgeshire and Peterborough and the West Yorkshire Combined Authority are also very protective of the green belt.

A new Labour government would have to pull multiple levers to genuinely achieve a step-change in housing delivery. This would inevitably include delivering some development on green belt land that does not neatly fit the 'grey' label. Difficult decisions and continuing political disagreements lie ahead if we are to house our growing population. ■



Picking up the hard hat: common factors preventing workers using head protection and how to solve them

Words by MSA Safety

Wearing a hard hat is mandatory in many applications and industries, protecting the safety of individuals in potentially hazardous environments. But wearing PPE can be seen by users as a hindrance rather than an important safety feature for their workday.

This is typically the learned experience of industrial professionals who have at times found that some hard hats can bring on headaches, make them hot and sweaty, or often do not fit properly. At MSA Safety, we believe that the most effective hard hat is the one a worker will want to wear.

A more comfortable helmet can not only empower workers, but can also make them feel safer and happier, improve their productivity and even boost their confidence, allowing them to better focus on the job at hand.

To understand what makes a great hard hat, we need to dissect some key issues associated with common protective headwear solutions on the market today and find out what exactly is deterring users from wearing this vital piece of protective equipment correctly. We outline some of the most common factors which could hinder correct usage of hard hats on site, and how selecting the appropriate hard hat can help to reduce this.

Temperature regulation

From construction professionals operating outside in the scorching heat to mechanical specialists contracted to conduct works in boiler rooms, many industrial workers find themselves carrying out demanding jobs in incredibly warm environments. The combination of heat and physical

exertion can make wearing personal protective equipment (PPE) extremely uncomfortable if the appropriate hard hat has not been selected for the workers.

Hard hats can be warm; they trap sweat and perspiration can make them fog. To help reduce this, helmets with ventilation should be opted for. These helmets can be adapted to improve comfort. Also, sweatbands made from a soft, sweat-absorbing and respiring material can be incorporated, washed and replaced.

Accessories can also be incorporated in aiding workers' comfort during winter months or in colder environments, in which wearing hard hats can be just as uncomfortable. Winter liners can assist with temperature regulation, helping to protect workers from the cold and keep them warmer. In addition, for those working outdoors, helmets with integrated rain gutters may be more practical for workers, ensuring water drains off the bill rather than down the wearer's neck.

From boiling to freezing, the type of environment your workers are operating in is an essential factor to consider when choosing the appropriate hard hat for your workers.

All day comfort

If protective hard hats do not have a good fit and appropriate straps to keep them in place, they can slip, slide and move around, becoming a distraction for workers.

Understandably, this is a top factor that contributes to workers not wearing their hard hat when needed. Indeed, if a helmet slips down, vision may be impaired, and if it needs to be adjusted at a critical moment then potentially dangerous tools may not be under a worker's full control.

Thankfully, there are ways to solve this problem. A six-point ratchet textile suspension will contribute to comfort, enabling the helmets to be adjusted to fit a range of head sizes and genders, thus providing an inclusive and secure fit. This will minimise rattling and slippage, even when users are repeatedly looking around. Equally, a four-point textile chinstrap can reinforce the retention of the helmet on your head.

While comfort, at least in part, stems from temperature regulation and fit, the actual feel of the helmet against your head is also crucial. For this reason, soft textile straps and good suspension is invaluable. An effective hard hat should also prevent hair pulling and compression headaches, facilitate good airflow and feature a quality ratchet system for quick, smooth and reliable adjustments.

Appropriate for work applications

Ultimately, hard hats become an extension of your head during the workday. And, in cases of confined or restrained spaces, smaller equipment is often more practical. In these applications users can look to acquire models that have a modern dynamic design with a low-profile, compact, sports-styled shell and no protruding peaks.

Of course, the solution depends on the application. Short peak or peak-less safety helmets can be better for workers requiring good upwards visibility, yet standard peaks are better for protecting your eyes from the sun. Non-vented shells should always be used in environments where chemicals or hot liquids may be projected.

It is also important to consider the accessories that are appropriate for certain applications, movements and tasks. If it is hard to tweak the sizes and straps, any additional features will add little value and may go unused. It is important that users can easily adjust the size of their hard hat for a secure fit, even when wearing safety gloves.

Aesthetics

It is not always just a case of what a helmet feels like, but what it looks like too. People like to look their best, whether that be in their personal lives or at work. This attachment can help the worker take better care of their protective headwear, which extends the lifespan of each model and makes product investments go further.

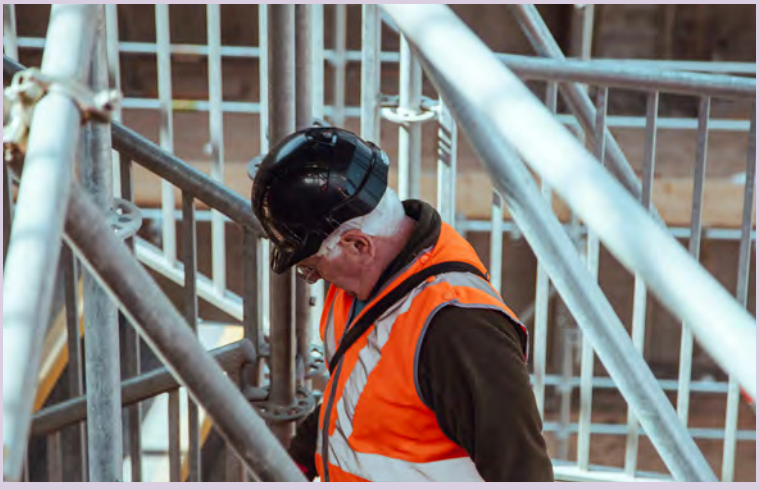
When considering aesthetics, a safety helmet that has a modern, low-profile sporty design is likely to be more desirable than larger, chunkier alternatives. Despite this, you should always look to prioritise the level of protection; safety should never be compromised for style.

From boiling to freezing, the type of environment your workers are operating in is an essential factor to consider when choosing the appropriate hard hat for your workers.

How to choose the right hard hat for you

There are a diverse range of factors to consider, from suspension, soft textile materials, vented or non-vented models, to heat regulation accessories, size and aesthetics.

Appropriately selecting the model and relevant accessories can provide many benefits. Not only can the right hard hat help to improve the safety of your staff, but it can also increase confidence, contribute to a happier workforce, and boost productivity by enabling workers to work more efficiently. ■



The unique properties of a genuine conservation rooflight

Words by Paul Trace, Director, Stella Rooflight

What is a conservation rooflight?

If you have ever needed conservation rooflights for your project, the chances are that you have searched online and found plenty of choice. But what is a conservation rooflight and are they all the same?

To better understand what makes a rooflight a conservation style, we must grasp the history behind this type of glazing and why the design is so sought after, not just on period properties but on more modern projects too.

Without the ingenious concept of a rooflight, transforming unconventional space into a well-lit property would be a daunting task, and in some cases impossible. Although rooflights, or skylights as they are sometimes known, have been around for centuries, they became more prominent during the Victorian era as technology and building aspirations were stretched and roof glazing boomed. One of the most famous Victorian building projects was Crystal Palace which, in 1851, used glazing on an unprecedented scale to showcase what could be achieved.

Mass-produced Victorian rooflights for residential use tended to be made from cast iron and had smaller, lighter panes of glass. This was partially down to limits of glass technology, but also because of excise duties, which were imposed on glass by weight at the time. These slim, single glazed rooflights with multiple panels of glass were unobtrusive in design and sat flush in the roof. Today, it is this minimalist appearance that many seek to achieve with their glazing designs.

As a result of their popularity, there are lots of conservation roof windows on the market, which can make choosing the right one virtually impossible, unless one can identify what the differentiations are. An effective way to make this distinction is to look closer at the attributes of a true replica of a Victorian conservation rooflight.

What material is the conservation rooflight manufactured from?

If a conservation rooflight is all frame, then there is little point in having one. Genuine conservation designs should be manufactured with slim, clean lines and a low-profile to match the roofline. A number of skylight companies try to produce conservation rooflights using modern, bulky aluminium profiles. It is widely accepted that most authentic conservation rooflights are manufactured from steel because the material provides great strength while offering a slim profile and excellent glass-to-frame ratios.

Single or double glazed?
Victorian rooflights would have been single glazed, but today's modern building standards are much higher and so single glazing does not meet the minimum requirements for thermal efficiency. Double glazing is the most popular option for genuine conservation rooflights because glazing technology means modern double glazed units can provide a number of benefits while remaining reasonably slender.

Some conservation rooflight suppliers are keen to boast about offering triple glazing in their products, but while this does offer a slightly improved thermal performance, it comes at the expense of appearance. The optimal spacer bar thickness is 16 millimetres, so any decent triple glazed unit is going to be almost 50 percent thicker than a double glazed version. With a flush fitting profile being one of the main requirements of a conservation rooflight, the introduction of triple glazing makes these rooflights almost impossible on some roof types.

Glazing bars?
It is often a stipulation from the conservation officer that a conservation rooflight should have a glazing bar to replicate that original Victorian appearance. It is not always the case, but it is definitely worth checking whether you need them before purchasing a conservation rooflight.

If your conservation rooflight does require a glazing bar, then it should be a genuine one. This distinction separates those producing close replicas of the original Victorian rooflights and those who are trying to pass off modern skylights as something more traditional. A genuine glazing bar should be something that not only divides the glazing but also provides additional strength to the casement.

Top hung or centre pivot?
If you are looking for a close replica of a Victorian rooflight then a top hung profile will be the one you should opt for. Not only does a top hung design offer a more authentic appearance, it also maximises the space below due to the casement not sticking into the room. Smaller top hung rooflights also utilise beautiful brass ironmongery to operate the casement, whereas centre pivot designs tend to rely on modern plastic handles, which are out of reach and offer nothing to enhance the internal aesthetics.

Is any old conservation rooflight suitable for my project?
Just because something is sold as a conservation rooflight, that does not automatically make it suitable for all building types. If your building is listed or in a conservation area then the criteria for using conservation rooflights are much stricter and you should always gain approval, not only for their use but also for the manufacturer that you want to use.

There are only a handful of companies that specifically make conservation rooflights and even fewer who design, manufacture and assemble them in the UK. Many conservation rooflights available online are simply other products which have been spruced up to look like they meet the requirements of that type of product. If you ask a supplier what the main difference is between their conservation rooflight and those used on modern buildings and the answer is a stuck on glazing bar, then you should avoid this supplier at all costs. Likewise, there are many elements which go into a genuine conservation design and price is always a reflection on quality.

Is there anything else I should consider when choosing my conservation rooflight?
With the UK government pursuing a carbon neutral environment it is imperative that every action is taken to reduce energy consumption. Rooflights are energy efficient as they let in large amounts of natural light, thus reducing the need for artificial lighting. Remember that bringing natural daylight into your home is about much more than creating a bright, welcoming environment, it is about protecting your health and wellbeing and achieving a more positive way of life.

One way to ensure that you maximise the amount of available light is to increase the size of your rooflights... or is it? Having a large rooflight does not always guarantee lots of light and you should always check what the finished viewable (or 'clear viewable') area of the rooflight will be. You might think that a conservation rooflight with a frame size of 900 millimetres wide and 1,200 millimetres high would have a similar clear viewable area regardless of the manufacturer, but you would be wrong. Bulky-framed modern types and flat rooflights posing as pitched conservation styles will let in considerably less light than a genuine steel-framed version.

With so many choices available, choosing the right conservation rooflight can be a bit of a minefield, but with proper guidance and advice it need not be a stressful experience. ■

If a conservation rooflight is all frame, then there is little point in having one. Genuine conservation designs should be manufactured with slim, clean lines and a low-profile to match the roofline.

Why flat roofs sometimes have the edge over pitched roof design

Words by James Wilkinson, Design Team Manager, Gradient

In residential or commercial environments, properties are generally covered with a pitched or flat roof design. Although different in style, both are designed to carry out the same task: safeguarding a building against the elements whilst contributing to the creation of a warm, thermally efficient interior. But why do some property owners opt for a flat roof rather than a pitched roof design or pitched roof extension?

Firstly, the title 'flat roof' is slightly misleading. No roof is completely flat, as each one must contain a slope, however slight, to allow effective rainwater run-off. If water is not properly dispersed from a flat roof, its weight will lead to deflections forming and increase the risk of ponding. This additional weight may increase the likelihood of a worst-case scenario: water-based structural damage, which is one of the most common forms of building failure.

Advantages of a flat roof over a pitched roof design

Although suitable for a range of environments and applications, flat roofs have greater prominence on commercial or publicly funded buildings including schools and hospitals. In these areas, the advantages of a flat roof over a pitched roof design are more pronounced for several reasons. Commercial roofing spaces tend to be much larger than residential settings and contain multiple levels, eliminating a sloped or pitched roof design as an option. Bearing less weight than a pitched roof design or pitched roof extension, a flat roof is more suitable for the safe, convenient placement of air conditioning units and other plant materials that are crucial to high-occupancy buildings. The ease with which flat roofs are accessed and upkept in comparison to pitched roof designs or pitched roof extensions is enhanced by their ability to accommodate edge protection and ladder systems. This reduces the safety risk during routine maintenance visits.

Pitched roof construction details

A roof's pitch is measured by the vertical rise in relation to horizontal run. There are two types of pitches: steep and shallow. A steep slope is between 45 and 60 degrees, while a shallow pitched roof design is between 20 and 45 degrees. The steepness or depth of a roof's slope affects how much water will run off it, so it is important for homeowners to know their roof's roof pitch.

Pitched roof verses flat roof

Pitched roofs, due to their height and visibility, are more of a striking statement in terms of aesthetics. However, flat roofs, on account of their rapid, cost-effective installation, easier maintenance and proven, long-term performance, find greater favour in commercial settings than a pitched roof design. That is not to say flat roofs can't look as smart as they perform. Such are the advances in the technical composition of roof insulation and waterproofing membranes that flat roofs can provide a building with a crisp, uniform finish that obscures less eye-catching details, such as solar PV panels and plant details, from being visible at ground level.

Flat roofs are typically more cost-effective to install than a pitched roof design or pitched roof extension. This cost-efficiency is enhanced by flat roofs requiring less maintenance to uphold performance, although twice a year inspection is still needed. A pitched roof design or extension might be considered more suitable for areas subject to heavy snowfall or rain due to their greater pitch allowing faster shedding of water.

Tapered insulation: a facilitator to successful flat roof installation

Tapered insulation is an effective way of creating falls to provide effective water run-off. It is an increasingly popular method of keeping a flat roof dry and warm and securing its long-term performance. Achieving such an outcome requires good planning and specification, all of which can be dealt with by experts in flat roof and tapered roof insulation. ■

How should designers deliver ‘gentle density’, as planning policy requires?

Words by Nigel Booen, Director of Design, Boyer

Since the rather vague concept of ‘gentle density’ (the word ‘gentle’ presumably introduced for political purposes) became a central theme of the National Planning Policy Framework, it has fallen to architects, developers and master planners to both make sense of it and deliver it.

The Georgian style is clearly a favourite, both among politicians and local communities. Keir Starmer has made the case for ‘gentle urban development’ and identifies Georgian-style housing as achieving this; and the Conservative’s Building Better, Building Beautiful Commission has long extolled the virtues of Eighteenth Century architecture.

Consumers embrace Georgian styles, and they will pay more for them. In 2018, Policy Exchange published ‘Building More, Building Beautiful: How design and style can unlock the housing crisis’, a forerunner to the work of the Building Better, Building Beautiful Commission. It used extensive polling, which showed that in the design of new homes, traditional building design was much preferred over contemporary architecture. Across all demographics, a large majority agreed that newly built properties should fit in with their surroundings. Support was used to substantiate the claim that NIMBYism (i.e. Not-In-My-Back-Yard-ism) can be overcome if design better reflects people’s desire for traditional architecture.

The style is exemplified at Poundbury, the community developed by the Duchy of Cornwall in Dorset, which is Georgian not only in its density but in every aspect of its design. Properties at Poundbury sell for 55 percent more per hectare due to a combination of public preferences and higher densities, according to analysis by Create Streets.

To understand whether ‘gentle density’ can benefit the quality and quantity of new developments requires a definition, given it has not had a place in the planning lexicon until now. This is where the problems start. ‘Density’ is relatively straightforward, as it can be measured in quantifiable terms. ‘Gentle’ means very little in a planning and design context, but its function, on any plain reading, is clearly to limit density rather than increase it. The wording purports to enable a higher volume of housebuilding, while also giving leeway to appease anti-development communities.

It is no coincidence that both the current government and the Labour Party have promoted the Georgian style of architecture as synonymous with gentle density. Not only is this style of architecture popular, but Georgian-style housing can achieve up to 40 to 60 homes per hectare, which is significantly more than the average housing development (typically 30-35 homes per hectare on comparable greenfield sites).

This comparison should be considered in context. While 60 homes per hectare may be considered dense in rural and suburban areas, it bears no comparison to a 40 storey apartment block in a city centre location.

Many question whether the Georgian style of architecture espoused at Poundbury should be mandated as the future of good design. Georgian architecture may represent the very best in design to some; to others the repurposing of a centuries-old style is regarded defeatist, retrograde, or even ‘Disneyesque’.

Perhaps schemes such as Poundbury will be effective not only in encouraging NIMBYs to accept development, but also accept higher density than they might have otherwise tolerated. But this only works in those areas where the average density is lower than a typical neo-Georgian development. Take that approach in London and the perfectly acceptable densities currently achieved will be lost, homes will become increasingly scarce, house prices will sky-rocket and local centres will become desolate and unviable.

Over the last parliament we have seen ‘beauty’ and ‘gentle density’ embedded in both planning policy and case law. As the then Secretary of State Robert Jenrick said when introducing the concept in 2020, through design codes we have the structure to deliver a “higher regard” on quality and design; one that draws on “the idea of design codes and pattern books that built Bath, Belgravia and Bournville”.

But we still lack anything constructive to prevent other housebuilders from failing on ‘beauty’ grounds. This was clearly demonstrated last April when the Secretary of State Michael Gove called in and subsequently refused planning permission for a 165 home development by Berkeley Homes in Cranbrook, Kent. The outcome of the Berkeley case was “no” but not “no, because beauty is…”. This potential test case is crying out for a clear definition of beauty; a clear selection of criteria; which is yet to be addressed.

In practice this (and similar, subsequent decisions) makes the whole process of designing new developments more fraught with uncertainty. And uncertainty is the last thing we need at the moment, with so many other uncertainties with the planning system. It provides ammunition for planning committees to refuse other schemes on similar grounds. Without anyone knowing what the benchmark is, design could be an easy target to justify refusal, which, as some have suggested, was perhaps the government’s main objective. ■

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How plastic can future-proof plumbing in modern homes

Words by Richard Bateman, Product Marketing Manager, RWC

As efforts to enhance sustainability gain momentum, plumbing and heating systems are increasingly in the spotlight. This article explores the role of plastic in driving performance and future-proofing modern homes.

Demand and sustainability are two factors transforming the landscape of the UK housing sector, creating improvements in speed and quality and driving forward efficiency. Plumbing is typically a leading factor in sustainability, contributing to 17 percent of a typical home's emissions.

To keep up with the growing demand for housing, more than 130,000 new homes were built in 2023. Insights from the Home Builders Federation also suggest that these properties are making significant strides towards sustainability targets, with 85 percent of new builds, emitting 61 percent less carbon per year and making energy bills up to 55 percent cheaper than the average older home.

These figures are hugely encouraging. For plumbing and heating specifiers and contractors, understanding the solutions that contribute to these figures is key to achieving improvements, particularly as the Future Homes Standard comes into force in 2025.

Unlocking potential with plastic

Creating new homes presents an opportunity to build efficiency, quality and reliability into every aspect of the build. A major shift in how modern homes are heated – away from traditional radiator systems and towards underfloor heating – is just one example of this. The recent changes to Part L Building Regulations mean that the flow temperature of heating systems should not exceed 55 degrees Celsius. This not only makes a significant impact on sustainability but also extends the longevity of systems, as it allows them to work within optimum conditions. Underfloor heating is ideal here, operating effectively within these lower temperatures and facilitating sustainable operation.

Material choice is critical at the point of specification, and plastic is a potential front-runner for several reasons. As well as supporting the efficient performance of plumbing and heating systems, plastic components can deliver reliability over the long term, contributing to sustainability credentials while performing consistently.

Unlike traditional materials, plastic pipes and fittings streamline the installation process. Innovations like plastic push-fit technology remove the complexity from installation, leading to faster and easier installations that boast consistent levels of quality, reliability and performance.

Advancing performance and efficiency

We know plastic is perfectly suited to hot and cold plumbing and heating systems and that it can be used on most applications, but how exactly can it support sustainability?

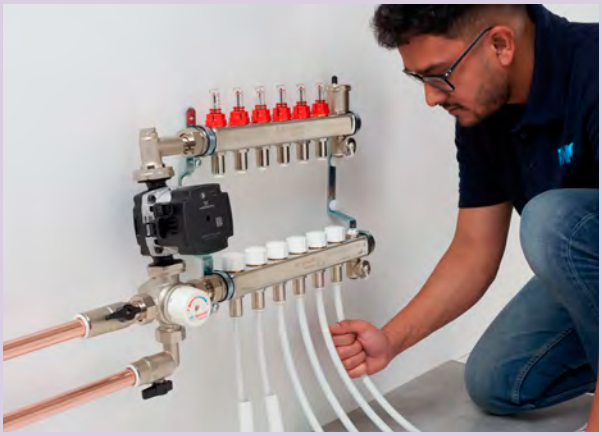
Primarily, plastic pipes and fittings underpin efficient system performance. Leaks, for example, present a common problem in plumbing systems, but can be minimised with plastic solutions. Connections are the main cause of leaks, so by strengthening individual connections and their overall volume within a system, the potential for leaks can be decreased. Plastic makes this possible, both with push-fit technology, delivering consistently strong connections, and through using polybutylene pipe to create long pipe runs, minimising the number of connections required.

Solutions including plastic manifolds make it possible to easily centralise and distribute water feeds to maximise efficiency. Establishing a centralised pipework junction allows systems to optimise consumption and further minimise the potential for leaks.

Water control valves are also essential, both to everyday operational efficiency, safety and to support future maintenance. Installing Thermostatic Mixing Valves to bath outlets is critical in new build properties, so the user can blend hot and cold water and ensure safety at the point of use. Compact and easy-to-install options can also bring added value to new build homes. Where maintenance is concerned, the specification of service valves can also facilitate the swift isolation of water to appliances and fixtures, optimising efficiency and making future maintenance works more straightforward.

Conclusion

Specifying plastic solutions for new build homes can unlock the potential to create future-proof plumbing and heating systems. Whether it is fittings, valves, manifolds or pipes, plastic push-fit technology strengthens every connection and makes the installation of plumbing and heating systems quick and easy. ■



Fit for purpose: specification challenges to keep in mind when designing future-proof homes and buildings

Words by Eric Winter, Director of Product Development, RWC

The population of the UK is growing and, as it does, the demand for housing increases with it. Official estimates from the government's manifesto outline the need for around 300,000 new homes every year over the next decade, while a large proportion of existing homes also require upgrading to make them suitable for modern living. For specifiers, fulfilling this huge demand for new homes and home improvements is just one part of the puzzle, as buildings need to be designed for the future too.

When designing homes and buildings that can perform well for decades to come, the specification of systems is of paramount importance. Whether it is a new build property, conversion of an existing building, or even a home improvement project, specifiers must consider the long-term capabilities of materials and solutions to ensure reliable long-term performance, alongside safety and sustainability.

Reducing pressure with PRVs

To safeguard a plumbing system for years to come, it's essential you manage the water pressure from the mains supply. Whilst low water pressure can cause frustrations for end users, high water pressure can be far more dangerous, both for end users and the health and longevity of the overall system.

Pressure Reducing Valves (PRVs) are an essential device for specifiers when negating the harmful impacts

of high water pressure. As UK water pressure can vary between one and fifteen bar, PRVs work to reduce high inlet pressure to a safe and consistent level. This helps heating systems and individual valves and appliances operate more safely and efficiently.

To specify PRVs successfully, sizing is critical to achieving a suitable flow rate and reliable pressure control. Undersized and oversized PRVs can have adverse effects on the overall system, including unwanted noise and accelerated damage. For optimum performance, you should size the PRV in accordance with the anticipated demand and volume of outlets required. For domestic buildings that require PRVs, compact options deliver the same level of protection, without taking up lots of valuable space; space being a key consideration in modern homes with a smaller footprint.

Improving safety with backflow prevention valves

Besides maintaining safe water pressures within properties, you should also specify systems to keep the supply itself safe. Backflow prevention valves are designed to protect systems from contamination, preventing unsanitary water from flowing back into the network.

For successful specification, it is critical to know the fluid category of the downstream equipment that is connected to the plumbing system. This identifies the level of contamination risk that needs to be prevented. With five categories outlining the different requirements for backflow prevention, specifiers can easily understand the level of protection required from project to project.

Domestic new build buildings are going to be somewhere between a category one and category three level risk and so will require zero to intermediate levels of backflow prevention. Buildings deemed Fluid Category 1 require zero backflow protection, Fluid Category 2 requires single check valves, and Fluid Category 3 requires double check valves.

Considering that it is just as simple to fit a double check valve as it is a single one, we recommend the use of a double check valve in preventing backflow in domestic situations.

Specifying sustainability

Sustainability is a significant factor in creating future-proof homes. The housing stock is already one of the largest contributors to greenhouse gas emissions in the UK, with around a fifth of housing-related emissions coming from heating water in the home. As targets toward net-zero tighten, domestic plumbing systems will play a critical role in creating buildings that are fit for a sustainable future.

Where water is concerned, leaks are a common problem that can be minimised with the use of high-quality pipes, valves and fittings. While leaks are more common in the national infrastructure where over 3,000 million litres are lost to leakage every day, leaks regularly occur within domestic hot and cold water feeds, standing in the way of efficiency efforts. With these leaks more likely to occur at connection points, reducing the number of connections across a system can help to protect homes from leaks, making systems more efficient. This can be achieved by using more flexible pipe solutions, which can bend around corners and through joists to cut down on connections and in turn the potential for leaks. (For ways to reduce leaks using plastic solutions, please see the article on Page 37.)

Whilst low water pressure can cause frustrations for end users, high water pressure can be far more dangerous, both for end users and the health and longevity of the overall system.

Ensuring that buildings are designed to last, particularly from a plumbing perspective, should be a key priority for specifiers. By building sustainability and performance into every system – from leak-proof plumbing through to future-proof heating – buildings can perform better and contribute to overarching efforts to reduce emissions, all while improving comfort for occupants. ■

Fall protection systems: an essential briefing for designers

Words by Stuart Pierpoint, Specification Sales Manager, MSA Safety

Recent legislation changes highlight designers' responsibilities for ensuring robust fall protection in building design. So, what do you need to be aware of if you are the lead designer? This article offers an insider's guide on what you need to consider with fall protection systems.

Design plays a key role in keeping workers safe when working at height. Thinking about it right from the start is key; if you integrate a fall protection system into your design you will deliver a structure that both looks good and is safe to work on at height. This isn't just an ethical must; it is also a legal requirement.

The legal context

As a principal designer, your responsibilities for ensuring that robust fall protection is in place are set out in HSE Guidance and the Work at Height Regulations, first published in 2005 and updated in 2007.

The recent Building Safety Act (2022) assigns principal designers even more responsibility to be a 'guiding hand' for health and safety features and instalments through the design and construction of all buildings. As such, Architectural Technologists have a significant role in ensuring robust fall protection in building design.

Many UK design and architectural practices have welcomed this renewed focus on safety. At a recent webinar on fall protection, architect Paul Bussey, from Allford Hall Monaghan Morris, described the new Act as a major wake-up call. "The UK design and construction industry has for too long been deregulating, relaxing and gaming fire safety and health and safety regulations," he said. "It's time for a major culture change."

So, what are your main duties as the lead designer? Well, it is your job to plan, manage and monitor, eliminating hazards "so far as is reasonably practicable" (Work

at Height Regulations 2005) and reducing risks from remaining hazards.

You should set out your fall protection strategy as part of the Health and Safety Plan, specifying solutions to minimise the risks of working at height. These solutions should cover the whole building life cycle, from construction to ongoing maintenance. Start by asking yourself which rooftop areas need access, the frequency of this access, the number of people who will be involved and the training that they will need to have. All these factors should guide your decision-making.

Getting the balance right

In deciding what is "reasonably practicable" and what are the most effective solutions for your project, you will want to question where the right balance lies. Innovation versus proven systems? Creativity in design versus confidence and safety? Cutting edge or compliant? These are the kind of questions that principal designers should ask themselves every day as they grapple with the challenge of fall protection safety.

Clearly, aesthetics are fundamental, fall protection systems that have longevity are a must and budgets are an essential consideration. But, most importantly, you will want to keep the risks of working at height to the absolute minimum, getting safety right from a business, ethical and moral perspective.

Fortunately, there are approaches in place where designers do not need to choose between these options, which enable the highest standards of safety when it comes to fall protection.

Implementing the hierarchy of fall protection

When designing safe access, you should follow the hierarchy of fall protection. This means eliminating any fall hazard in the first instance by designing it out. Where this is not possible, you should explore collective fall protection, like, for example, a guardrail that acts as a physical barrier between the worker and the hazard. Installing collective fall protection will allow less-trained users to access a rooftop without the need for personal protective equipment.

If collective fall protection is not possible, because of planning constraints, rights of light or 'viewing corridors', your next option is to specify a personal fall protection system. There are two kinds: a fall restraint system and a fall arrest system.

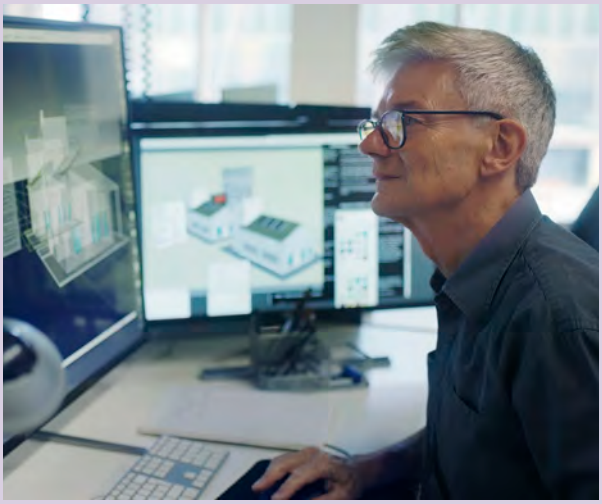
In trying to achieve the right balance in designing a building that is both aesthetically pleasing and safe to work on at height, it is important to keep things in perspective.

With a fall restraint system – the preferred option – workers use fall protection equipment, such as an anchor point, harness and fixed length lanyard, preventing them from reaching the hazard.

If a fall restraint system is not possible, then the remaining option is to specify a fall arrest system. This allows trained workers, wearing specialist equipment to access the hazard, safe in the knowledge that if they do fall, their fall will be arrested by this equipment.

The design options open to you

There are two main design options open to you when specifying a personal fall protection system: a perimeter system and a ridge system. With a perimeter system, users have full movement around



the perimeter while always remaining in restraint. With a ridge system, which is suitable for both fall restraint solutions and fall arrest solutions, workers use additional single point anchor posts to gain access to roof corners. It is worth noting that both systems should be tested for fall arrest, in case of misuse.

Test standards for fall protection systems

Once you have decided what kind of fall protection system is most suitable for your project, your next challenge is a choose a system that meets the right test standards. This means specifying a system that meets both the EN 795:2012 standard (updated from the 1997 standard) for single user anchor devices and the CEN/TS 16415:2013 standard for multi-user anchor devices.

There are a few things to be aware of in relation to test standards. Do not assume that a system tested against the old 1997 standard will be capable of meeting the revised standards. Check that a system that claims to be tested against current standards has been tested against the 2012 standard; it may only meet the 1997 standard.

You also need to check that the system has been tested on the structure or base material it will be used on; for example, that it has been tested using UK standard BS 8610. This is important because anchors perform differently on different materials and roof structures when force is exerted.

It is also worth being aware that, should a contractor substitute a different fall protection system from the one you specified, you could be held legally liable in the event of serious injury or death if the quality is not the same as the one stated. This is the case even if the change took place without your knowledge.

Keep things in perspective

In trying to achieve the right balance in designing a building that is both aesthetically pleasing and safe to work on at height, it is important to keep things in perspective. Remember those key words: "so far as is reasonably practicable". You are not responsible for everything. No one expects you to control the way that contractors manage health and safety or design for future uses of the building that you could not reasonably have anticipated. By knowing what your responsibilities are, taking them seriously, and partnering with a trusted and innovative supplier of fall protection systems, you can stay compliant and help keep workers safe. ■

Let's talk: why the construction sector must embrace workplace mental health support

Words by Ellie Jobes, HR Director, Bagnalls

In England, more than one in seven people say their mental health is either bad, or the worst it has ever been. Brits have faced a range of challenges in recent years, with inflation and the cost-of-living crisis continuing to affect mental health. In an attempt to combat this, movements like MIND have encouraged more open attitudes towards mental health in public and in the workplace, making it easier for people to discuss their problems.

This process has been undeniably helpful in legitimising the concerns of those suffering with their mental health. However, there is still a long way to go, particularly in male-dominated fields such as the construction sector. Employers' past failures to provide adequate mental health support, coupled with a continuing culture of machismo, means that the construction sector has historically lagged when it comes to addressing mental health issues.

But in recent years, a growing number of construction companies have begun to adopt mental health policies. Employers are beginning to foster a more open, conversational culture and are training Mental Health First Aiders to provide additional support. At commercial painting specialist Bagnalls, we have made great strides in embracing mental health support across the business.

Why is mental health more important now than ever?

Mental health is a huge concern across the UK; the number of people accessing NHS mental health services has increased by more than one million in the last five years. Since 2020, Brits have been forced to deal with successive COVID-19 lockdowns, followed by rising energy bills, a rocketing cost-of-living and a recession.

Research from the ONS shows that rates of depression

are higher amongst those who are struggling to afford housing costs or energy bills. Rates are also higher among renters than homeowners, indicating a clear link between financial security and declining mental health.

Why are mental health matters so important in the construction industry?

The construction sector is affected by the same national issues impacting the UK's wider mental health, but also faces several sector-specific challenges that are exacerbating the crisis.

An HSE report from October 2023 points to five underlying causes of mental health issues within the construction sector: high stress working environments, physical strain, job insecurity, long hours and stigmatisation.

Wider economic issues are piling further pressure on some of these causes. Tightening budgets are making project deadlines more rigid than ever, while workers feeling the squeeze on their personal finances are more likely to take on excessive overtime.

Job insecurity has long been an issue in the construction sector, with many of the sector's workers employed on a project-by-project basis. National financial instability means construction jobs feel less secure than ever, compounding the issue.

Mental health and machismo

The nature of the construction sector plays a key part in HSE's fifth factor affecting mental health: stigmatisation. UK-based charity Mates in Mind found that over two thirds of construction workers believe there is a stigma surrounding mental health that prevents them from talking about their issues. Given that construction is a largely male-dominated sector, with 82 percent of all UK construction workers identifying as male, it is hugely important we break down these barriers to communication.

With machoism still sadly enduring in the sector, there is little surprise that suicide rates are higher amongst men in this industry. Construction is one of the UK's highest-risk industries for suicide, with suicide rates 3.7 times higher than the national average. Of those, four in five are men.

Modern companies must make an effort to change this culture. Employers should provide proper outlets for mental health discussions and foster an environment in which employees feel empowered to speak up.

What support is available for people in the construction industry?

Mental Health First Aid (MHFA) England exists to provide support to workplaces in a vast array of industries through adapted training and new resources. Striving to train one in ten people in mental health awareness and skills, the organisation's aim is to break down the stigma surrounding mental health and cultivate a culture in which speaking freely about your mental health is accepted.

Through the Mental Health First Aider course, members of a company or organisation can learn how to better listen and reassure and respond to people dealing with mental health struggles. In the male-dominated construction sector, where speaking freely about mental health can be an obstacle, it is more important than ever that colleagues are attuned to their peers' feelings.

If an employee is still finding it difficult to talk openly about their mental health, Wellness Action Plans, like those from Mind, can be a helpful alternative. These plans can also help employers understand their staff's needs and concerns, particularly if traditional verbal conversations feel impossible.

There are many ways in which companies in the construction sector can foster a more open culture. At Bagnalls we offer an Employee Assistance Programme, which is available to access all day, every day. We are also expanding the number of Mental Health First Aiders in the company, making it easier for members of the team to get access to the proper support.

Bagnalls has a good relationship with Andy's Man Club, a men's suicide prevention charity that offers free-to-attend peer-to-peer support groups across the United Kingdom and online. This has helped the company make the necessary changes to increase openness in the workplace.

How the construction sector benefits from implementing mental health support

Stress, anxiety and depression account for one fifth of all work-related illnesses, resulting in 70 million annual sick days across the industry. The related cost of these sick days is an estimated £70-100 billion. By providing adequate mental health support, employers can help create a safe space for employees, minimising the amount of days missed due to mental health concerns.

Not only this, addressing mental wellbeing in the workplace could help increase productivity by as much as 12%, according to a 2015 study, while helping employees to feel more valued at work. Whilst it may not always be possible to change how employees feel, it is always helpful to let them know that a support framework is in place should they feel ready to talk. ■

The four stages of pension planning

Words by Kevin Hollister, Founder, Guiide

Let's discuss the decisions people aged 25, 40, 60 and 75 will have to make when considering their desired retirement outcomes.

25 years old

Pensions seem worlds away when you are young. These days, though, every employer has to offer you a pension scheme. A percentage of your pay is put into the pension scheme and your pot builds up over time. Make sure of one thing: don't miss out on this money!

When you are 25, you do not need a detailed plan. You just need to know the answer to one question: given what I have and am paying in, what age will I likely be able to retire with a feasible retirement income? Don't worry too much about anything else, as so much will change.

40 years old

Retirement no longer seems like light years away. In twenty years or so, you will need a viable retirement income. So, it is time to think a bit more about a plan.

You have probably built up some pension pots over the first fifteen to twenty years of working. These pots, in addition to your future contributions and your State Pension, will likely make up the bulk of the income you will need once you retire.

Do some homework and track down your old pension statements. These days most providers have online access.

No idea who these pension providers or schemes were? The first place to start looking is the government's pension tracing service. This will help you understand who the provider was at the time you worked at a previous employer.

Then, understand what your State Pension may be by checking your National Insurance contributions.

No idea what you will need in retirement? Luckily for us, the Pensions and Lifetime Savings Association (PLSA) produces a set of after-tax incomes needed to have a minimum, moderate or comfortable lifestyle. They also show what each type of lifestyle means in practical living terms. It is a great free resource, so use it.

You know what you have already, you know what you want and ideally when you want it from. So, the key question in your plan is: how much do I need to pay from now on to get it? That should be the focus of your plan at this age.

60 years old

Retirement is now just around the corner. You may well be thinking about it daily. Now is when you need a detailed plan for your retirement income.

Retirement is likely to last twenty-five to thirty years. So now is the time to refine your plan to make sure you can get what you need, based on what you know now.

Remember, retirement is not just about pensions. By now you may well have other non-pension assets and incomes to use in any plan. Using all of these in the right way alongside your pensions is key.

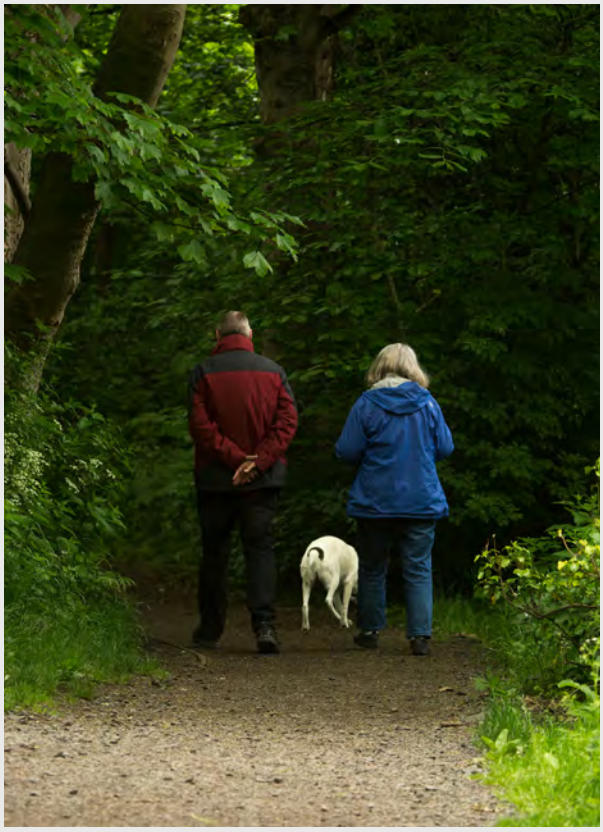
If you want more security, get annuity quotes to find out how much some more guaranteed income on top of any State Pension will cost. These two together may cover any essential spending and give you peace of mind.

Make sure you don't do anything at retirement to end up paying more tax or losing income. You will only have so much to last through retirement, so make sure it is what works best for you.

A note about cash lump sums and tax

You can take 25 percent of your pension pot as tax-free cash. Do you need this tax-free cash at retirement? Will it be used to pay off a mortgage, other debts or enjoy a big spend? If you don't take it at retirement, you can keep it in your pension pots and get 25 percent of every payment from your pots tax-free.

Any cash taken above this 25 percent is taxed, possibly at a high rate. Think carefully: do you really need this now?



If you have several pension pots, will you really want to take income from these different places and deal with different provider's call centres?

It is more likely you will want to put your pots together to be able to take money from one place. If so, there is lots to think about, but the main three issues are:

- Don't lose any guarantees by moving pots.
- Don't pay any exit penalties when you move.
- Ensure your chosen provider has clear charges you can understand in two minutes, with no hidden one-off costs.

For most people, a simple low-cost fund designed by experts is best for the investment behind their pension. You can usually select one designed for long term drawdown 'off the shelf' with the provider you choose.

No idea what you will need in retirement? Luckily for us, the Pensions and Lifetime Savings Association (PLSA) produces a set of after-tax incomes needed to have a minimum, moderate or comfortable lifestyle.

75 years old

You have been enjoying retirement for a while, using your plan. Your future income each year in your plan will be made up of fixed parts, like the State Pension, plus any flexible income you take from any remaining pensions and savings pots.

Keep monitoring your plan each year. If your plan still looks good, you can continue to take your income as expected.

If things are going well, one option is to consider guaranteeing your future income. When you get beyond 80, do you really want to be tracking your plan anymore? You may, if possible, just want to buy a fully guaranteed income for life with your remaining pots. Get some updated quotes. Can this provide you with enough for what you need now?

If your plan now has expected shortfalls, you may look to change your plan to a flat income as a simple way to remove future shortfalls. The same income level will continue, but will buy less and less in future due to inflation. This may still be a good match for your later years as many people's spending declines beyond 75.

Until you have fully secured everything by using your remaining pots to buy a lifetime guaranteed income, you will need to keep tracking your plan year-to-year. Make sure you do, as your pots will move up and down. This will help you ensure you will either get what you need in the future or be able to adjust things quickly if not. ■

AGM 2024

Notice of the Annual General Meeting 2024

Notice is given that the Annual General Meeting of the Chartered Institute of Architectural Technologists will take place on Saturday 16 November 2024 for the following purposes:

- To consider the Annual Review.
- To consider the accounts and balance sheet as of 30 April 2024.
- 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 Regional and Centre Committees.

Tara Page
Chief Executive
May 2024

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

FAQs

What is the AGM?

The Annual General Meeting (AGM) is the yearly business meeting for the Institute, which is required to comply with the Laws of the Institute (please see the formal notice published here).

Where is the AGM being held?

The AGM will take place at The Spine, Paddington Village, Liverpool which is within easy travel of Liverpool Lime Street Station and Liverpool Airport. The provisional timing for the day is 10:30 – 15:30, however, the AGM agenda and actual timings for the day will be confirmed in September, following the Council meeting (once the business for the AGM is known). The AGM business will be conducted in the morning. A conference is scheduled for the afternoon with more details to be confirmed.

Friday evening social charity evening, hosted by the North West Regional Committee

The North West Regional Committee is in the process of arrange a social charity evening. All members and affiliates (whether they are delegates or not) can choose to attend at their own cost. This event is self-funding, including the hotel accommodation for the Friday night.

Who attends the AGM?

The meeting is Chaired by the President, who is supported by the Honorary Secretary, Honorary Treasurer and Vice-

Presidents. Each Region and Centre has representation at the AGM, namely its Councillor and Voting Delegates, who have been elected to represent the membership by the Regional and Centre Committees. Non-members who attend are the Auditor, to present the accounts, the Chief Executive and support staff.

Can I attend the AGM?

Any member or affiliate can attend the AGM, but you must register your attendance. As a member or an affiliate, you may take part in any debate but cannot vote. The vote has been delegated to the Voting Delegate from the Regions and Centres.

How do I register to attend?

Please register your attendance by emailing Joanne Rowlands: j.rowlands@ciat.global

If I am a Past Chairman or President, do I still need to register to attend?

Yes, Past Chairmen and Presidents will be invited and will need to register to attend the AGM.

Will I receive papers for the meeting?

All members and affiliates who have registered to attend the AGM will receive a set of papers electronically before the meeting takes place.

How is the vote taken?

Only Voting Delegates can vote, and they are voting on behalf of their Region and Centre as delegated by the Regional and Centre Committees. The vote will be via an online voting platform to ensure that the vote is recorded fairly and correctly.

How is my vote represented?

Your vote is delegated to your Regional and Centre Committees. You will need to contact them directly; you can find details here: architecturaltechnology.com/about/regions-centres-aspiration.html

How are the Voting Delegates elected for my Region?

In the first quarter of each year, the Chief Executive advises Regions on the number of Voting Delegates they are entitled to elect to represent the view of their Region. All Voting Delegates must be Chartered Members and all Chartered Members in the Region must be informed of the election of Voting Delegates to ensure fairness.

As agreed by Council, the breakdown is based on membership as of 1 March every year. A Region is entitled to:

Member numbers	Voting Delegates
100	1
100+	2
350+	3
700+	4

How are Voting Delegates elected for my Centre?

In the first quarter of each year, the Chief Executive advises Centres on the number of Voting Delegates they are entitled to elect to represent the view of their Centre. All Voting Delegates must be Chartered Members and all Chartered Members in the Centre must be informed of the election of Voting Delegates to ensure fairness.

Centres 01 and 03-07 elect one Chartered Member, who will have the necessary number of votes according to the Centre's membership with, where appropriate, multiple votes.

The Republic of Ireland Centre's number of votes is based on the Regional model and will have its number of Voting Delegates based on the member number in the Centre.

What are the Resolution(s)?

The AGM will receive and debate the Resolution(s) put forward. These are typically changes to the Laws of the Institute.

What is the process for Resolution(s) for consideration at an AGM?

Regions/Centres who wish to table a Resolution(s) for consideration at the AGM must submit their Resolution(s) in the prescribed format to the Chief Executive in line with the timetable issued to the Region/Centres in the first quarter of each year. For this year, the deadline is 23 August 2024. For further information please contact Joanne Rowlands in the Chief Executive's Office: j.rowlands@ciat.global.

The Chief Executive will receive and present the necessary papers for the Council's consideration, in consultation with the Regional or Centre Councillor, and the Council will take a decision on whether to place the matter before the AGM, as an Institute Resolution and handled in the same way as any other Council recommended Resolution.

Individual members, other than members of the Regional or Centre Committee, also have the right to put a proposal to be considered at the AGM. Any such member may approach their Regional or Centre Committee for consideration of their views. The member should be invited to the Committee meeting for that specific item of business. If endorsed by the Region or Centre Committee, the proposal would then become a Region or Centre submission. This must also be on the prescribed format.

Alternatively, the member may approach the Chief Executive direct with a request for a proposal to be considered. The Chief Executive issues the notice of an AGM together with the timeframe for submitting Resolution(s) for an AGM, in line with the Laws of the Institute.

When are the Resolution(s) published?

The Resolution(s) are published in September following the Autumn Council meeting. These are circulated to all members and affiliates by email. ■

If your question has not been answered, please contact the Chief Executive's Office by emailing Joanne Rowlands: j.rowlands@ciat.global

Expo Sunderland Pavilion

CIAT are proud to be a Supporting Partner of Expo Sunderland, which is a series of inspiring and exciting events taking place over the next couple of years and are aimed at showcasing innovative solutions and fostering discussions around sustainable urban living, smart city technologies, and future skills. Expo focuses on various themes such as healthy living, environmental sustainability, and technological advancements, with the goal of enhancing the quality of life for residents and making Sunderland a model of a future-ready city.

Central to this initiative is the Expo Pavilion, a contemporary, immersive exhibition space designed to showcase innovation and ambition within the city. This is a modern, transparent structure featuring one of the UK's largest semi-transparent immersive screens. The screen will offer stunning visual displays that appear 3D, thanks to its translucent material. The pavilion will host various exhibitions, interactive installations, and live streaming events, highlighting Sunderland's smart city capabilities.

Developed by Sunderland City Council and designed by Building Design Northern (BDN), the pavilion has been designed with second life in mind. It will be a compact pilot collection of virtual reality experiences and innovative use of semi-open spaces, acting as public information hubs to fully immerse visitors in renewable and sustainable living. Located at the heart of the transforming public square, Expo Pavilion, a contemporary exhibition and immersive space, and this has been designed to respond to surrounding architecture, while introducing a high-quality and visually striking temporary space.

''The Vaux Neighbourhood" is a new urban carbon neutral living quarter which is under construction on Riverside Sunderland. Designed to suit 21st century living patterns, it is being built using Modern Methods of Construction, a range of sustainable and low carbon technologies and renewable energy that will contribute to the city's commitment to become carbon neutral by 2030. This event will be the first introduction to the residents, consumers and businesses of Sunderland to experience these homes and learn of newer sustainable ways of living.

The Expo Pavilion launch event, **"Come & See"**, will take place 13-15 August and will unveil a visually striking structure anchored at the heart of the city centre, to tell the story of a home in the context of its place to the public.

The pavilion sets to re-imagine the evolving notion of a future home beyond 2030 in the heart of Sunderland, celebrating advancements in construction, technology, and collaboration.

Exploring the art of the possible through the installation of a light gauge steel frame with highly recycled content and low carbon technologies to create a demountable skeleton frame.

The structure itself will contain amazing displays and interactive exhibitions that really capture the imagination of people who visit, while the monolithic scale of the screen that stands above it will allow us to create really exciting content that will appear to be floating in the air above the house.

Expo Sunderland says "We want to showcase pioneering innovative concepts for the future home in

Sunderland in a building that pushes boundaries and sparks imagination. This fits brilliantly into our plans for Expo, which will bring many thousands of people to our transforming Riverside Sunderland, to experience the incredible level of change in this part of the city, as well as informing the content of Culture House, which will open its doors in 2025."

Sunderland Pavilion represents an opportunity to engage residents and visitors in a new and exciting way.

The structure stands a stone's throw from the location of the new Culture House, currently under construction and set to spark imagination and foster innovation when it opens, with immersive, interactive and digitally powered exhibitions and spaces that will appeal to all. ■

For more details on the upcoming events, the pavilion's role in Expo Sunderland and how your business can get involved and exhibit within the structure, you can visit the official website www.exposunderland.com or contact Clair Cogdon, Sales & Marketing Manager, clair@exposunderland.com or 07454 252182.

Expo Sunderland – are you in?

Elections in September – nominees standing

In the spring issue of *AT Journal*, we showcased the manifestos for those standing for election at Council in September.

Here is a reminder of the positions and the candidates standing:

Honorary Treasurer
Stacey Taylor MCIAT

Vice-President Technical
Dan Rossiter FCIAT

President Elect
Dr Gihan Badi FCIAT

President Elect
Tom Gray MCIAT

President Elect
Paul Laycock MCIAT

President Elect
Usman Yaqub FCIAT

Candidates gave a presentation at the Council meeting held on 9 March to Regional and Centre Councillors to support their manifestos and to allow the opportunity for questions. We encourage you to liaise with your local Region, Centre or aspirATion about these.
The full manifestos can be read on the website at: architecturaltechnology.com/member-homepage/honorary-officer-elections/about.html

If you would like to pose your own questions to the candidates or would like to find out more from them, there are two Hustings that will be hosted by the Institute in the summer – in person on 24 June and online on 11 July at 18:30.

N.B. These events can only be attended by members and affiliates, and you must register in advance. The full protocol for attendance will be provided in advance of the events.

The campaign trail: summary of key dates

Campaigning by candidates including Hustings:
7 September 2024

Election at Council:
7 September 2024

Assumption of position:
16 November 2024

Close of 2024 AGM:
16 November 2024

Membership news

Chartered Architectural Technologists

We would like to congratulate the following who successfully attended their Professional Interview and are now Chartered Architectural Technologists, MCIAT:

034024	Callum McChesney	Northern, 01
031601	Elliott Young	Northern, 01
034942	Mathew Chapman	Yorkshire, 02
038199	Umut Gokcay	Yorkshire, 02
034754	Sam Lambert	Yorkshire, 02
035621	Luke Siddle	Yorkshire, 02
026184	Susan Sutherland	Yorkshire, 02
024164	Andrew Swift	Yorkshire, 02
029377	Christian Verrill	Yorkshire, 02
029410	Sara Vieira Nobre Biscaya	Yorkshire, 02
021831	Samuel Gallimore	North West, 03
033679	Cameron McIntosh	North West, 03
030308	Bhavna Crossley	East Midlands, 04
033835	Thomas Holm-Johansen	East Midlands, 04
031353	Katie Nesbitt	East Midlands, 04
032008	Reece Scattergood	East Midlands, 04
023967	Toby Hindle	West Midlands, 05
034071	Reiss Mason	West Midlands, 05
032987	James O'Donoghue	West Midlands, 05
031245	Munir Shaikh	West Midlands, 05
030450	Jennifer Broad	Wessex, 06
034725	Barnaby Chadwick	Wessex, 06
036358	Adam Chapman	Wessex, 06
025248	Gavin Dungan	Wessex, 06
036639	Martyn Woodward	Wessex, 06
035935	Ross Foulkes	East Anglia, 07
037789	Nicholas Jackson	East Anglia, 07
018985	Kevin Lyons	East Anglia, 07
034832	Lana Poole	East Anglia, 07
028029	Edward Stock	East Anglia, 07
033027	Graham Terry	East Anglia, 07
031402	Kevin Wright	East Anglia, 07
034933	Michael Newsway	Central , 08
030788	Kirsten Adjei-Attah	Greater London, 09
037015	Gordon Lindsay	Greater London, 09
0000341	Paul Turpin	Greater London, 09
037559	Joshua Browning	South East, 10
033391	Joshua Foreman	South East, 10
037650	David Hutchings	South East, 10
014872	David Cole	Western, 12
015277	Leigh Emery	Western, 12
036829	Sophie Ford	Western, 12
037820	James Golightly	Western, 12
029838	Jordan Anderson	Scotland West, 13
038188	Robbie Bellshaw	Scotland West, 13
025738	Jennifer Groundwater	Scotland West, 13
010020	Brian O'Donnell	Scotland West, 13
025271	Alan Brodie	Scotland East, 14
035954	Rebecca Reid	Scotland East, 14
026734	Richard Burnside	Northern Ireland, 15
031088	Michael Daly	Northern Ireland, 15
032136	Jonathan McAteer	Northern Ireland, 15
028379	Adam Savage	Northern Ireland, 15
037986	Gareth Carr	Wales, 16
035187	Philip Couzens	Wales, 16
019570	Clair Hughes	Wales, 16
017970	John Littlewood	Wales, 16
034163	Aida Medina Centeno	Wales, 16
021977	Federico Putzu	Wales, 16
029512	Owen Rees	Wales, 16
033988	Chloe Williams	Wales, 16
037952	Mark Halley	Republic of Ireland, C2
017593	Peter Rogers	Republic of Ireland, C2
031212	Ronan Sweeney	Republic of Ireland, C2

Welcome back

We would like to welcome back the following Chartered Architectural Technologist:

033930	Stephen Home	Scotland West, 13

Fellow Members

We would like to congratulate the following Chartered Architectural Technologists who successfully completed their application and are now Fellow Members, FCIAT:

025575	Lalit Chauhan	Greater London, 09
006904	Martin Quirke	Greater London, 09

Chartered Environmentalists, CEnv

We would like to congratulate the following Member who successfully attended their Chartered Environmentalist qualification:

007364	Andrew Hole	Wales, 16

CIAT-Accredited Conservationist

We would like to congratulate the following Members who successfully attended their CIAT-Accredited Conservationist qualification:

016997	David Houltby	Yorkshire, 02
027506	Sean Knight	Wessex, 06
029283	Tom Welch	Wessex, 06
028785	Luke Geeves	Central, 08
023845	Peter Thompson	Western, 12

Registered Principal Designers

We would like to congratulate the following Members who successfully attended their Registered Principal Designer non-HRBs and HRBs qualification:

023866	Jordan Armstrong	East Anglia, 07
021750	Chung Tung So	East Anglia, 07
029702	Justin Kelly	Greater London, 09
018212	John Smith	South East, 10
017769	Paul Chapple	Western, 12
009217	Ian Newcombe	Western, 12
022350	James Nicholls	Western, 12

We would like to congratulate the following Members who successfully attended their Registered Principal Designer non-HRBs qualification:

020514	Dan Clements	Northern, 01
024189	Philip Grover	Central, 08
012476	Peter Schofield	South East, 10

In memoriam

We regret to announce the death of the following members and affiliates:

006023	Keith Dawes	Wessex, 06
004988	Derek King	Central, 08
002255	George McClune	Northern Ireland, 15

Obituary
James ‘Hamish’ Harpole Dempsey (23/07/1932 – 19/04/2024)

On a warm Sunday morning, working on my allotment, I was saddened to learn that a former active Member, Hamish Dempsey, had died. Hamish, like many of his generation in Architectural Technology, led the change from the front and challenged the status quo. In the early days of SAAT, he was actively involved in his Region, and nationally on the Education Committee, and he inspired me when I was a student member to get involved.

Apart from his educational focus, he served on the Scottish Building Standards Advisory Committee (BSAC) that reviewed and set regulation standards, an important position for SAAT that helped improve our status. He was never one to hold onto positions and he encouraged me to take up his position on the Education Committee and take up his seat on BSAC.

His inspiration, mentorship and support helped me in many ways and probably was one of the reasons why I developed a significant part of my career in education. Hamish was like the warm Sunday on my allotment. He was kind, warm, generous and supportive and I would like to thank him personally, and on behalf of our Institute, for his considerable contribution and dedication to the profession and discipline. His deeds and efforts helped the metamorphoses of SAAT into CIAT and what our Chartered Institute is today.

Professor Sam Allwinkle PPBIAT FCIAT

My first encounter with Hamish, back in the late 1970s, was at my Professional Interview to join as a Full Member. His line of questioning was challenging but fair. My second encounter was at Regional meetings where, for new members, he in particular was very welcoming. He was incredibly astute at motivating and encouraging me to become involved with the Regional and national activities and I’m sure it was him that encouraged me to attend my first AGM.

From there on in, Hamish continued the encouragement to participate, and I think it was Hamish’s nomination that got me onto SAAT’s Technical Committee. I owe a great debt of gratitude to Hamish, for those days of encouragement that spurred me on to greater things. Sadly, I attended Hamish’s funeral on Thursday 16 May but listened to the marvellous family stories of his warmth and encouragement he conveyed to all his family. That was the mark of the man.

Gary Mees PPCIAT MCIAT

CIAT and CICES formalise Collaborative Arrangement

CIAT and the Chartered Institution of Civil Engineering Surveyors (CICES) formally entered into a five-year Collaborative Agreement on 24 April 2024, with the aim of co-operating further on matters in common relating to Architectural Technology and Civil Engineering Surveying.

The purpose of this formal arrangement is to extend dialogue between the two organisations, encouraging them and their respective memberships to collaborate on areas of mutual interest and benefit. This includes professional development, conferences, education, member services and professional services, thereby widening the range of amenities the two organisations can offer. The organisations will also promote each other, work together on initiatives, share information and support and assist each other with lobbying and joint action.

CIAT Chief Executive, Tara Page, said “This is a wonderful opportunity for CIAT and its members and affiliates. I’m thrilled to formalise and strengthen our relationship with CICES. There are several areas of common interest between our memberships, and I look forward to seeing what exciting results our collaboration will generate.”

The bodies have agreed to an annual review of the relationship and its resulting activities, with an option to continue the arrangement beyond its initial term. It is a non-legally binding Collaborate Arrangement and not the creation of a partnership, joint venture or agency. ■

Exclusive Insurance Scheme For Chartered Architectural Technologists

CIAT
INSURANCE SERVICES

MFL have been providing bespoke insurance solutions for Members of CIAT for over 25 years.

Key Benefits:

- Competitive premiums
- Enhanced cover
- In- house claims service
- Free contract vetting service
- Free legal helpline

"We offer a suite of insurance products, claims and risk management services, including a bespoke Professional Indemnity Insurance scheme, as an exclusive membership benefit to Members of CIAT."

Who are CIAT Insurance Services?

MFL Insurance Group Limited and the Chartered Insitute of Architectural Technologists have worked together for over 25 years providing Members with bespoke insurance solutions specific to the work their members carry out.

What types of policies and services can you assist with?

We offer a suite of insurance products, claims and risk management services, including a bespoke Professional Indemnity Insurance scheme, as an exclusive membership benefit to Chartered Architectural Technologists.

What differentiates CIAT Insurance Services from other insurance brokers or insurers?

We are a trusted partner who understands your profession. We assist CIAT Members on a daily basis, which enables us to maintain a comprehensive understanding of your profession and its unique requirements. Assisting CIAT Members provides us with a wider view of the risks, challenges, trends and new developments that may impact you and your business. Our experienced insurance advisors are on hand to assist you.

Do you assist Members of CIAT with claims?

Yes, we are particularly proud of our in-house claims service. Our experienced team, many of whom have a legal background, are on hand to support and advise you throughout the claims process. We regularly receive referrals from clients who have had a claim and have appreciated the high standard of service provided by our claims team.

Are off-the-shelf insurance policies suitable for Members of CIAT?

Off-the-shelf insurance policies may not accommodate some of the unique risks and challenges faced by CIAT members. CIAT facility policies are developed exclusively for CIAT Members, with tailored coverage underwritten by Insurers on our behalf.

It's also important that CIAT Members receive suitable advice when purchasing their insurance policies. We often work with new clients who have inadvertently purchased policies with onerous terms and conditions that does not meet their requirements, or excludes retroactive coverage despite maintaining consecutive policies for a number of years. These errors can be costly for a Member in the event of a claim, so it's important that the right advice is provided from an experienced and trusted advisor.

We regularly test and benchmark premiums and cover alternatives to ensure that we consistently provide quality insurance coverage for a competitive premium.

What other benefits and services do you offer to Members of CIAT?

We offer a free contract vetting service where we can review your contracts in relation to whether they impose obligations which may not be covered by your professional indemnity insurance.

In addition we offer a free legal helpline provided via a high profile law firm for one-off queries relating to the conduct of your business.

www.ciat-insurance.co.uk **0161 233 4497**

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