SPECIAL EDITION

Architectural Technology Journal

AWARDS

2022

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SCAN ME

Thank you to all our entrants and congratulations to all our Finalists

AT Awards 2023 open on 6 February 2023

Save the date:
20 October 2023

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Editor's welcome

Here we are once again as we have just gathered together for the AT Awards event held at the Village Underground in London.

The AT Awards are a superb celebration of our fantastic discipline – once more we have seen the remarkable skillsets of our graduates and the work that is being carried in practice. A large crowd were able to come together for the event on 21 October, ably presented by our MC, Matt Allwright. Combined with high production values from Voytek, our production company, we can certainly say that it was a successful event and we now look forward to the AT Awards 2023. This special edition of the Journal showcases all the Finalists for the AT Awards and you can discover further about their projects and reports.

The AT Awards 2023 open in February so please do consider submitting an entry or nominating a fellow member or affiliate – these are the pinnacle Awards for Architectural Technology so please do take advantage and gain recognition for your work.

I was pleased to receive the following email from James Roberts MBE MCIAT:

"Have really enjoyed reading the latest *AT Journal*, I do have a couple of concerns though, two articles in-particular; 'Fabric first paves the way to net zero' and 'Project 80 homes for the future' in particular. 'Fabric First paves the way to net zero', doesn't actually talk about the embodied carbon at all and just refers to end operational values. While the end performance of a building is absolutely vital to bringing down our populations carbon emissions, why doesn't the article touch on the embodied carbon within the materials used? The built environment, of which the construction sector is a crucial component, currently contributes some 40% of the UK's carbon emissions. Likewise the 'Project 80 homes for the future article' focuses on a number of construction methodologies that involve high embodied carbon materials. I might be slightly biased by where I work, but logically the only way that the UK construction industry is going to reduce carbon emissions during construction is by embracing more timber construction. Additionally, I don't think that the new Part L Regulations have gone far enough in terms of air tightness. There is no point having an extremely thermally efficient building envelope if airtightness is not also brought into line."

I shared this with the author Tony Hopkin who responded:

"Project 80 is a research and development programme which aims to model different approaches to the FHS between now and 2025. As part of the project we are working with Birmingham City University (BCU) to understand multiple aspects of the project, including embodied carbon (which needs much wider consideration than just the construction industry, with it spanning so many different sectors) – however, it is worth noting that embodied carbon does not form part of the FHS at this stage. The first two projects outlined in AT Journal utilised traditional construction methods as these are the prevailing techniques in the UK housebuilding industry. As part of the wider project, we are exploring different building fabric options and construction techniques, and timber-based options will form part of that – indeed, approximately 30% of our current build programme comprises of timber frame. With regards to the differences in embodied carbon between timber frame and masonry, the XCO2 report commissioned by Xtratherm highlights that the difference in embodied carbon between a timber framed dwelling and a masonry one is less than 3%. It is also worth noting that the concrete blocks used on the first two phases of Project 80 were the Besblock Star Performer (a block from a company who utilise a biomass boiler, have reduced material use, water use, cement content etc. in their product); and, the aircrete blocks from H+H (which comprise up to 80% recycled materials, including Pulverised Fuel Ash which would otherwise be sent to landfill).

Finally, regarding airtightness we modelled levels of 5 and 1.5, because from a design perspective we can make different airtightness work, but we often forget one key piece of the puzzle, the end user! We need to ensure that what we design (and build) creates a healthy (and usable) environment for the occupants, which is why we are monitoring indoor air quality."

Bye just now

Adam Endacott
Editor

Honorary Fellows

Honorary Fellow, HonFCIAT, is awarded by the Institute to a distinguished individual in recognition of their contribution to the discipline and profession. It is the highest accolade that the Institute can bestow on non-members in recognition of their support to the discipline and profession. The Institute is delighted to announce the inaugural recipients:

Francesca Berriman MBE HonDTech for:

- eminence working in fields related to Architectural Technology, and work which has had a positive impact on Architectural Technology;
- significant contribution to Architectural Technology; and
- significant and continued association with Architectural Technology.

Nominated by Adam Endacott, Creative & Communications Director:

"Francesca is one of that handful of figures who have changed the course of Architectural Technology history through the sheer force of their talent and determination. She has revolutionised the discipline and successfully built upon its foundations and turned it into the respected and leading profession in the sector that it is today. The Honorary Fellow is given to an individual who has, in a fundamental way, advanced Architectural Technology. For that reason, I nominate Francesca Berriman and her incalculable contribution to the discipline."

Professor Jaffer A.A Khan for:

- significant contribution to Architectural Technology; and
- significant and continued association with Architectural Technology.

Nominated by Tara Page, Education & International Director:

"Jaffer is passionate about the technology of architecture, and he has an impressive gift of being able to enthuse and influence others too, from students to senior decision makers. As an Honorary Fellow of the Institute, his advocacy for the discipline, profession and Institute will continue, and with his support, interest in AT in India and further afield will grow."

Professor Sean Smith BSc PhD for:

- eminence working in fields related to Architectural Technology, and work which has had a positive impact on Architectural Technology;
- significant contribution to Architectural Technology; and
- significant and continued association with Architectural Technology.

Nominated by Professor Sam Allwinkle PPBIAT FCIAT

"Sean is a major influencer within academia, government, industry and professional institutes and supports and promotes Architectural Technology, Chartered Architectural Technologists and CIAT and is an important and significant advocate for the Institute and the profession. He is a leading voice and is well placed to ensure that CIAT gains and maintains recognition at the highest level."

The full citations will be published in the winter edition of ATJ

Winner
2022

EMERGING TALENT IN THE
TECHNOLOGY OF ARCHITECTURE

Sam Lambert ACIAT

Words by Peter Stead MCIAT, Chartered Architectural Technologist

The second recipient for excellence in the technology of architecture for those in the early stages of their career in Architectural Technology.

The Award recognises Associate members and Chartered Architectural Technologists with a professional career path of ten years or less.

Sam's development and contribution as an Architectural Technologist is firmly bolstered by his ambitious and determined professional mindset. It is this mindset that sets Sam apart as an emerging young professional at P+HS Architects which has been demonstrated by his achievements and willingness to work individually, or collaboratively as part of a team, to yield the highest possible outcomes with the task in hand.

Sam joined P+HS in May 2019 as an apprentice and it was clear from the start that he had the desire and ambition to succeed, albeit with a poles apart background in farming and no knowledge or experience in architecture and construction! The fact that Sam showed so much interest and enthusiasm towards all aspects of Architectural Technology, as well as the willingness to learn, made it clear that he had great potential as an Architectural Technologist. Sam hit the ground running in his first few months of employment, building professional relationships between colleagues whilst also assisting his mentor, gaining project related experiences and knowledge which he could then implement into his university studies.

In his first year of studying, Sam achieved top mark distinctions in all four modules which was an early indication of how well this young emerging talent was doing. Part of this success was due to Sam's ability to learn whilst working on projects and incorporating his knowledge into his assignments. Sam was based in one of our residential teams, assisting with stage four drawing packages for two large residential projects. It was clear that Sam was a fast learner as he started to draft his own working drawing packages for both projects. The fact that Sam learnt quickly, meant that he could be trusted to assist on a greater range of projects.

By the end of his first year's study, Sam was successfully working within our residential team, so it was time to further develop his experience. Sam moved to one of our healthcare teams working on multi-million-pound projects that were delivered in Revit. Understanding the complexities of healthcare projects was one thing but combined with learning Revit from scratch and studying at university at the same time was a real test. It seemed overwhelming at first, but I knew that Sam had the ability to learn and embrace new challenges, and with support, it was the right time for him to step up.

The COVID-19 Pandemic presented a lot of new challenges for our profession and, in particular, younger members of the team. Like all staff, Sam had to embrace working from home remotely, physically separated from the 1 to 1 mentoring that he was comfortably used to. This meant that Sam was isolated whilst assisting on projects and working on his university assignments, testing him to see how well he could adapt to working independently. It was little surprise that Sam's determined attitude meant that he embraced the unique situation like any professional Architectural Technologist should and he did an excellent job assisting on projects and remaining enthusiastic throughout the pandemic, regularly dialling into meetings to see how the team, and its projects, were doing and taking part in online social events boosting team morale in the dark and dull days of lockdown.

Sam's graduation two and half years after joining PHS was a real testimony to how far he had excelled and emerged as a young Technologist, to say that he came to PHS with no experience, to then take on the monumental task of understanding both residential and healthcare projects, also learning AutoCAD and Revit, whilst studying and achieving top marks in his HNC studies all through the stresses and isolation of a global pandemic was a clear representation of Sam's commitment and character as a young professional.

Soon after qualifying, Sam began to take on more senior roles and responsibilities due to his rapid development up to this point. Sam was responsible for producing 1:5 construction detail packages for several jobs. At first, Sam found it tricky to understand the concept of detailing, however he slowly started to develop his knowledge on how build-ups worked. One notable project where Sam faced his most technical challenge was developing bespoke fire stopping details for a £9.6m healthcare project, The unique construction of the building meant that there were no certified standard details, so Sam was tasked with producing multiple fire stopping details to be proposed to the project's Fire Officer, who Sam then collaborated with to design bespoke fire stopping details for the full project. Sam's proactive

mindset meant that contractors could approach him for a solution to a problem and Sam's reaction would be to propose a bespoke detail to overcome such challenge.

Aspiring to become a Chartered Architectural Technologist, Sam's clear sense of direction and ambition is making this possible. As a junior apprentice, Sam was a student member and soon after qualifying, became an Associate member. Sam is currently in the process of submitting his professional assessment bringing him one step closer to becoming a Chartered Architectural Technologist.

Not only has Sam demonstrated a clear commitment to his chosen career path and profession but he has a vision for his future within Architectural Technology. Sam perceives the future of Architectural Technology to be heavily dependent on Building Information Modelling (BIM). He aspires to becoming a leading figure at P+HS in the understanding and development of BIM software.

Sam has definitely had an impact: encouraged by his success, P+HS has appointed three more junior assistants who are embarking on their apprenticeship studies as Architectural Technologists in the same way as Sam, bolstering our intake of young assistants. It is worth noting that Sam has become a role model to new starters at the company with young apprentices regularly seeking his advice. In his role as an ADB champion, Sam can mentor new starters and help them to understand BIM which as Sam perceives, is a vital concept in the future of Architectural Technology. Sam shows clear enthusiasm in inspiring the younger assistants and is currently helping them to apply for student membership; it would be true to say that he has become quite an ambassador for CIAT!

Sam does not just encourage new starters at P+HS, he is also passionate about inspiring the younger generation to consider a career in Architectural Technology and volunteers to attend school events to promote the profession to students.

Although Sam's experience may be shorter than many, I think what he has already accomplished in the first 40 months as a now qualified Architectural Technologist is outstanding. Sam is a real asset to P+HS Architects, not only playing an active and valuable role within project delivery, but also in being at the forefront of BIM development and a role model to the younger members of staff.

AWARDS

EMERGING TALENT IN THE
TECHNOLOGY OF ARCHITECTURE 2022

Meet the Judges

Chair:
Gary Mees PPCIAT MCIAT

Gary has 49 years working in the industry and has been running his own practice for 19 years, a Past President of CIAT and now holds the position of the Construction Industry Council's Health and Safety Champion along with this, Chairing Keeping Pace With Change Working Group which is a Construction Industry Advisory Committee (CONIAC) initiative.

His contributions externally have included a presentation at the Association for Project Safety 2013 Convention, in Belfast, on the potential implications of the CDM Regulations on designers and as part of a Panel for The Build Show held in October 2015. He has been a judge on the APS Student Award Scheme and an External Examiner for Robert Gordon University.

Paula Bleanch MCIAT

Paula studied Architecture and Construction Project Management and her main field of expertise is in design management. Much of her work in industry concerned the design and build of large PFI (private finance initiative) projects, including award winning schools, offices, hospitals and library buildings. In 2008 Paula left industry to join the teaching team at Northumbria University where she was final year tutor. She is now based in Denmark.

She has previously undertaken mentoring training as part of a scheme set up by the National Association of Women in Construction and has particular experience working as a female in the built environment sector.

Bharat Gohil MCIAT

Bharat is both a Chartered Architectural Technologist and Chartered Construction Manager. With over ten years in design and construction, Bharat specialises in offsite superstructure design and manufacture for construction. His solid technical background has assisted his development in the built environment, leading him to consulting designers and engineers in best practice for offsite design.

Bharat has leveraged his industry experience and technical knowledge to focus on digital construction. As part of his role as a Technical Specialist at Autodesk, he is driving change with sustainability whilst ensuring construction projects meet and exceed industry standards and expectations.

Alex Naraian PPCIAT MCIAT

Alex is Group Head of Technical for Churchill Retirement Living. He possesses a broad knowledge of traditional and classical architecture. His career has seen him deliver many projects for new build, refurbishment, conservation, retail, institutional, educational, leisure and commercial buildings.

He studied at Southampton Institute of Higher Education and started his career in the late 1980s and was privileged to be awarded an Honorary Fellowship of Solent University in 2016.

Alex has sat on various Accreditation Panels for universities offering Honours Degree programmes in Architectural Technology.

As a public figure, he has been a judge for the Building Innovation Awards, the WICE Awards, Association of Project Safety Awards and the LABC Awards. Alex speaks publicly on a variety of industry related subjects at universities, exhibitions and events, in the UK, the Middle East, Europe and Asia. As an author, his articles continue to be published in various industry publications.

Chris Yorke MCIAT

Chris is a Chartered Architectural Technologist and Chartered Building Engineer who runs a small practise (currently five staff) in Worksop, Nottinghamshire. Having started out as a trainee quantity surveyor, Chris made the move into architectural practice in 1988, initially working on large scale housing rehabilitation projects and later widening his experience to schools, sports pavilions, children's care facilities and heritage projects. Working up through the ranks, he ran countless successful projects from inception to completion and was a team leader (Principal AT) before leaving in 2006 to start his own practise. He has also worked as a client-side advisor and facilitator on larger housing regeneration projects involving affordable housing and mixed development, which included working alongside senior representatives of the Commission for Architecture and the Built Environment.

CIAT

Certificates of Accreditation and Approval 2022

CIAT is delighted to report on this year's successfully Accredited and Approved programmes.

Accreditation and Approval of academic programmes, as well as Centre of Excellence status, enable the Institute to recognise our important partnerships with educational establishments, and support the development of AT as an academic discipline. All education establishments who offer Approved or Accredited programmes are essential in delivering the fundamental underpinning knowledge which provides a foundation for the AT professionals of the future.

Certificates for Honours degree level Accreditation

Accreditation at Honours degree level is a demonstration of an education establishment's commitment to delivering learning of a high standard by preparing talented individuals to enter the growing Architectural Technology community. The following educational establishments have attained programme Accreditation for the first time:

- De Montfort University
  BSc (Hons) Architectural Technology
- University of East London
  BSc(Hons) Architectural Design Technology

The following educational establishments have attained programme re-Accreditation:

- Leeds Beckett University
  BSc (Hons) Architectural Technology
- Robert Gordon University
  BSc (Hons) Architectural Technology
- Sheffield Hallam University
  BSc (Hons) Architectural Technology
- University of West London
  BSc (Hons) Architectural Design and Technology
- Wrexham Glyndwr University
  BSc (Hons) Architectural Design Technology

Certificate for Masters Accreditation

Accreditation for Masters level degree programmes is a demonstration of an educational establishment's commitment to delivering the highest standards of postgraduate progression and specialism within the profession. The following educational establishments have attained Accreditation for their Masters level degree programmes:

- Leeds Beckett University
  MSc Architectural Technology and Design
- Robert Gordon University
  MSc Advanced Architectural Design

Certificates for Approval

Approval demonstrates that programmes have been assessed in terms of content, structure and resources. The following educational establishment has attained Approval:

- University of West London
  Foundation Degree in Architectural Design Technology

Centre of Excellence

Centre of Excellence status is awarded to an educational establishment that demonstrates the highest commitment to the academic discipline of Architectural Technology and the professional development of Chartered Architectural Technologists. Robert Gordon University has received this recognition as a CIAT Centre of Excellence for a further five years.

Xtratherm is Changing

As one of Europe's largest PIR manufacturers and a global supplier of building products to the construction industry, we are proud to be renaming as Unilin Insulation.

Xtratherm
UNILIN
INSULATION

Over the past 20 years, we have worked directly with CIAT to understand and support Architectural Technologists throughout their Regions and Centres.

Now, as we rebrand to Unilin Insulation in the UK and Ireland, our engagement at grassroots level with CIAT aspirATion Groups will continue to encourage young talent and the promotion of sustainable design practices and environmentally sound material choices.

We know that younger members and in particular, the aspirATion Group, will be the driving force for change within our industry. More than ever, Architectural Technologists are the lynchpin between materials manufacturers and sites in correctly accounting for operational energy and embodied carbon. The Climate Emergency necessitates an accelerated drive for reducing our own impact and the impact of the projects we work on.

In 2019, we formalised our response to this crisis with a more substantial, target driven sustainability strategy – encompassing our business, customers, communities, and families.

As part of the Unilin Group, we are able to deliver more by combining our efforts to reduce environmental impact under the ONEHOME strategy. It's inherent upon us to make better decisions now for the benefit of future generations. The built environment sector must do its part to meet energy targets and ensure that new and retrofit buildings deliver net zero whole life carbon in advance of incoming regulation.

We remain fully committed to these goals and will work with architectural technologists to improve our built environment as a matter of urgency. For us, that means deeper engagement with those designing now and in the future. Our regional Specification and Technical Teams will continue to work on the ground to develop learning and understanding of the key issues around ensuring sustainability on projects. This is backed by our commitment to continuous learning both in person and through our Learning Centres, CPD delivery and online learning.

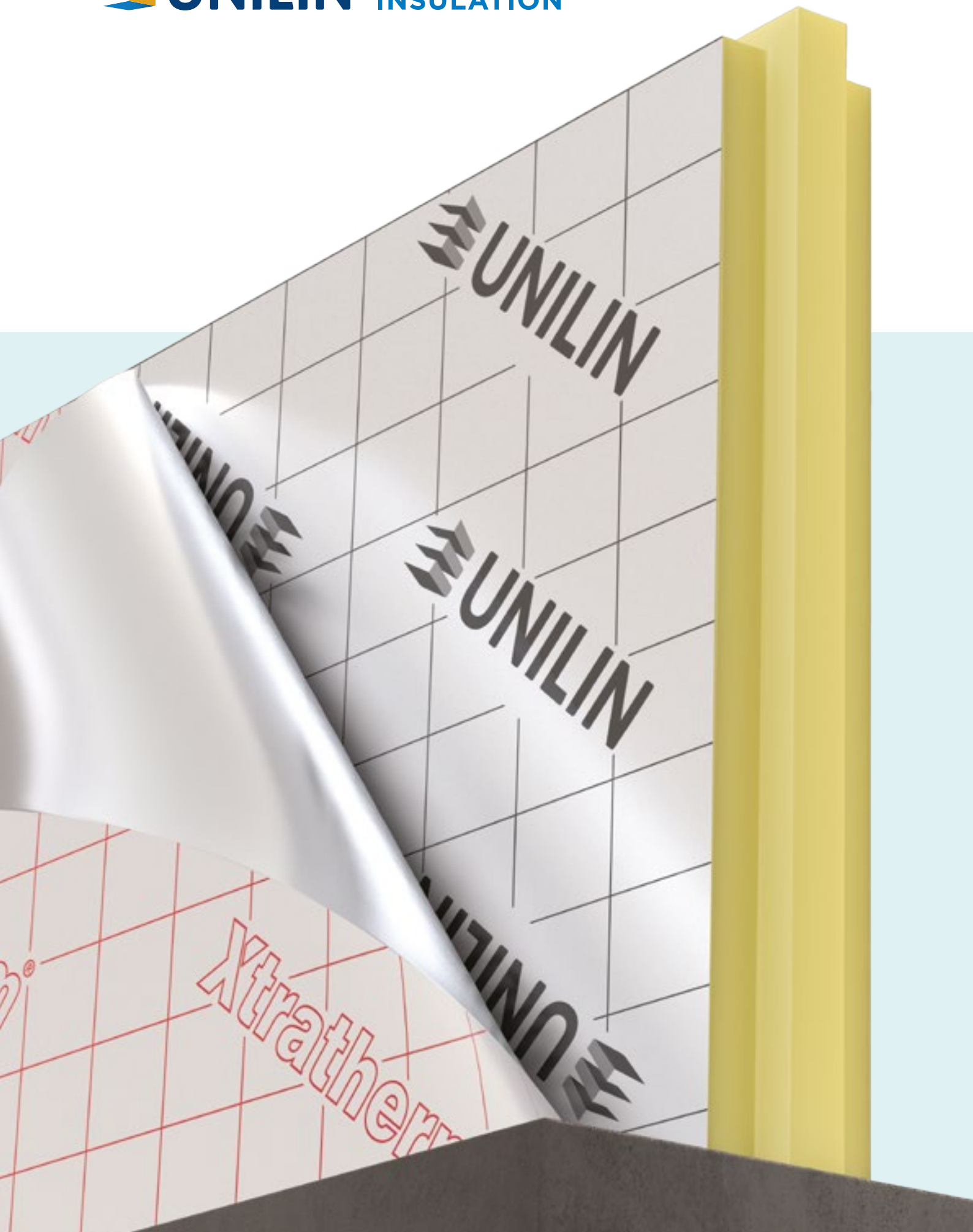
Our aim is to encourage the learning necessary to make our buildings more sustainable. Sometimes this is the development of learning content to expand understanding of industry issues. Often this means providing support and guidance to young technologists as they expand and develop their skillset and knowledge base.

For more information on how we can support you in delivering more sustainable outcomes, please call us on **01 371 222 1055**.

ONEHOME

unilininsulation.co.uk

UNILIN INSULATION



Commended 2022

STUDENT AWARD FOR EXCELLENCE
IN ARCHITECTURAL TECHNOLOGY | REPORT

Recognising outstanding research achievement in Architectural Technology – a dissertation or research assignment

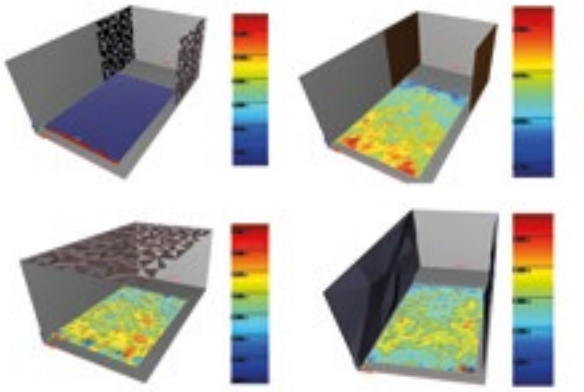
Determining Optimal Diffuser Geometry and Application Strategies to Enhance Acoustic Performance Within a Concert Hall

Words by Sarah Ball, Nottingham Trent University

Ensuring good acoustics within a concert hall is vital to not only ensure the audience can hear the performances clearly and comfortably from anywhere within the auditorium but also to create an optimal environment for the performers on stage. Since concert halls are large open spaces, they present opportunities for sound abrasions and acoustic glare. Uncomfortable acoustic environments have been shown to not only cause discomfort to occupants but can reduce people's ability to perform.

Acoustic diffusers can be utilised within a concert hall environment to combat these issues and increase how far sound travels within a space, with the diffusers' geometry and position directly influencing the reverberation time (RT) within it, impacting both the sound quality of music and speech intelligibility. Since the optimal RT within a concert hall for drama performances is considered to be two seconds, different combinations of diffuser types and positions will be explored to achieve a harmonious two second RT throughout the seating area. To attain this, a mixed method methodology approach has been adopted, with three stages of implementation. A mixed method methodology has been utilised as it considers the benefits of both qualitative and quantitative research and compares the data between the two, resulting in a more comprehensive understanding and dependable results.

Phase one uses a qualitative approach by conducting a critical literature review to identify the most effective diffuser geometric parameters and positions to increase speech intelligibility within a concert hall. It Identified the most appropriate diffuser types as quasi-periodic, Penrose-tiling-type and omnidirectional wall and ceiling diffusers, with the most effective placements being along the whole of the lateral walls, along the lateral walls closest to the stage and along the ceiling. Phase two employs a quantitative approach utilising 3D modelling to develop several layout designs incorporating the identified diffuser types and positions. When modelling the geometry of a space for importation within I-SIMPA, the software used for phase three, if the model is too coarse, then the results may be unreliable, but if the geometry is too detailed, certain modelling techniques may experience errors. The most effective acoustic simulation results are usually achieved with simplified geometric models. As a result, phase two utilises Google SketchUp to model the diffusers and re-model the concert hall as opposed to exporting it directly from Revit, as it allows for much more simplified geometry. Ten different scenarios were modelled, with the three diffuser types each within the three different locations identified within the literature review. Additionally, one of the scenarios consists of an empty version of the auditorium to compare and determine how each variation influences the reverberation time of the space. Phase three uses simulation-based software to assess the acoustic quality of each scenario, determining the most effective one. Within I-SIMPA, a sound source was placed



at the height of an average person standing on top of where the stage would be. The source was set to 70db as an appropriate level to represent an actor projecting their voice on stage. A plane receiver was positioned and angled to align with the inclined seating for the audience, to get a fair representation of not only how the different scenarios influence RT but also how it fluctuates throughout the seating. Within the simulations the shape of the auditorium, the absorption values, the sound source level and its position remained as a controlled variable throughout each scenario. The RT (seconds) and therefore speech intelligibility are the dependent variables that change as a result of the independent variables of the diffuser geometry and diffuser location.

The results for the Penrose-tiling-type diffusers positioned on the lateral walls closest to the stage produced a RT time of one second throughout the concert hall. Although the optimal RT for a concert hall environment is considered to be two seconds, when the same environment is simulated focusing on the 2000khz frequency range, since this is the frequency band considered most important regarding perceived speech intelligibility, a harmonious RT of 2s is produced throughout almost the whole of the seating area. When analysing the results and findings from the simulations, although the RT produced within each scenario varied depending on the diffuser type used, how it fluctuates throughout the seating area is seen to be heavily influenced by the diffusers position. The placement of diffusers on the ceiling often resulted in suitable RTs with all diffuser types achieving between 1-2 seconds. However, this placement caused inconstant and scattered fluctuations. These fluctuations can also be seen within the scenarios where the diffusers have been positioned along the whole sides of the lateral walls. On the other hand, diffuser placement along the lateral walls closest to the stage within the quasi-periodic and omnidirectional diffuser types resulted in a steady increase in RT towards the back of the auditorium. This is due to the diffusers tackling reflection at the front of the stage with the opposite lateral walls causing redirection of the second reflections at the rear of the hall. Whereas when the diffusers have been installed along the whole of the ceiling or the whole of the side walls, the sound waves are scatted inconsistently throughout the space, creating echoes and an uncomfortable acoustic environment. The results conclude that the Penrose-tiling-type diffuser positioned on the lateral walls closest to the stage produces the most effective environment for increasing speech intelligibility within a concert hall. The results from this research also support the expected results from within the critical literature review as the Penrose-tiling-type diffusers were expected to be the most effective as they produce the highest scattering coefficient values within the frequency band considered most important regarding perceived speech intelligibility. Additionally, unlike omnidirectional diffusers, they do not repeat the same formation allowing for a greater dispersion of sound throughout a space.

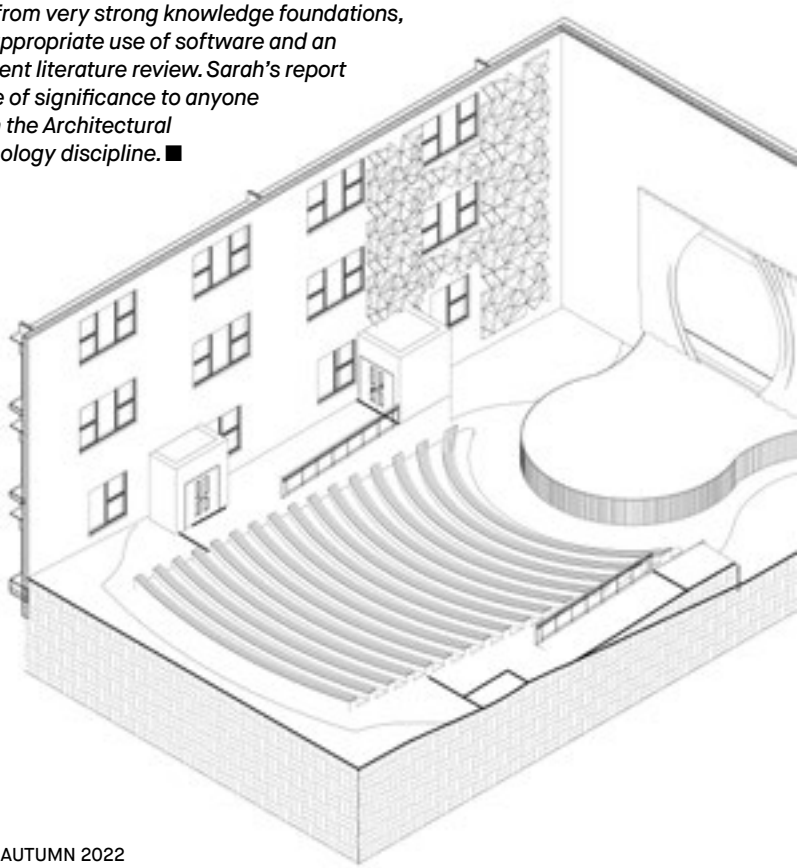
It is important to note that a limitation of this research is that the simulations use a standard size for each diffuser panel and it has not been considered how varying panel sizes will influence the results. Therefore, future research needs to be conducted which looks more in-depth at the implication different size diffusers will have on the RT within the space. Another major limitation of this research is that I-SIMPA, the software used to conduct the simulation-based research, heavily restricts the complexity of the models imported and can be unreliable at lower frequencies. Future use of software that relies on a numerical method of solving the wave equation as opposed to I-SIMPA which relies on the assumptions of geometrical acoustics will allow for the simulation of more complex models and provide more accurate results. For feasibility purposes, this research project excludes materiality due to time constraints.

Judges' comments

Sarah's report explores the implementation of varied diffuser types and application strategies to create an optimal reverberation time of two seconds within a concert hall. The thorough introduction to this issue highlights the importance of this study as not just to achieve good acoustic conditions, but the impact of poor conditions on the health of both concert hall users and musicians.

Throughout, it is evident that the amount of research and reading contributing to this work was substantial. Sarah conveys a deep knowledge and passion for the subject area and a determination to fully explore and come to useful conclusions. The 3D modelling approach reflected Sarah's focused approach to her work in that it removed unnecessary information in her drive to make best use of her resources in achieving best possible results.

It was agreed that the research discussion was built from very strong knowledge foundations, with appropriate use of software and an excellent literature review. Sarah's report will be of significance to anyone within the Architectural Technology discipline. ■



Highly Commended 2022

STUDENT AWARD FOR EXCELLENCE
IN ARCHITECTURAL TECHNOLOGY | REPORT

Noise Reduction and Soundscape Design in Urban Green Spaces (UGS)

Words by Ebony Napier, Nottingham Trent University

Aim: To reduce external noise pollution generated from the surrounding roads and railway to create an engaging experience for the occupants in urban green spaces.

Objectives:

1. To investigate the noise levels surrounding the author's site and examine the effectiveness of different external barriers strategies.
2. To determine potential noise reduction methods based on the above and develop different combinations of noise reduction methods for the MSP's UGS.
3. To evaluate the effectiveness of the developed acoustic solutions in the context of the MSP

Abstract

Growth in people living in urban landscapes incites the increase in hard landscaping creeping into their grey belts. As such, for cities to cater to their population's need for physical, mental, and social relief in outdoor public spaces. One method of doing this is the implementation of Urban Green Spaces (UGS).

UGS are threatened against their community engagement by a common consequence of bustling cities – noise pollution. Noise pollution is commonly combated in the design of new-build developments and renovation of building architecture, yet actively reducing noise pollution for outdoor spaces is a common after-thought. The consequences of consistent exposure to excessive noise pollutants such as traffic, crowds and transport systems can lead to negative mental effects such as personal depression or negative social outcomes such as an increase in anti-social behaviour and crime.

Through the use of a mixed-method methodology, the author researched the most effective types of noise-reducing barriers to mitigate the volume of noise pollutants perceived within a UGS. The measured variables of the barrier were determined in phase one of the research proposal – the Literature Review. The parameters were then simulated virtually using the author's Major Studio Project (MSP) location and therefore incorporate the location's terrain and surrounding context. The noise source against which the barriers were defending against, is a highly active train line, bordering the site's southern edge.

The implementation of the optimised combined barrier system reduces the decibel level recorder at the site centre 60m from the noise transmitter, by approximately 20%. To further develop this research, exploring how the introduction of wanted sounds such as water sources of wildlife could affect the acoustic comfort of the UGS in conjunction with the reduction of noise pollutants.

Background

The average British road can get as loud as 62dB. Most UK counties consider 65dB to be a cause to implement manufactured noise barriers to protect largely residential areas (Kotzen and English, 2014). In conjunction with roads and motorways, railways within the UK can reach levels as high as 87dB on average (Volpicelli, 2019) and are often defended against with the use of natural sound barriers. The rise in noise pollution has resulted in anti-

social behaviour rising 24% since 2019 (CrimeRate, 2021) and mental health reports up by 21% since 2019 (Baker, 2021).

The author's MSP, to which this research shall be applied, is located in the centre of a well- developed city and is adjacent to a heavily active railway and within proximity to two A- roads. Before the author's development proposal, the site was derelict and abandoned, housing a storage warehouse, since the late Victorian era and thus does not include any modern provisions of noise mitigation required by today's standards within the UK. However, with the author's introduction of a UGS, gallery and exhibition centre on the site, minimising noise pollution received from the track is of high priority.

Reducing noise pollution here should create a comfortable UGS generating higher community engagement and use of outdoor facilities. Within cities and urban areas, the inclusion of green spaces is a must to help fight pollution, control temperature and humidity, encourage biodiversity and provide homes for dislodged wildlife (Peschardt, Schipperijn and Stigsdotter, 2012). With the rise in urbanisation well designed UGSs are key in ensuring the physical, mental, and environmental health of modern cities.

Conclusion

The results achieved from the simulation method concur with those discussed within phase one of the research project. However, the previously stated alternative hypothesis has been proven incorrect through the simulation process discussed in phase two as it was proven that standalone noise barriers perform approximately 38% worse than a combined barrier system. The aforementioned system comprised of:

The best performing 3m barrier: Timber fencing
The best performing 5m barrier: Gabion wall
The best performing vegetation zone: 5m thick zone

Simulated within the best performing Division zone: D1 – 10m from the noise source-will be applied to the author's MSP to improve the acoustic comfort within the proposal's UGS. Implementing this noise barrier system can reduce noise perceived from the trainline to the site by 19% taking the noise perceived at the centre of the site without a barrier, 64.2dB down to 52dB.

Reflection on the research project reveals areas where the research could be improved. One way would be to test

how the barriers tackle noise in different wind conditions or perhaps increasing the variety of materials tested. Most interestingly, as explored within the literature how different arrangements within a gabion wall could affect how well it reflects noise (Koussa et al., 2013). This could be achieved by aligning three barrier types parallel to oner another each using different stone or concrete reflective indices. Future research should also consider how the shape, finish and façade of a barrier can also affect the reflection of noise reduction so the optimisation of a standalone barrier and thus a barrier system can be taken one step further.

Judges' comments

This is a methodical and well-articulated Report by Ebony on the most effective types of noise reducing barriers to mitigate the volume of noise pollutants perceived within an urban green space. The judges considered this was not only an interesting subject but one that was a highly relevant subject and one that should be of interest to all those within the discipline.

It was clear Ebony had completed a substantial amount of research into the problem and demonstrated a sound knowledge of the problem faced in the UK by the growing amount of noise pollution created by everyday life and how studies are increasingly highlighting the detrimental impact this is having on all of us. The work follows a systematic approach and natural flow from its introduction through to its clear analysis and inciteful conclusions. ■

The judges considered this was should be of interest to all those within the discipline

Winner 2022

STUDENT AWARD FOR EXCELLENCE
IN ARCHITECTURAL TECHNOLOGY | REPORT

The Potential for Digital Construction Technologies to Advance Fire Evacuation Procedures

Words by Eilis O'Hare, Ulster University

In recent years digital construction processes and emerging technologies have had a huge impact on the construction sector, advancing the design, construction, operation and maintenance of buildings. As an area of potential advancement, it is essential to recognise the extent of the benefits associated with fire evacuation procedures without disregarding traditional approaches which have been drawn upon in studies to date. This study aims to present the concept of linking a QR code to a Building Information Model (BIM) in Autodesk Revit to deliver a 3D instructional escape based on the location of the building occupant.

The concept developed in this study is furthering current studies investigating Bluetooth low energy (BLE) sensors and real time location systems (RTLS) by proposing a solution to overcome ambiguity that can be attached to unfamiliarity with a building environment. The solution to this has been investigated within this study in the form of an instructional escape video, directing users onto a safe escape route from their origin to reach a fire assembly point. The animated video includes graphics and directional arrows to point the user in the correct direction, critical in assisting individuals who are unfamiliar with a space. The results show the potential for professionals within the architecture, engineering and construction (AEC) industry to incorporate BIM authoring software into the workflow in terms of the use of a Revit model, and how the Enscape plugin allows for a realistic evacuation demonstration to be obtained. Future work in this area may consider formulating a real-time fire evacuation management system that aligns with the 3D animation to allow for the QR code to be updated. To extend the BIM module, further research into how this system may incorporate real-time information and respond to information about smoke detectors to provide alternative escape routes for occupants during a fire.

A fundamental principle in the profession of an Architectural Technologist is to problem solve and advance current practice where opportunities exist. One such area of opportunity is around fire evacuation procedures. Current practice routinely sees manual or automated announcements in a space, with an individual providing visual prompts towards the nearest fire evacuation route based on one's location. There is an opportunity to disrupt traditional fire evacuation procedures in the 21st Century and make use of the new and emerging technologies that are widely available. The overarching aim of this study is to produce an 'accessible for all' concept which can be accessed by scanning a QR code to enhance the existing fire procedures by improving their impact factor especially in unfamiliar settings through animation and colour.

In the last decade, fire safety and Building Information Modelling (BIM) have emerged in the AEC industry, but it could be argued that the potential for BIM and digital technologies in general have not been fully exploited when it comes to advancing existing fire safety related processes which includes fire evacuation procedures. Currently, fire evacuation processes follow a regimented structure by which rapid safety information is verbally directed towards individuals which they are to retain. The issue with this form of direction is that it is adhered to within the first few moments that an individual enters a space when one is not fully attentive, which may leave a significant amount of time between the point in which they first retain the information and the point in which they may need to recite it, i.e. during a fire evacuation, creating a higher possibility of one forgetting the original information. Other fixed forms of fire evacuation procedures include 'five-point fire evacuation notices' found fixed to internal walls beside fire extinguishers or emergency evacuation plans which are often fixed to the back of internal doors. The presentation of this fire evacuation literature may easily go unnoticed, and the overall appeal is lacking in most cases primarily due to the location where it is placed, or the text size used to outline the action required. On review of the existing

implementation of technology and fire management within buildings, it appears to be either very limited or non-existent. A strategy such as that developed within this study, could disrupt traditional workflows by forming new possibilities for fire evacuation procedures using technology to revolutionise building design and life cycle. The escape animation concept accessed through scanning a QR code, is an accessible approach that builds on new and previous studies to compose a modern-day advancement on traditional approaches with the safety of building occupants as a prime focus.

The success of studies to date set a precedent for the QR code and escape animation concept developed in this paper, as it advances the familiarity between individuals and their environment via the use of technology. The study in this paper recognises a potential gap in work relating to health and safety from a fire evacuation perspective and technology application. The findings in this paper demonstrate the potential of incorporating a 3D animation into an existing evacuation plan to enhance the process of communicating building evacuation procedures for building occupants. The safe evacuation video developed as part of this paper can be accessed from occupants' smartphone devices, to provide an enhanced means of evacuation in the fire. The video footage demonstrates how an individual may obtain a safe escape from the setting (board room) using a walkthrough generated in Enscape. The evacuation video shows the potential for professionals within the AEC industry to incorporate BIM authoring software into the workflow in terms of the use of a Revit model, and how the Enscape plugin allows for a realistic evacuation demonstration to be obtained. The possibilities of technology are more pertinent than ever, and it is up to professionals with the AEC industry to utilise available technology for process improvement. To build upon the success of the method developed within this paper, one may consider the idea of continual improvement by formulating a real-time fire evacuation management system that aligns with the 3D animation to allow for the QR code to be updated. To extend the BIM module, further research into how this system may incorporate real-time information and respond to information about smoke detectors could be included in the framework to provide alternative escape routes for occupants during a fire for example if a route has been blocked off or if a route is congested. Further investigations into Big Data may affirm the relationship between human cognitive behaviour and the proposed method to highlight the reality of how effective building occupants (primarily delegated members or visitors to the university) would respond to the animation as opposed to gravitating towards following the crowd. Inclusive design principles are an area for further development which needs to be factored into the proposed concept to make it more universal within the AEC industry, by addressing the needs and behaviours of a variation in building occupants including those who carry disabilities, particularly visually impaired individuals, and wheelchair users.

The novel concept of linking a QR code to a live Building Information Model in Autodesk Revit

Judges' comments

Eilis' report is a study which presents the novel concept of linking a QR code to a live Building Information Model in Autodesk Revit to deliver a 3D instructional escape route based on the location of the building occupant. The judges were impressed by the simplicity of the concept and how it had been applied to one of the fundamental principles of the Chartered Architectural Technologist; the use of the technology of design to produce successful design solutions for the benefit of all building users. It was thought that this was a highly innovative use of everyday technology that could benefit all.

This rich and precise piece of work was thought to be imaginative and finely executed and could be further developed to set a new standard for personalised escape route animation using familiar technology. The Report draws on recent research and is comprehensively referenced with excellent cohesive aims and objectives. The technological framework for utilising BIM models and Bluetooth based real time location systems is demystified and builds on the success of similar studies to suggest that an intelligent BIM system could be the answer to presenting clear and personalised escape routes to building users.

The mix of text, drawings, diagrams and images combine to make it a well written and informative report - this work is a brilliant example of excellence in Architectural Technology and an exemplar for the Student Award Report category. ■

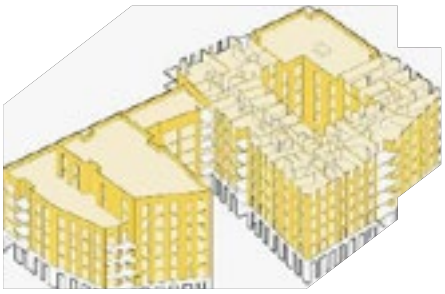
Finalists

STUDENT AWARD FOR EXCELLENCE
IN ARCHITECTURAL TECHNOLOGY | REPORT

The Impact of Timber Species Microstructure Upon Moisture Uptake and Structural Capability

Adam Dhawan,
Coventry University

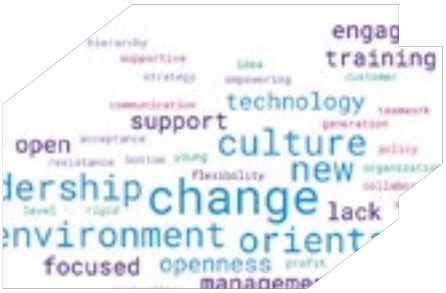
This Report is an investigation into how the microstructure of four different timber species; European Ash *(Fraxinus excelsior)*, Western Red Cedar *(Thuja plicata)*, American Red Oak *(Quercus rubra)* and American White Oak *(Quercus alba)* affects each species moisture uptake and structural capability - in order - to identity suitable species for withstanding extreme weather events. Based on the results of the investigation, the suitability of each species is Red Oak, White Oak, Ash and Red Cedar.



Is Mass Timber the Future of Mid to High-rise Residential Construction in the United Kingdom? A Review of Current Legislation in Designing for Fire

Gus Hodge,
University of Westminster

Gus' Report looked to establish the capacity for the United Kingdom to successfully negate issues of fire safety in the construction of mid to high-rise residential buildings using mass timber materials in the future. This was the result of an extensive programme of research and critical analysis across the 2021-22 academic year, cumulating in a final investigative report.



Organisational Culture Factors Influencing Digital Transformation/ Innovation in the UK Construction Industry

Hadeel Joud,
Leeds Beckett University

This Report is a study which explores factors of organisational culture that impact digital innovation of the construction industry in the UK context, through the analysing of secondary data gathered from a survey questionnaire conducted with participants working in UK-based construction firms. It concluded that there is a proven role of the organisational culture of the organisations and their attitudes toward the adoption of digital technologies.

STUDENT AWARD FOR EXCELLENCE
IN ARCHITECTURAL TECHNOLOGY | REPORT

Meet the Judges

Chair: Paul Laycock FCIAT

As a Chartered Architectural Technologist and Chartered Builder, Paul specialises in excellence in technical design of all types and sizes of buildings with a special interest in sustainable solutions, healthy indoor environments and successful buildings for all users at all stages of a building life cycle.

His involvement with CIAT has spanned many years and many tasks and roles. Previous Vice-President Education, Member Panel Moderator, Professional Interview Assessor and Accreditation Panel Chair amongst those.

As an academic, Paul's main role is in inspiring and shaping the future professionals that will be the next generation of the built environment sector.

Dr Suha Jaradat FCIAT

Dr Suha Jaradat is Associate Professor at the School of Engineering and the Built Environment and Programme Leader for Architectural Technology at Edinburgh Napier University. She leads the strategic development and delivery of a suite of postgraduate, undergraduate and graduate apprenticeship programmes in a wide range of built environment disciplines, including Architectural Technology.

Dr Suha is a Chartered Architectural Technologist and Fellow Member of CIAT. She completed her PhD at the Design Innovation Research Centre at the University of Reading, which investigated the use of Building Information Modelling (BIM) in interdisciplinary practices in the UK and USA.

She is an Advisory Group Member for QAA Subject Benchmark Statement for Architectural Technology and holds External Examiner positions at national and international institutions to support the development of programmes in Architectural Engineering, Building Technology and related areas; and examine a range of academic perspective in Architectural Technology and Design.

Dr Jonathan Scott FCIA

Dr Jonathan joined Robert Gordon University in 1992, completing an HND in Architectural Technology. He went on to complete a first class honours degree in the same subject, graduating in 1998. Except for a short stint in industry, Jonathan has worked in research and teaching for The Robert Gordon University on a variety of projects, developing his interests in the areas of environmental design, energy monitoring, life cycle analysis, social and occupancy evaluation. In addition, Jonathan is also interested, in a research and educational aspect, in CAD, surveying technologies and historic conservation.

Since 2000 Jonathan has undertaken a PhD (an EPSRC funded studentship), the title of which is "Optimising The Relationship Between Passive Solar Design Of New Housing And The Economics Of Construction and Land Value", in the field of environmental design, creating a decision making tool for the selection of detached homes. He completed successfully in 2004, and he has since been employed as a Research Fellow at The Robert Gordon University.

Ann Vanner FCIAT

Ann is a Chartered Architectural Technologist and Fellow Member of CIAT, architect, an educator, a practical researcher and academic. She brings an uncoventional and unwavering passion for the built environment sector and detailed construction knowledge, as well as project management and problem-solving abilities. Practical creativity is her starting point and approach. This fosters the idea of learning through doing and inspirational pragmatism. She is passionate about the importance of design detailing – believing that for a building to function well, so must its details.

She is a senior lecturer and teaches on the Architectural Technology and architecture programme at undergraduate level and at Masters level on the MSc in Conservation and Adaption at University of Central Lancashire.

In addition to her architecture and research work, she is involved with a not-for-profit organisation, ACT for Housing, which aims to work with key anchor organisations in Lancashire to develop sustainable housing for local community groups.

Ann's involvement with CIAT includes the MCIAT Professional Assessment as a Panel Moderator and as a Committee Member for the North West Region in her role as Regional Educational Officer for universities.

Andrew Wilson MCIAT

Andrew is Head of Architecture at Sheffield Hallam University, a CIAT Centre of Excellence. He is both a Chartered Architectural Technologist and a Chartered Architect. He has ten years of experience as a practising architect and has been teaching, managing and leading in higher education for 20 years. He has a broad range of interests and expertise in teaching across the two professional disciplines. These bring together design and technology under an all embracing commitment to environmental sustainability. He remains active in designing and self-building.

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ARP brings aluminium CPD up to date

ARP has got decades of experience in the design, production and installation of aluminium roofline products. Which makes them perfectly placed to offer Architectural Technologists a comprehensive CPD module entitled Correct Design, Construction And Maintenance Of Rainwater Systems. ARP has teamed up with CIAT to produce a training programme tailored specifically to architectural technologists and their key role in the specification of aluminium building products.

With constant changes in legislation, climate, and market conditions it is important that Architectural Technologists keep themselves completely up to date with the latest standards, design norms and market best practice. Over the last 30 years, ARP has built a reputation of working with its customers and providing design solutions – from small buildings to major construction projects.

The newly revamped CPD will examine the key factors relevant to understanding rainwater systems , jam packed with the latest updates in the sector from design and rainwater calculations right through to the environmental impact of materials

The seminar can be delivered at your own premises and takes about 45 minutes to complete and, if the CPD takes over lunchtime, we will even throw in some lunch.

Any CIAT members interested in taking advantage of this special CPD course can contact us on 0116 289 4400 or fill out a form on our web site at www.arp-ltd.com/services/cpd/

Beside the Seaside

An exclusive gated development of nine stylish new build apartments right on the beach at Margate feature a striking modern but weatherproof design featuring made-to-measure aluminium roofline products, panels, copings, soffits, fascias and porches designed and made by ARP and finished with a hardwearing marine grade polyester powder coating to protect the aluminium from erosion by the sea air.

ARP was proactive in coming up with design solutions, making suggestions and small changes to make the finish work even better and all of the bespoke products were specified to the exact dimensions of the buildings by ARP's in-house CAD team to provide finished drawings for the client.

Tailor-made

While we may be well known for guttering and roofline products – the clue is in the name after all –here at ARP we don't just stop at the roofline. Because we manufacture in aluminium at our own plant in Leicestershire we can make many distinct kinds of building products, not just guttering.

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Commended 2022

STUDENT AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | PROJECT

Recognising outstanding design achievement in Architectural Technology – a university/college project

ARC517 Sirocco Quays: Multi-Generational Residential Scheme

Words by Hannah Irwin, Ulster University

The proposed site is located on the banks of the River Lagan and is situated just outside Belfast City Centre. The proposed redevelopment will extend and bring renewed life to the East Bank of the River Lagan, creating a vibrant, new waterfront urban quarter. The multi-generational apartment building is part of the larger Sirocco Quays redevelopment plan.

The site benefits from unrivalled views towards Waterfront Hall, the historic Samson & Goliath cranes and the redeveloped riverside; all of which will be offered as main focal points in the tower apartments, which are generally suited to one- or two-person occupancy. The lower floor levels, whilst still benefitting from excellent scenery are orientated around ease of accessibility, and communal essence, benefitting larger families.

Numerous construction objectives have been identified which, if followed, will ensure the redevelopment will be sustainable both after handover and during construction, thereby future proofing the scheme and ensuring new energy efficiency standards are exceeded.

1. Reduce reliance on the HVAC system through the use of a 'smart facade'. Specifying a smart facade will also play into my sustainability aim, whilst also reducing energy consumption and bills for the homeowner.
2. Integrate a passive production of energy from renewable solar source, therefore reducing carbon emissions from the building, contributing to the goal of being net zero by 2050.
3. Improve airtightness by giving careful consideration to modelling and specification.
4. Integrate a rain-water recycling system to reduce water demand.

In addition to the green objectives specified, the functionality of the scheme was paramount, especially to increase the desirability of city centre living within Northern Ireland. Whilst the form specified in the

masterplan document had to be stringently adhered to, there was room to enhance both the aesthetics, ecological value and flow between interior and exterior. The boundary recess at ground floor level allowed for the inclusion of a sheltered pedestrian walkway to each entrance. Raised beds incorporating soft landscaping and recessed seating were proposed to 'engulf' the underground car park entrance, having the dual function of obscuring the area, and improving safety. Numerous raised beds mimic the angles of the proposed development, creating a social space for residents and permeable separation between vehicular and pedestrian walkways. Within the development itself, numerous intensive green roofs and social terraces are to be integrated, some of which have been zoned for specific uses, such has allotment gardening, children's play, or outdoor dining. Rooftop areas that do not offer significant views over the surrounding cityscape have been zoned for plant and rainwater harvesting equipment. The areas which also suffer from high levels of wind whilst being of an advantageous southerly aspect have been zoned for PV solar panels.

The main focus was upon the use of sustainable materials which would signify the dawning of a new construction age for Belfast City. It was paramount that the proposal would integrate seamlessly into the adjacent residential area, and as such external brick cladding has been utilised, which has the dual function of paying homage to the historical use of the site as a world class manufacturing hub. The spotlight of the project belongs to the hybrid cross laminated timber and steel structure.

As an Architectural Technologist, a main aspect which needs considered is Building Control approval, especially when considering an under-utilised and often villainised construction material such as CLT. In order to meet current UK Regulations, integrating CLT as part of a hybrid structure will be best, resulting in the benefits of the material being utilised, while the disadvantages are largely avoided.

With fire regulations being at the forefront within the UK, it was important to consider that CLT has not been utilised within a large-scale development in the UK due to this reason. However, with continual research, numerous schemes in European countries were identified, which became important precedents for the structural and technical design. Regarding fire insulation and integrity, it was obvious from these schemes that the main argument for approval rested on the fact that large format engineered panels combust at a slower rate than smaller panels. This, along with the use of fire-rated plasterboard to increase fire resistance between compartments would ensure the exceeding of regulations.

The principal load bearing and stability of a CLT building is achieved through a combination of the lower steel frame (ground - fourth floor), and CLT panels. The technical details produced have been fully considered to ensure stiffness of the slab edge and to ensure there is adequate support for overhanging modular steel balconies. As an AT, it was vital that proposed materials and systems were adequately specified and detailed, which was undertaken using Revit and through contacting suppliers directly for more information. Through my research it was clear that the structural capability is less than of a concrete or steel frame, however this can be counteracted by use of a hybrid model. Due to a hybrid construction model being required, the efficiency of having all structural elements being erected at the same time would be affected. Increased site co-ordination would be required to reduce the likelihood of costly delays.

As CLT panels do not offer sufficient acoustic insulation properties, this will need to be considered between floors. The floor construction integrates rubber acoustic layer (which will dampen sound) and acoustically rated insulation.

In order to reduce reliance on the HVAC system, a smart facade will be used that will significantly reduce the negative impact of solar gain. Using solar mapping software, have identified the southern facade as the ideal position for integration of this system.

To fulfil the responsibilities of an Architectural Technologist, mechanical and electrical provision had to be considered. From an early stage, it was identified that numerous service cores would be required to penetrate through the entire building. Additional cores service the lower levels (ground - fourth) as these levels contain numerous more apartments. Dropped ceilings (at 2400mm AFFL) are present throughout the development - this will allow for services to be concealed and connect easily to the service core. As for the heating system, the Daikin Altherma 3 Geo has been selected to provide economical heating and hot water to each individual apartment. The system consists of a network of in- apartment water-to-water heat pumps with integrated DHW cylinders, connected to a common central water loop to form a linked communal system. The system utilises lower water temperatures, resulting in a reduction of more than 90% in heat losses compared to alternatives.

In short, the development was designed to not just meet the minimum standards required by Building Control. Instead, the proposal has considered and displayed lessons learnt from numerous precedent studies, British Standards and best practice documents related to NZEB, BREEAM, and the London Plan Guidance (to name a few) to design a fully resolved scheme which integrates the most sustainable materials and construction processes available today.

Judges' comments

Hannah's proposed redevelopment will extend and bring life to the East Bank of the River Lagan, creating a vibrant, new waterfront urban quarter. With pleasing space planning, excellent visuals and building form, the design is well thought out and resolved.

This unusually shaped site presented a real challenge in producing an effective design. Hannah has conquered this and presents a striking building with a richly textured façade and a landmark tower providing a focal locating point for the area. Recognising the social needs of the residents, it includes the creation of outside space including green areas to the roofs and terraces.

The judges were unanimous in their agreement that this scheme has been reviewed in detail with an exemplary grasp on a range of areas and particular effort has been made to ensure that fire has been considered throughout. Of particular note was the way clear and logical detailing has been enhanced with the 3dimensional exploded callouts showing Hannah's grasp of technology at key junctions and in the layering of materials. Hannah is congratulated for her choices and fine execution of materiality. ■

Highly Commended 2022

STUDENT AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | PROJECT

Recognising outstanding design achievement in Architectural Technology – a university/college project

Culinary Growth Incubator

Words by Adam Lunney ACIAT, Anglia Ruskin University

Although there are plethora's of built environment nuisances to investigate, this project aims to limit the detrimental assumption to supply food just in time and consume global offerings at an instant of personal craving. As food is a primary life resource, it is imperative that creases of expectation are ironed to sustain fair and equal growth opportunity.

ARUP notes that food is recognised as the single strongest lever to deliver both human health and environmental sustainability. Additionally, the overarching topic responds to all 17 factors of the United Nations Sustainable Development Goals. The Culinary Growth Incubator is a catalyst in the synthesis of a circular ecosystem to grow, harvest, study, assemble, sell, consume and reuse/repurpose food sustainably at source. By imposing direct and indirect educative coincidences onto the stakeholders, knowledge can be disseminated beyond the local boundary to adapt behaviour and understanding of environmental sustainability.

Following the success of the flagship Kings Lynn Innovation Centre, the local Council proposes an opportunity to develop an innovative twin to further expand the scope of the towns busi-ness growth. Kings Lynn has a fair offering of culinary establishments although their variance is limited. The proposal must support and encourage new, energetic and culturally diverse local business and as such must be located centrally to provide equal and fair access.

Explorations of vacant sites identified an historic grain silo yard offering natural affinity to the culinary redevelopment. An historic Phase 2 SI identified complex conditions given its industrial past. Hot spots of contamination were detected with deep strata, low bearing capacity compositions of made ground and Terrington beds. Naturally the water table is high given the proximity to the River Great Ouse. Screw piles were explored as founding solutions to limit intrusive construction. However, these were beyond bearing condition scope and could potentially lead to premature, unchecked corrosion compromising the buildings integrity.

Further site analysis identified technical design

generators stipulating retention of the public right of way (Devil's Alley) which segregates the site in two unequal halves. Significant sketch and contextual exploration tests identified an archway glimpse from the eastern approach. This informed a linear delineation retaining the forward view to the river whilst reinstating the public access rights. The floor plan configurations are influenced by this imposed design constraint, although to no detriment as it induces points of interests with vast vistas over the river for patrons to revel.

To optimise growing efficiency for various root depths, the farm comprises hydro/aquaponics, greenhouse soil beds and external maximum root-depth beds. This variety imposes significant structural loadings which were calculated to identify economic foundation and structural solutions within the limits of proprietary span tables.

Review of heating and cooling degree days from local weather station data informed variable occupiable comfort levels in accordance with CIBSE Guide A. This enabled preparation of an employer's requirement performance specification and schematic utilising passive heating and cooling philosophies. These technologies and the rational design and construction arrangement factor the BREEAM 'Outstanding' pre-assessment rating.

By raising the fabric on pilotis, the ground floor is partially gifted to the general public. This blurs the boundary between public and private realm whilst providing ample shelter. Unfortunately, the shading restricts the provision of sustainable green corridors between the hard landscaping encompassing the site boundary. However, a plush community allotment reinstates flora and fauna into the industrial site. Hard landscaping comprises crushed cockle shells as homage to local fishmongers whilst emanating audible interaction.

A primary concept evolves the Cork House philosophy which utilised polyfunctional, expanded cork blocks to rationalise elemental construction typologies by omitting superfluous and plastic components. Although this arrangement concluded scale limitations due to lateral instability. To transpose this rule onto a commercial scale development, CLT plank shear walls and glulam perimeter beams were faced with CNC'd cork billets for weather cladding. This functional element assembly is primarily organic offering significant carbon sequestration. Further divulsion of this rational design order reduces non-recoverable composites (with mechanical fastening preferences) to facilitate end-of-life disassembly for materials banking following cradle–to-cradle lifecycles.

A bio-climatic double-skinned façade (east-south-west) allows maximum views whilst controlling solar and thermal gains. This layer induces a dynamic buffer responding to external conditions to optimise the internal environment. The supplementary barrier acts as further protection to prevailing southerly weather, limiting wind wicking from the thermal envelope whilst further reducing wetting and drying cycles to extend the maintenance life of the exposed insulative organic cladding.

The podium floor comprises crystalline waterproof additive reinforced concrete to withstand risk factors of the open space subjected to flooding, saline atmosphere, mechanical vandalism and arson. This safeguarding ensures life and property preservation whilst maintaining business continuity of the community asset. It also reduces ground intervention to limit occupied spaces contacting contaminants.

The upper glulam timber frame adopts offsite prefabrication with utilitarian tongue-and-groove 'Pitzl Connector' kit of parts typologies. This offers quick and easy onsite assembly with low skilled labour, improved health and safety and simple material recovery.

BS9999 identifies the respective risk profiles of the alternate purpose groups and acknowledges the associated risks of an un-compartmented double-skin façade. Subsequently, the fire strategy has been designed to compartment the external thermal envelope from the full height transparent void. Inclusion of fire suppression enhances safety provisions by cooling and reducing the fire load whilst affording extended travel distances, reduced periods of resistance and further asset preservation.

The fire performance of expanded cork (Class E) poses limitations when responding to performance requirements of the Building Regulations. To allow specification, the surface is treated with a non-hazardous, ferric phosphate, water-based fire retardant solution. This impregnates the cellular structure and remains active for the lifetime of the substrate without compromis-ing its properties. This arrangement increases surface reaction to fire to B-S1, D0. Subsequently, the coincident, property and relevant boundary conditions are satisfied with the respective unprotected area requirements as demonstrated through the enclosing rectangle method pre-scribed within BRE 187.

To ensure continued functionality and use under CDM, a maintenance and replacement strategy was developed for the soil growing mediums which comprises galvanized livestock water troughs tanked with food grade resin to extend the corrosion protection whilst also ensuring potable and safe consumables. Once delivered to the ground floor, the troughs are transported vertically within the shared passenger/goods lift and relocated around the building as required on low profile dollies.

Judges' comments

The Culinary Growth Incubator provides a circular ecosystem to grow, harvest, study, assemble, sell, consume and reuse/repurpose food sustainably at source. This carefully thought through design incorporates a number of unique features. These include the bioclimatic skinned façade featured on the south elevation to maximise views out of the building and control solar gain into the building; also incorporating a supplementary barrier preventing wind wicking and reducing wetting and drying cycles to extend the life of the cladding.

It was clear to all the judges that Adam had undertaken a substantial amount of work to arrive at this design. The attention to buildability was evident in many parts of the presentation with more than one judge pointing out that they could see every nut and washer on the details! The exemplary details are supported superbly with axonometric and exploded 3D details and this level of detail shows Adam's level of understanding of materials and detail development.

Adam has taken a bold step in incorporating an innovative structural frame which not only adopts offsite prefabrication principles, but also uses a kit or parts principal for ease of assembly, adding to the overall attention to buildability on this project. The incorporation of low maintenance principles and overall functionality of the design further emphasises Adam's awareness of technology. ■

Winner 2022

STUDENT AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | PROJECT

Between the Bridges Regeneration

Words by Words by Ian Westhead ACIAT, Solent University

BCP FuturePlaces, an urban regeneration company, acted as my client. They have an active masterplan of sites across the Bournemouth, Christchurch and Poole conurbation that they are seeking to invest in and develop over the coming years. It was from this masterplan that I chose the 'Between the Bridges' site, which is a three-acre brownfield area adjacent to Poole town centre.

In response to the brief, I set out to deliver a varied development including a cultural landmark, commercial retail units, light industrial units, residential units, health and wellbeing facilities and a supporting public realm that connects to the wider town. For environmental development, I set out to research and implement the most suitable construction techniques and technologies and integrate a largely car-free transport scheme, which favours 'the 15 minute city' and 'walkable urbanism'.

The project also had to respond to the flood risk from the adjacent channel and the corrosive effects of the coastal environment.

My process started loosely with 'site zoning' sketches. These illustrated permeability, important sightlines, appropriate heights and the best areas for active uses and private, residential uses. This established the concept of creating sightlines towards the two distinctive bridges adjacent to the site and the historic church tower in the Old Town. A second concept was to grade the heights of the buildings up from east to west to correspond with the lower Old Town and the higher regeneration area. The sketches were then gradually refined to give rough areas for commercial units, residential units, the public realm and ancillary and servicing areas.

As the plans developed and began to be elevated, I considered how best to represent the site's context in the

scheme. Overall, it was the theme of maritime industry that had the greatest influence. This was continued right into the selection of particular materials, constructions and systems in the technical stages, where details such as weathering-steel window heads were chosen to replicate the natural corrosion of the nearby steel-clad buildings; slimline metal casements read with the historic quayside warehouses; and cable truss curtain walling suggested the rigging of boats. Locally inspired Purbeck Stone and Poole pottery-style glazed brick slips were chosen as cladding materials, but were integrated into rainscreen constructions that allowed for greater flexibility in the format and orientation of the coursing, bringing a fresh interpretation of the historic vernacular.

Functionality and inclusivity were considered in the public realm by, for example, conforming to the gradients and stepped access requirements set out in the Building Regulations; separating pedestrians from vehicles; and complying with local authority transport policy in road design. Residential and commercial cores were designed with bin and bike stores, BS-compliant fire strategies and goods and personnel lifts, ensuring safe access and comprehensive servicing. Sanitary facilities were considered in terms of Doc M, with accessible WC and shower packs specified in key areas. Level thresholds are detailed in all balcony and terrace scenarios. A full range

of one-bed to four-bed residential units are provided, accommodating various ages and occupancies.

A regard for buildability and assembly is present in, for example, the in-situ concrete superstructure for the lower storeys in the art gallery where there are long spans and offset load paths, in comparison to the steel-framed superstructure of the residential buildings where gridlines stack and spans are shorter. Lightweight SFS is specified for most external walls, which is a relatively fast construction and consists of demountable and recyclable structural items. Various other pre-manufactured components are specified that simplify installation, such as floor cassettes, pre-fabricated balconies and curtain walls.

The maintenance of the buildings and equipment is one area in which health and safety has been considered. Flat roofs are provided with access hatches from stair cores and mansafe systems to all areas, such that M&E equipment is safely accessible and serviceable. Compliant means of escape, including the provision of firefighting shafts where required, also addresses the users' health and safety.

Various active and passive measures have been included to address environment and sustainability. Each apartment is specified with a Daikin Hydrobox fed from communal air source heat pumps, and these have meters that allow for the monitoring and optimisation of space and water heating. Commercial and communal areas are also heated via ASHP, meaning gas will not have to be brought into the site. Flat roofs are intended for a PV provision of approx. 320m2 to partially offset the electrical consumption within the commercial buildings; total power output is anticipated to be 48kWp. In south-facing areas, cantilevering superstructures and oversailing soffits reduce overheating to internal spaces whilst increasing the lettable area of the floors above. Floorplates are generally open plan to afford greatest flexibility in building use and penetration of natural light. Phase 2 is to include a 200-space electric car club, which is designed to encourage residents away from private car ownership and prioritise more sustainable vehicles in the conurbation road network. Extensive ecological provision at street level and in the green roofs aids C02 absorption and the attenuation of surface water runoff. The use of pre-manufactured systems and components wherever possible reduces material wastage as a result of factory-controlled manufacturing conditions.

A rich mix of styles really set this submission apart with Ian's great eye for detailing

Performance and durability have been addressed with, for example, the specification of Grade 3 Caltite cementaid where the superstructure is within the flood zone, which safeguards the accommodation at the undercroft level. Adherence to robust detailing in the residential areas ensures a warrantable and 'tried and tested' solution in terms of acoustic transfer. The high thermal mass of screed optimises the underfloor, ASHP-fed space heating. Building Management Systems (BMS) are to be installed in commercial areas, optimising heat loss / recovery; lighting; water usage and any other M&E items. Flow-restrictors are specified to all sanitaryware in the commercial and residential accommodation to minimise potable water consumption. Demountable cladding components allow for maintenance and replacement without detriment to the building structure. Marine grade components and finishes, such as seals, powdercoating and fixings, ensure that constructions are suitably resilient in the coastal environment.

Judges' comments

This is a varied development which includes a cultural landmark with residential and retail units on a three-acre brownfield site. Ian has tackled this complex project head on and impressed the judges by displaying a wide range of skills in his presentation. A rich mix of styles really set this submission apart with Ian's great eye for detailing and the execution of the more complex junctions in the development. Along with Ian's fantastic design skills, he has a building that compliments the urban riverside setting for the selected site. The elevations are thoroughly thought out – the steel alignment, colour scheme and overall material mix is excellent.

This is a well resolved technical design solution with developed annotation and a fine level of attention to fire and sustainability. A lot of the features are thought through considerably and add to the overall nature of the proposal. With all this combined, this project is a standout as a Winner for the Student Award for Excellence in Architectural Technology | Project. ■

Finalists

STUDENT AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | PROJECT

The ‘Spotlight’ Community Theatre

Sarah Ball,
Nottingham Trent University

The ‘Spotlight’ Community Theatre provides workshops and courses for people of all ages and backgrounds, while still operating as a public theatre where the general public can purchase tickets to shows and performances. The auditorium is situated within a central courtyard with amphitheatre seating that creates a unique theatre experience. The courtyard has a large glass roof that is fixed above exposed curved steel beams along with a retractile acoustic tensile roof that is secured between these beams. The project also comprises of a public garden situated adjacent to the proposed building that creates a pocket of green within the urban city centre and promotes biodiversity and wellbeing.

PSV7 - A Sustainable Single Family House

Márton Fehér & Jonathan Skov,
VIA University

PSV7, which is short for Peter Stellfeld Vej 7, is a single-family house of two and a half storeys. The Danish construction industry is trying to aim for a more sustainable future, where in many cases it is necessary to part ways with the traditional solutions that have been utilised for decades. The plot is located in the Vestereng area, in northern Aarhus, Denmark, surrounded by nature. The goal was to create a modern, up-to-date design, whilst keeping tradition in mind, so that the building would not disrupt a neighbourhood with more dated dwellings. Keeping interior spaces open and to bring nature inside, large windows facing the south were installed.

University Gateway

Mike Newsway,
University of Northampton

The brief required a landmark building that would be at the centre of a recently built university campus, that was both constructed and used in a highly sustainable manner. The long thin plot suited the concept of a shoe shaped building that reflects the history of Northampton, as a centre for shoe and boot manufacture. The use of cross laminated (CLT) and glue laminated (GLULAM) timber provides both the structural elements and the final finish of the building, which produced a striking building design.

STUDENT AWARD FOR EXCELLENCE
IN ARCHITECTURAL TECHNOLOGY
| PROJECT

Meet the Judges

Chair:
Paul Laycock FCIAT

As a Chartered Architectural Technologist and Chartered Builder, Paul specialises in excellence in technical design of all types and sizes of buildings with a special interest in sustainable solutions, healthy indoor environments and successful buildings for all users at all stages of a building life cycle.

His involvement with CIAT has spanned many years and many tasks and roles. Previous Vice-President Education, Member Panel Moderator, Professional Interview Assessor and Accreditation Panel Chair amongst those.

As an academic, Paul's main role is in inspiring and shaping the future professionals that will be the next generation of the built environment sector.

Christopher Day MCIAT

Christopher is a Chartered Architectural Technologist with over 16 years of professional experience spanning complex design refurbishments in Central London, UK and most recently leading a one-billion dollar mega build project in the DIFC, Dubai, UAE, designed by Foster and Partners.

For Christopher, each project is a puzzle that requires time to process and logical thinking to be completed successfully. This focused commitment and competence towards each project has given him scrupulous ability to simultaneously manage design development, technical coordination, risk mitigation, BIM delivery and programme tracking.

Reputable for leaving no stone unturned when leading successful design and construction packages, he is also a firm advocate for embedding lessons learned into company standards and aims to raise the industry standards overall. Christopher's future-thinking has seen him provide invaluable mentorship to developing Architectural professionals, where they themselves have climbed the ranks under his guidance and work ethic.

Irene Hayden MCIAT

Irene Hayden graduated in architecture from Queens University Belfast in 1994 and worked in industry in the UK and Ireland, before joining Atlantic Technological University (formerly Galway-Mayo Institute of Technology) as a lecturer in Architectural Technology in 2005. Irene was the recipient of the Presidential Teaching Excellence Award in 2020. The Atlantic Technological University programme board for the BSc (Hons) in Architectural Technology, which Irene is part of, won the Excellence in Education and Training Award at the Building and Architect of the Year Awards 2021 in the Republic of Ireland.

Irene is a Chartered Architectural Technologist and a Chartered Engineer. Irene completed a first-class honours degree in Civil Engineering in 1999, an MSc in Renewable Energy and Energy Management in 2011, a Post Graduate Diploma in 2018, and is currently completing her PhD studies with Lancaster University in the broad area of building regulation education.

Irene is a Republic of Ireland Centre Committee member.

Róisín Ní Chatháin FCIAT

As a Partner at architecture and planning practice BPTW, Róisín plays a leading role in the delivery of large-scale residential, mixed-use and regeneration projects. Her ability to manage multiple pre- and post-planning stage projects, successfully lead design and consultant teams, and her strong understanding of the technical aspects of projects has led Róisín to develop excellent working relationships with clients, contractors and consultants.

A Fellow Member of CIAT, in 2020 Róisín's exceptional talent and architectural ability coupled with her dedication to the profession and endless support for her fellow Architectural Technologist was recognised when she won the Chartered Architectural Technologist of the Year at the AT Awards. In 2021, she was also awarded the Alumni of the Year award from Edinburgh Napier University for her dedication to the profession, and in recognition of her efforts to further the careers of the next generation of Architectural Technology professionals through a number of mentoring schemes.

Usman Yaqub FCIAT

Usman is a Chartered Architectural Technologist and Fellow of the Institute. Since 2007, he has worked in professional practice going on to establish Studio Yaqub in 2014, which is an award-winning CIAT Chartered Practice.

Usman has worked in all sectors and specialises in working on challenging sites whether they be residential or commercial. In addition, Usman is an Associate Lecturer at the University of West England (UWE) having originally studied there and now involved with a range of architectural programmes, particularly Architectural Technology. He has also been actively involved in the Institute at a local level since 2018 and is currently Regional Chair and CPD Officer for the Wessex Region.

In 2021, Usman received the Institute's prestigious Gold Award, as recognition for his significant contribution to the Wessex Region and Institute with his implementation of a newly reinvigorated CPD series which has significantly impacted engagement within the Wessex Region and on both a national and global scale.

Commended 2022

AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | SMALL TO MEDIUM

19a Weston Hills Road

Words by Studio 11 Architecture

STUDIO11 architecture

Our client purchased a plot of land that had previously been refused planning permission at both local and planning inspectorate level. Their dream was to build a modern tailor-made home to provide multi-generational living for their blended family including an annexe for their parents. Pre-application discussions revealed the Local Authority were open to a potential new dwelling in the site subject to the building being of outstanding architectural quality, incorporating innovation and sustainability. The outcome from discussions led to us using Architectural Technology as a core driver for developing a concept design around our client's brief.

A key design driver for the new home was the form of the very distinctive dwellings surrounding the site. Low Fulney was one of several locations of the Land Settlement Association where people were relocated from the cities to rural areas provided homes and encouraged to live off the land. These homes in Low Fulney follow a very distinctive Dutch Barn form incorporating a timber constructed mansard roof arrangement to the first floor. Our clients were also very keen that their new home appear modern and contemporary. This led to the use of a steel frame following the mansard concept but rather than incorporate a masonry ground floor it was felt that a modern twist to the mansard shape would be to incorporate the whole building within a tiled roof. The steel frame was predominantly chosen to allow for larger open spaces but also allowed for the construction of a lightweight structure above the ground.

Highly insulated site constructed timber infill panels were then used between the frame with a service void to the inside and clad externally with a recycled tile at ground floor, first floor and roof. Whilst the tile itself was a standardised size the material composition of the tile meant that a fully ventilated void was required behind the cladding to ensure that there was no warping or deformation of the tiles once installed.

The form of a mansard roof meant that either traditional gutters or hidden gutters would be required on the building. A hidden gutter solution was investigated but the overall size and fixings for the tiles meant that the gutter would only work in the main roof area of the building. A traditional gutter system was reviewed but this significantly impacted on the aesthetics of the building. An alternative solution was devised whereby a French drain was incorporated around the permitter of the

building which captured water falling from the building in perorated pipes, discharging the water into a Sustainable Urban Drainage Pond at the front of the site. This solution has the added benefit that the French drain cleans the water at source which is then attenuated to greenfield run off rate within the pond.

A key area of the design brief was to ensure that the building was flood resistant and the Environment Agency stipulated that the finished ground floor level to be no lower than the 1:100 year + climate change flood level. This meant raising the ground floor approximately 900mm above the existing ground level. We achieved this by using a suspended ground floor with perimeter French drain to deal with surface water run-off.

The house is designed to meet the definition of Zero Carbon as defined by the Zero Carbon Hub. This is made possible with a fabric first approach to design- with U-Values significantly exceeding Building Regulations throughout the building. As well as significant fabric improvements we have also included Mechanical Ventilation Heat Recovery systems, ground source heat pump for heating and hot water as well as photovoltaic modules for electricity generation which is then stored in batteries on site. The electricity generated is sufficient to power the main house and annexe, charge the occupiers vehicles and sell the surplus back to the grid.

The final home emits – (minus) 2.5 tonnes of carbon dioxide per year when compared with a similar sized house emitting on average 6 tonnes. That is a carbon saving of 141%. This meets the Zero Carbon Hub definition of a Zero Carbon home.

> A creative and striking design using the innovation of Architectural Technology

The size and spans involved in the building meant that rather than timber a steel frame was chosen. This meant that large open spaces within the building could be created as well as maintaining design features directly relating to the site and its surrounding environment. One key design feature of the building is the entrance door and canopy above which is designed to intrigue and appear as if the roof leans forward towards you when you enter the building. Significant design time was spent between the Structural Engineer, steel fabricator and ourselves ensuring that the frame was detailed appropriately to provide both the internal and external spaces required by the design. We developed a 3D model of the frame and key elements of the building to ensure material junctions were co-ordinated and worked efficiently within the overall design. The first model developed highlighted issues relating to steel connections and allowed us to work with the structural engineer and the steel fabricator to refine specific connections ensuring continuity of insulation layers and the visual appearance externally of the building.

With multi-generational living in mind, it was important that every occupant's age, together with their needs and lifestyle were taken into account when designing the inside spaces. The grandparents annexe, adjacent to the main house, is designed to be fully accessible for elderly residents. To accommodate the differing ages of the children, consideration was given to the teenage family

members having a space for them to be themselves. We designed them their own wing on the first floor, and Nathan and Amye a self-contained primary suite at the front of the house next to the nursery where baby Niamh has space to play as well as her own ensuite. The landing on the first floor is designed to be the spine of the building, allowing access to bedrooms and bathrooms. At the end of the landing, the space opens out in to the double height Lounge area below.

Downstairs, the spaces are designed to be open, double height spaces where possible to promote sociability and mental well-being, allowing plenty of space and light. There are also multiple areas that create a cosier environment to gather in small groups or have individual space when needed or carrying out individual activities. When asked in a magazine interview if the final result was everything our client had hoped it would be, they said "Yes, and more. I was able to create a family home where multiple generations can enjoy family life together. Creating a home that is completely unique and tailor made to us is something I am very proud of."

Judges' comments

19a Weston Hills Road is a multi-generational home located in the Lincolnshire Fens which achieves the client's brief in terms of usability and sustainability, with a wide range of technical solutions. A creative and striking design using the innovation of Architectural Technology with solid detailing and consideration to both the site and planning constraints. A sound fresh approach to surface water drainage delivering a solid technical solution to a design criterion. ■

Highly Commended 2022

AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | SMALL TO MEDIUM

Willis Road

Words by PiP Architecture

When Shirley and Carl first saw this large Victorian town house in a central conservation area of Cambridge they had visions of restoring its integrity and showcasing its heritage features. The property had been converted into rented flats which were suffering from the effects of poor maintenance and presented little to justify status as a 'Building of Local Interest'.

The Victorian detailing was in much need of love and attention and the small rear outdoor space resembled more of a wasteland than a garden. The clients had ambitions to convert the property back into a single family home, enabling their maturing family to move from their previous large, rural home to this highly sustainable city location.

Given the history of the building and its inclusion in a conservation area, great care was taken to retain and restore the front of the property to a high standard of authenticity using precision and craftsmanship. Keen to echo the arts and crafts workmanship of the Victorian features, PiP built strong relationships with local artisan traders to facilitate bespoke features throughout the project, such as the light-industrial feature staircase, handmade kitchen, built-in joinery and hung sliding doors. Professionals carefully sandblasted the brickwork and pointed the lime mortar, as well as reinstating the geometric paved footpath and the front boundary wall to its original style. Slimline glazed heritage sashes which replicated the originals replaced the underperforming existing windows.

Internally, the challenge was to retain original features whilst thermally upgrading the property to provide a higher level of thermal comfort. Existing internal walls have been thermally upgraded with therma-backed plaster boards, while new walls are thermally enhanced through a timber frame approach. Walls in non-habitable rooms such as the entrance hallway and the kitchen were left exposed to pay homage to the charming brick which gives the house its character, as well as the hearth to

draw attention to this traditional focal point of the home. Despite increasing the thermal resistance of the building, PiP managed to retain the generous ceiling heights, evoking the feeling of grandeur typical of Victorian homes.

The entry hallway was opened up to make way for a bespoke staircase which wraps around the stairwell, where a central skylight allows light to fall three storeys, highlighting the textured exposed brick work. A bespoke feature staircase made of artisan steel was specified to heighten the drama of the elevated space. The architects designed the concept for this and worked collaboratively with Artisteel to successfully implement their vision.

The modern extension has been designed to overcome site constraints while maximising living accommodation with the addition of an office to the rear. Made particularly relevant in the present day as work from home has become more common, the visual and literal separation of these two spaces is an important aspect as people are realizing the importance setting boundaries to enable a healthy work life balance. The extension wraps around the boundaries of the site to create an enclosed haven of concrete, Corten and greenery. The sense of seclusion induced by envelopment is supplemented by the relaxing sound of running water, making the garden a place of solitude amongst the busyness of the city. The overall effect of enclosure created amidst the symbiosis of nature and manmade materials is one of tranquility.

The greenery in this otherwise urban location extends to the sedum roof which enhances biodiversity and improves water attenuation. This is also supported by hard-standing that drains effectively into strips of planting. Due to the constrained nature of the site the clients were unable to use soakaways to deal with storm water. Instead, to deal with storm water sustainably, it is discharged into the drainage system via an attenuation tank located below the garden. The tank can also be used for watering plants in addition to holding water on site in the event of a storm. Before it reaches the attenuation tank, water is held in the pond to allow for natural evaporation and to assist with summer cooling.

To meet the client's sustainability ambitions, PiP implemented a range of sustainable technologies, starting with a fabric-first approach. An air source heat pump provides all heating and demand for hot water, which fuels the underfloor heating system to provide a lower and more consistent temperature for optimal thermal comfort and energy efficiency. As well as considering operational energy, PiP specified exclusively low or zero maintenance materials externally to ensure the longevity of the building; and went further by considering lifetime embodied carbon, choosing materials that are completely recyclable. The steel frame, roof slates, hung bricks, Corten, zinc cladding, metal and timber window and door frames, and all plasterboard and gypsum products can be recycled after use. Environmental responsibility extended to ensure all timber within the construction came from FSC certified sources.

In regards to energy efficiency, the original building was performing poorly, but following PiP's renovation and extension it now easily exceeds the current building requirements, moving from an EPC rating of E to B.

The construction technique includes a steel frame with timber infill to maximise thermal insulation between the studs, as well as facilitating faster road-side deliveries than would be possible with a more traditional construction method such as brick, block and cement. The wall construction consists of 47x150mm C24 studs at 600mm centres with head and sole plates. The void between studs is filled with 100mm PIR insulation with an additional continuous 50mm internally minimize thermal bridging. Externally the building is sheathed in 18mm ply and breather membrane. This is then clad in either handmade brick tiles on battens fixed with stainless steel screws or standing seam VM zinc plus. Internally, the timber frame and steel frame are sheathed in 9mm OSB with a vapour control layer over. A service void is then created using battens and plasterboard skim.

At Willis Road, PiP have created a flawless harmony between the old and new, and the internal and external spaces of this building, with high quality materials and finishes running throughout to bring the design together. As Director Chris Senior FCIAT says; "This property showcases how historical architecture can be elevated with sympathetic and creative design to celebrate modern family living."

Value of Project: £700,000
Professionals/Contractors Involved:
Architectural Technologists: PiP Architecture
Landscape: Colm Joseph
Structural Engineer: CAR Structures Ltd
Flooring: Dinesen
Stairs/steel fabricator: Artisteel
Joinery: Buhr
Corten: Paneltech

Judges' comments

Located within the central Cambridge conservation area, this is an excellent example of a contemporary extension and conversion of an existing Edwardian style semi-detached townhouse, from flats back to a family home.

Based on a tight site with limited access this is a fine example of getting the design and specification right to overcome the challenges associated with site accessibility during a build. The Architectural Technologists have designed an excellent modern extension with an improved energy performance and innovative solutions across the board to maximise internal space and provide a flexible layout with solid detailing between the old and new.

Bringing together locally sourced materials, a lightweight green roof and frameless glazing help to enhance the light open plan living areas and the integration of interior to the natural external landscape. This is a great example of the role of Architectural Technology, taking many strands of a complex project and weaving them into a great technical solution. ■

Winner 2022

AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | SMALL TO MEDIUM

Martello Café

Words by PLAICE Design Company Ltd

The client's brief was to create an iconic café/restaurant building that would act as a focal point for the regeneration of the Felixstowe South Seafront. The site lies in close-proximity to the Martello Tower, which is a scheduled ancient monument and Grade II Listed Building.

The design of the cafe has been based around strong coastal themes to form a building with a unique aesthetic presence within this coastal landscape. The roof takes its inspiration from the shape of a clam shell, which when open, reveals a beautiful interior. The external wall and roof facades are clad in two-tone zinc shingles which act as a dynamic wrapper to the building, animating the exterior through the play of light and shade on the coloured surfaces, helping to create a real landmark on the sea front. The curtain wall glazing further adds to the vibrancy of the building by reflecting its immediate surroundings.

The overarching vision was to create a new focal point at the end of Sea Road, a 'destination building' that is well-loved and used by the 'wider community' and which ultimately acts as a positive beacon within the 'local community' to support and aid regeneration within this unfashionable Edwardian seaside town.

The project was managed in two phases by separate contractors.

- Phase 1 – Erection of the building shell. (client appointed)
- Phase 2 – Interior fit out. (tenant appointed)

The floor level of the building is set 600mm above surrounding ground levels to protect building should the sea defence wall ever be breached. On the seaward facing elevations, the raised floor level has allowed the creation of an external viewing / seating deck providing panoramic views across the bay – from the pier to the mouth of the Orwell estuary, and importantly the Napoleonic Martello Tower. For the building, a solid concrete floor was the preferred engineered option to counter any upward water pressure should the site ever flood in the future.

Plaice were employed as Lead Consultant to coordinate and lead a multi-disciplinary design team. Working closely with the Structural Engineers, it was agreed that the building structure should be designed around a steel frame to counter wind pressures on this exposed easterly location. The steel frame also lent itself to the formation of the undulating and cantilevered roof lines and splayed walls.

With the aid of 3D Modelling and BIM Workflows (Building Information Modelling), we were able to coordinate seamlessly with the steel fabricator by IFC file exchanges (Industry Foundation Classes) to ensure that our design (architectural model) met with their steel frame configuration requirements to successfully resolve any potential conflicts.

The building superstructure is predominantly insulated timber ribs set within a steel framed skeleton. Particular attention was given by the Design and Contracting Team (at shell only stage) to install suitable details at perimeter junctions to provide good levels of air tightness.

The undulating roofs drain all rainwater back to the central drum, designed to avoid the need for external pipe drops. The cylindrical design of the drum is also reflective of the form of the Martello Tower nearby, its timber cladding will slowly weather silver grey over time, whilst always appearing subservient to the main building.

The building is naturally ventilated. It is heated by an air source heat pump linked to underfloor heating set within the floor screed. The thermal mass of the screed helps to moderate the internal temperatures during summer months. The extended roof canopy also assists with controlling solar gain during the summer but allows the lower winter sun to penetrate deep into the building.

Much research was done into the specification of the curtain wall glazing, which needed to perform on a number of levels, which includes wind loading, insulation, mitigating solar gain and glare.

Our clients, East Suffolk Council, were keen to ensure this flagship building did not incorporate air conditioning, as such natural ventilation coupled with MVHR was implemented instead. The Mechanical Ventilation Heat Recovery System capitalizes on the warm stale air from the kitchen and restaurant area to pre-warm the incoming fresh air. To ensure warm air does not build up during the summer months, the MVHR unit maintains continuous air circulation.

Enhanced odour and noise filtering was incorporated within the kitchen extraction to ensure adjacent residential properties were not disturbed. Unsightly kitchen extraction ductwork was carefully designed and planned to sit behind an extended parapet wall, to conceal it from view at street level. The extended parapet also avoids the need for a man-safe system, as it provides safe maintenance access to all rooftop plant and extraction filtering.

As the building is located in an exposed easterly facing marine environment, particular attention was paid to the selection of all external materials in order to meet the required 60-year service design life.

The two tone VM Zinc Adeka tiles were chosen for their inherent properties to counter the extremes of this coastal environment – which were fully tested during the recent Storm Eunice when 70 mile / hour + winds were experienced. Other properties of zinc include resistance to corrosion, Ultra-Violet light and algae growth and is ultimately 100% recyclable.

Acoustics were carefully considered to ensure the high vaulted ceilings did not amplify restaurant chatter. Wood wool ceilings were chosen for the main restaurant space to create a comfortable and healthy restaurant environment.

Wood wool boards consist of strong wood fibres (FSC/PEFC certified), which are cement-bonded into panels. The panels benefit from excellent reverberation cancelling properties, very good inherent relative humidity properties, zero surface spread of flame, low particle (VOC) emissions, are Allergy Friendly and 100% recyclable with minimal carbon footprint.

On completion, the final as-built EPC and SBEM tests achieved an Energy Efficiency A Rating of 9, with a Building Emission rate of 33.4 kgCO2/m2 per year, significantly surpassing the benchmark score of 17 for a similar sized new build.

Architect: Plaice Design Company Ltd
Landscape Architect: Plaice Design Company Ltd
Structural Engineer: Superstructures
Main Contractor (shell): Barnes Construction
Main Contractor (fitout): GS Contracts
Contract value: £1.5 million

Judges' comments

The brief for this commercial project was to create an iconic café/restaurant building to act as a focal point for the regeneration of Felixstowe's south seafront. The Chartered Architectural Technologists have skilfully combined technical and aesthetic design solutions creating a stunning new café with a unique and striking presence within this coastal landscape.

The use of BIM technology assisted the design team to resolve complex construction detailing related to the striking roof structure and integrated services. Combined with sustainable innovative ventilation and heating design, they achieved the client's brief through a combination of natural and technological methods. A great choice of materials for both the location and performance combine to provide a robust construction with credible eco-credentials.

This is a fantastic demonstration of how Architectural Technology has been utilised throughout the design and construction process, making it a truly outstanding winner for the Award for Excellence in Architectural Technology, small to medium projects category.

Finalists

AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | SMALL TO MEDIUM

Ceres, Rush, North County Dublin

Patricia Mulvey MCIAT - Brackfield Consulting

The client commissioned a new build family dwelling in the side garden of their existing home facing onto the south beach in Rush in North County Dublin. The brief was to design a 'wow house' - large but compact, innovative and efficient, modern family home. The innovatively designed two storey square shaped dwelling follows the principles of Passive House design. The key was to provide a nearly zero energy dwelling, highly insulated and efficient in terms of heat demand, while minimising overheating and ensuring comfortable indoor air conditions throughout the year by installed mechanical ventilation. The creative layout design takes full advantage of the south facing aspect and views to the rear overlooking the Irish Sea and Lambay Island.

Devon House

16A ARCHITECTURE

16A Architecture

Purchased as an existing property, from their parents, the house had been the family home since 1989. With deep emotional ties to the house and garden, the brief was to look at solutions to extend and renovate the house. It quickly became evident that most of the house was in such a poor state of repair that renovation in the older parts of the structure would not be possible, and not be economical. The existing fabric and structural issues combined with the client's requirements for an energy efficient home with a more open plan layout led towards a replacement dwelling. The solution to provide a new home that reflected both the feeling of the existing and incorporated some of the materials into the new. The clients fully embraced the idea and agreed on a revised brief based on a reclamation and re-incarnation of the existing property.

Little Dragons Day Nursery

SPATIAL FUTURE ARCHITECTS

Spatial Future Architects Ltd

The Little Dragons Day Nursery is a refurbishment of an existing church into a children's nursery. The existing structure contained both unique architectural features and failing elements, far past their useful life. The project created interactive spaces within the existing structure that allowed for a free-flowing learning environment for children ranging from babies to pre-schoolers, each with their own needs and requirements. With the building located within a conservation area, alterations to the external structure were kept to an absolute minimum. It was decided to install a mezzanine floor within the existing structure, a 'building within a building'. This allowed for the creation of the desired floor space and needed to work with the existing architectural features of the building, such as decorative cornicing and stain glass windows. At the same time, meeting strict Building Regulations on fire protection and thermal performance.

AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | SMALL TO MEDIUM

Meet the Judges

Chair: Justin Kelly FCIAT

Justin is a partner at BPTW, an award winning CIAT Chartered Practice which is design-led with over 125 Architectural Technologists and architects with studios in London and the Midlands.

He acts as the lead Architectural Technologist at BPTW and has been an examiner at the Architects Registration Board, Secretary at the RIBA South East London Society of Architects (SELSA) Branch and is currently a Professional Interview Assessor for CIAT.

Having previously lived and worked in Rotterdam, Justin has gained experience on various residential led developments in both Rotterdam and Amsterdam. He completed a Diploma in Sustainable Urban Design from the International Institute for the Urban Environment in Delft, the Netherlands.

Dr Gihan Badi FCIAT

The founder of GB Atelier, CIAT Chartered Practice for architectural services, with more than 20 years of experience in the built environment sector and academia in both the United Kingdom and the Middle East. As sole practitioner, Gihan has gained experience on various residential and commercial led developments in both the UK and the Republic of Ireland.

Gihan is a Fellow Member of CIAT and a Chartered Architectural Technologist, also she is a Fellow Member of Higher Education Academy with Doctor of Philosophy degree in Planning, Housing and Human Geography.

In addition, Gihan is an Assessor for CIAT and has been a member of the Yorkshire Regional Committee for many years, and she is actively involved with her professional institute at local and national levels. Gihan was previously the Regional CPD officer (2014-17) and the Regional Committee Chair (2017-19). In 2017, Gihan was a Finalist as Best Architectural Technologist in the European Women in Construction and Engineering.

Dan Clements MCIAT, Vice-President Practice

Dan is a Chartered Architectural Technologist with many years' experience in the design and detailing of domestic and non-domestic properties. With a strong design background, Dan has built a reputation for providing creative solutions to a variety of briefs.

Dan set up CIAT Chartered Practice Aditus Architectural Services Ltd in 2015 to specialise in both private and commercial architecture. As a former CDM-c, Dan is fully qualified to act as 'principal designer' under the 2015 CDM regulations. He recently acted as principal designer on the high-profile demolition of the Central Plaza Hotel in Carlisle, working for Carlisle City Council.

Dan is the current Vice-President Practice for CIAT and sits on the Institute's Executive Board.

Mark Kennett PPCIAT FCIAT CEnv CIAT-Accredited Conservationist

Mark is a partner in a private practice based in Harrogate, North Yorkshire, Wilson Kennett Partnership, and has a wide knowledge and experience in the discipline of Architectural Technology, specialising in such areas as conservation and sustainability. Mark is qualified as a Chartered Environmentalist and as a CIAT—Accredited Conservationist.

As a Member of the Chartered Institute of Architectural Technologists since 1980, Mark has been actively involved with numerous Committees and Taskforces relating to membership, education and technical issues. Mark has also been a consultant on several books related to the industry and has spoken at numerous seminars across the UK.

Hadeel Saadoon FCIAT

Hadeel is a Chartered Architectural Technologist and Fellow Member of CIAT. She works as a Building Information Manager for Coventry University Estates Digital Services team, leading the implementation of BIM and digital technologies in building maintenance, development and refurbishment projects, construction of new campus buildings and student accommodation projects.

Hadeel also manages the creation of the Coventry University digital campus and the retrospective modelling of existing buildings and also the establishment of the Common Data Environment for the university group.

Alongside being an ambassador for Women in Construction, she is also the Chair for BIM4Estates group, UK BIM Alliance communities lead, Regional lead for Women in BIM, and Regional Co-Chair for the West Midlands Region.

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Highly Commended 2022

AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | LARGE TO MEGA

Troutbeck Housing Development

Words by Cassidy+Ashton Group Ltd

The Ministry of Housing, Communities and Local Government produce an Index of Multiple Deprivation (IMD) which is the official measure of relative deprivation in England, and it identified Blackpool as being one of the most deprived areas in the country. The health of people in Blackpool is generally worse than the England average and around 30% of children live in low-income families.

Blackpool Council identified in their council housing strategy that their legacy of poor-quality homes in the social rented sector and a shortage of good quality affordable housing across the borough is a critical driver of poor health, to a greater extent than other deprived towns. As a result, a program of improvement is underway. Pulling down blocks of flats and building high-quality well-designed individual homes for affordable rent.

Through a competitive bidding exercise, Cassidy Ashton was appointed by the Client, Blackpool Council, to demolish 81 high-density low-rise homes in block clusters and design 75 new individual affordable rent dwellings. Their occupancy accommodates a mix of 1, 2- and 3-bedroom homes, some of which are accessible houses designed to enable independent living for residents with disabilities. The 2.3ha development is managed by a local housing association, Blackpool Coastal Housing.

Blackpool Council said the redevelopment was being done “in order to address the unpopularity and poor condition of the existing flats, meet the need for quality family homes for social rent and help to improve the neighbourhood environment”.

The site is located on the edge of Blackpool in a key gateway position and forms a grand entrance to the seaside resort as you exit the motorway. The site was formerly a public green space on the edge of a large council estate including blocks of flats dating back to the 1960’s, and features a local landmark, a Grade II listed windmill.

The original flats were no longer fit for purpose and consequently pulled down to make room for the new modern development of roughly the same number of residences but spread over a larger area. The project also aimed to enhance the existing public green space. A large section of site includes soft landscaping for the purposes of recreation and community engagement.

Particular housing units, namely that of the 2-bedroom dwelling, cater for up to 4 individuals. These units have been designed to allow for greater flexibility for a range of end users. The ground floor entrance and wet room accommodates level access and disabled friendly inclusion,

complying to the standard of M4(2) (Approved Document M). Each unit conforms to the technical housing standards spatially, accommodating a range of rooms in the form of a general living space, bathroom, storage and bedrooms.

Overlooking distances did not conform to the general standards set by the Local Plan, allowing for tighter spacing than would normally be required. Blackpool council took a pragmatic approach which allowed the higher density of housing to fit on the site without compromising its key goal to ensure each home maintained its own individual space that the owner could take pride in etc. This did not compromise the quality of public and private spaces. The previous layout accommodated little in the way of private external spaces for each unit. The new scheme has been designed to allow for each unit to have their own external space i.e., gardens and patio spaces. This provides a greater sense of home ownership for the end user.

Creating an urban environment not dominated by parked cars was important in the design. To achieve this there are many of the terraces where cars are parked to a discreet rear facing area and covered car ports provided. This allows the house frontages in many instances to have no road or parking spaces in front of them. This also provides a great safe greenspace for people to play and relax in completely avoiding all contact with vehicles.

As opposed to the original flats which suffered from anti-social behaviour, the new design provides for a more 'home ownership' and 'community social responsibility' feel. This has been achieved by being a strictly low-rise development which allows for greater natural surveillance of external spaces. The open spaces created are now safe places for children to play and relax.

Parts of the scheme that are situated close to the neighbouring road had to consider acoustics for the end user. Sound-bloc plasterboard was used to minimise the severity of acoustic transmission to internal rooms.

Ecology enhancement of the site was an important consideration. Bat and bird boxes have been integrated into the building fabric at the gable ends to each block to enhance and sustain wildlife within the local area.

The design of the internal spaces within each dwelling were designed to be filled with light and feel larger on the inside than they appear from the outside. This was achieved with the incorporation of roof lights with semi- vaulted ceilings and resulted in a flexible and adaptable open living environment.

Rooflights were also used in a novel way to act as traditional vertical windows in the vertical wrap around roof tile cladding. This allowed better waterproofing workmanship and air tightness detailing than installing a traditional window into that material.

Creating an urban environment not dominated by parked cars was important in the design

Private balconies were provided to give a luxury feel. These overlook public greenspaces allow a pleasant outlook and natural passive surveillance of the greenspaces to discourage anti-social behaviour. These balconies include a promenade deck of concrete paving flats on pedestals over a single ply membrane roof finish.

The houses are constructed from conventional timber frame open panel construction and trussed rafters. This brought advantages to the project of speed of construction, tighter manufacturing tolerances and off-site quality control, and numerous environmental benefits of the house's lifecycle due to the use of sustainable timber and its natural storage of sequestered carbon. Timber construction requires fewer manufacturing processes than that of traditional block construction, minimising energy consumption.

The design of the houses adopts a contemporary aesthetic with striking bold contrasting colours and materials. The immediate thing that hits the eye is the monochromatic roof scape with its novel black and grey randomised pattern roof tiles wrapped over the roof and continuing down the walls. The brickwork is the second dominant material, with contrasting plots of black brick and textured grey / brown brick. Flat roof projecting Bay windows punctuate these dominant materials with either smooth black brick, Bright fibre cement rainscreen cladding or the grey brick. The dwellings are all differing heights which has a pleasing overall effect of breaking up the roofline.

The innovative external aesthetic of the 'wrap around' roof has been achieved through interlocking concrete tiles used on both roof and wall, with a bespoke fabricated eaves tile to make the transition. The tiles were chosen with a smooth finish in mock double-tile format to

replicate a smaller format tiled roof. The smooth finished concrete maximises durability and reduces maintenance by being self-cleansing. It's dense make up contributes to the fire resistance and acoustic resistance of the façade and roof.

Bespoke fabricated eaves tiles were used to make the transition between the vertical cladding and roof plane. All roof pitches were kept consistent to enable a single tile to be fabricated for speed of construction and manufacturing.

Options were considered for methods of draining the roof and achieving the wrap around roof tile cladding. A sheer vertical wall cladding face was selected for aesthetic reasons and a deep aluminium box gutter was preferred to maintain a contemporary appearance. Testing of a physical 1:1 mock-up was conducted at the roof tile manufacturers premises to determine how this arrangement would perform in heavy and light rainfall. Alternative tile materials were considered and alternative angles of the vertical tiles prior to settling on the chosen design.

High level external walls above the lower roof forms adopted a brick slip rain screen cladding using matching brick to the main body of the walls for ease of production, construction and installation on site. This prevented the need for heavy duty brickwork which undoubtedly would have resulted in additional timber structure to support the masonry.

An inclusive, functional and adaptable design with strong technical detailing, consideration to context and striking aesthetic

The bay windows feature two styles; a contrasting Equitone fibre cement rainscreen cladding and a solid contrasting brickwork one which draws away from the prevailing Michelmersh mix brickwork. This was chosen to visually emphasise the verticality of the building and also provide greater articulation and interest within the elevation.

The choice of Crest Planum Duo smooth finish concrete tiles, Equitone fibre cement rainscreen cladding and brickwork provides superior resistance to fire spread and combustibility. The Equitone cladding panels are also 100% recyclable, reducing waste consumption, carbon emissions and energy consumption during the manufacturing process. This material selection is advantageous as it provides for greater thermal and acoustic ratings than that of other materials.

Judges' comments

Troutbeck is a new residential development in Blackpool using conventional timber frame open panel construction and trussed rafters – an exemplary and well considered use of materials addressing sustainability and performance.

An inclusive, functional and adaptable design with strong technical detailing, consideration to context and striking aesthetic. There is strong evidence in relation to the technical design and detailing associated with buildability and assembly. A great example of Architectural Technology in residential design. ■

Winner 2022

AWARD FOR EXCELLENCE IN ARCHITECTURAL TECHNOLOGY | LARGE TO MEGA

St Sidwell's Point

Words by Gale & Snowden Architects Ltd

Starting as a research project in 2012, Gale & Snowden helped to obtain funding from the Technology Strategy Board (TSB) to assess the impact of future climate on a leisure centre proposed across various locations in the city of Exeter.

The design team were to provide a low-energy Passivhaus design that incorporated healthy building principles, and Gale & Snowden's responsibilities included computer modelling and design for future climate change adaptation as well as 'architects for the envelope of the building'.

Gale & Snowden Architects joined Space & Place Architects (as lead designer) and Arup (as engineers), which integrated a design team for architecture, structural engineering and mechanical, electrical and public health engineering. At this point you might be thinking 'two designers for architecture?' but imagine a project that brings together the best in each of their fields. That is the team we wanted to build.

The sustainability outcomes were a bespoke set of environmental factors drawn from the TSB research into mitigating the impacts of future climate change and the Passivhaus Institute's (PHI) research into optimising low-energy passive design principles for swimming pool facilities.

The project brief for the facility included main and learner pools with moveable floors, changing village with fully equipped accessible changing rooms, a confidence water pool, a 100-spectator seating area, premium health spa, 150 station fitness gym, changing rooms, spin studio, café, crèche and soft play area.

A concept for swimming pools

Where the challenge was to achieve low in-use energy on a tightly constrained city centre site, the solution was to split the building into two interlinking forms, each accommodating 'wet' and 'dry' areas. Adjacent internal temperature zones are arranged to reduce energy losses between internal zones, and this is one of many passive design principles applied to reduce annual heating demand without increasing capital expenditure.

The total energy consumption of the building is an applaudable 375kWh/m2 per year. Other passive design principles included:

- Optimised envelope heat loss area
- Solar orientation of heated and cooled spaces
- Exceptionally airtight envelope
- Optimised thermal bridges at all junctions between assemblies
- Very high levels of insulation compared to standard buildings
- Heat recovery and reduced electrical energy demand for ventilation

Not to be mistaken for the 'classic' Passivhaus standard, the project uses the PHI's concept for swimming pool halls where higher humidity at pool level reduces latent heat loss from evaporation. The higher humidity levels are enabled by a high-performance building envelope, reducing the risk of internal surface condensation and mould growth, and in turn, allowing ventilation rates and energy losses to be reduced. At St Sidwell's Point, this new concept for swimming pools has been combined with the use of simultaneous heating and cooling air source heat pumps, meaning that the heat rejected from the cooling areas can be used to offset heat loads in the pool areas. These features are what makes the Passivhaus methodology a perfect fit for pool halls.

Energy is further reduced by using a microfiltration system. With microfiltration, pool water is forced through a semi-permeable ceramic membrane that filters the water to a finer grade than conventional sand filtration systems, removing unwanted particles and bacteria. Together, these measures result in one of the most sustainable leisure centres ever constructed. Along with 70% saving on energy costs, the scheme results in 50% reduction in water use, outstanding internal water quality, excellent daylighting levels, healthy internal environments, and reduced maintenance costs.

This new concept for swimming pools has been combined with the use of simultaneous heating and cooling air source heat pumps

As if these features were not reason enough to dash to the shops for a new pair of speedos, the building has also been modelled to withstand predicted changes in climate conditions up to the year 2080. This means that the heated and cooled internal zones will be comfortable to use throughout the building's lifespan.

Developing a design

Through a series of design checks and re-assessments, the Passivhaus Institute modelled and defined the performance targets for the building using their own adapted set of Passivhaus Planning Package (PHPP) spreadsheets.

The certification process was specifically aimed at reducing the performance gap seen in buildings using standard methods of energy compliance in the UK. A post occupancy evaluation is being carried out to monitor the building during the first year of its operation, but the

predicted energy demands are as follows:

- Space heating demand: 60 kWh/m2TFA/year
- Equivalent useful cooling demand: 22 kWh/m2TFA/year
- Pool water heating demand: 73 kWh/m2TFA/year
- Domestic hot water heating demand: 56 kWh/m2TFA/year
- Total electricity demand: 120 kWh/m2TFA/year

To achieve these targets, mechanical systems make use of greater than 80% efficiency heat recovery units, less than 5kWh/m2/year heating and DHW distribution losses, high coefficients of performance on heat pumps and greater than 90% gas boiler efficiency. Opaque envelope U-values are between 0.1 and 0.14W/m2K, transparent element u-values are typically less than 1.2 W/m2K and psi-values are typically less than 0.01W/mK. Triple glazing with U-values of 0.59W/m2K are used throughout. The air permeability of the envelope has been verified at 0.3m3/hr/m2.

A marvel of Architectural Technology

During technical design stages, options were explored detail-by-detail to consider the implications of the project's environmental factors on buildability and sequencing. For example, the installation of the louvred panels needed to be airtight, weathertight, vapour-tight, and have good thermal continuity between the duct and the wall. Yet still, the assembly needed to be constructed internally and with limited working room. That particular detail was only resolved through a series of online and face-to-face design sessions between the contractor and design team.

As you enter each of the two pool halls, you are greeted by the giant glue-laminated timber trussed beams spanning the length of each pool hall and supporting the cross-laminated timber roofs above. Mid-afternoon, full-height triple-glazed mullion-framed curtain walls allow light to pour through the south façade whilst also supporting internal shading systems that reduce the amount of sunlight reflected from the pools surface. An in-situ concrete primary frame, substructure and shear walls provide a robust structure and convenient airtightness layer throughout much of the building envelope, and a composite sheathing board and fully-adhered vapour-permeable membrane allowed infill areas of external wall to be constructed without the impact of wet trades on the construction programme. The completed building is a marvel of Architectural Technology.

Constructing the team
No project is without its challenges, and no less this project than any other. On top of the usual design clashes, sequencing, safety, logistics and resourcing challenges, the contractors needed to deal with the COVID-19 Pandemic and Brexit! At times, this meant labour shortages from workers travelling back to their home country, design changes due to product availability and transport delays. At one point our iconic glue-laminated beams were stuck on the other side of the English Channel!

Despite all of this, contractors provided notable input to managing the risk of airtightness, including the construction of a series of on-site mock-up, phased and sectional air tests. Lessons were learnt from this process where large, super-airtight commercial buildings can be designed to make it easier to air test buildings without impacting the construction programme.

Insulation fixings were also a point of consideration where multiple layers of insulation resulted in significantly more fixings. The additional fixings had the potential to increase infiltration heat losses and transmission heat losses, the risk of which was managed through specific fixing details and technical submittals for every type of fixing in the façade.

The input and teamwork of the whole project team has resulted a safe, healthy and environmentally sensitive facility available for use by the whole community. Exeter's new leisure centre makes a statement to local authorities throughout the UK that this level of investment in the health and wellbeing of the community is the way to bring communities closer together and tackle physical inactivity.

Value of the contract
Construction cost: £35m
Project cost: £44m

Judges' comments
As the UK's first Passivhaus-certified leisure centre, St Sidwell's Point in Devon is a high performing building, both in terms of energy consumption/thermal envelope and incorporating building biology best practice in healthy building design. An example of collaborative working to achieve an exemplary project, putting accessibility high on the priority list.

The Chartered Architectural Technologist has skillfully used technology to achieve a sustainable building with attention material specification including triple glazed windows and large glue-laminated timber trussed beams. The Judges were particularly struck by the strong emphasis put on the technical detailing to meet such stringent requirements. The louvred panels design was a great solution – air, weather and vapour tight – providing excellent thermal continuity between the external wall and ductwork.

The use of technology to achieve super-energy-efficient Architectural Technology uniquely combined with all the other aspects of this project, demonstrate superb technical excellence and as such is a truly outstanding winner of the Award for Excellence in Architectural Technology in the large to mega category.

The Chartered Architectural Technologist has skillfully used technology to achieve a sustainable building


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Honorary Officer elections 2023: your opportunity to influence your profession and discipline

Words by Francesca Berriman MBE, Chief Executive

The election process and how you could become influential within your Institute, shape its future and that of your profession.

For the effective operation for any professional body, it is essential that it elects positions from amongst its membership to allow it to function within its Charter. These positions are open to Chartered Architectural Technologists who are invited to give their enthusiasm, experience, strategic leadership, skills and time in a voluntary capacity to the work of the Institute set within the Strategic and Corporate Plans, as approved by Council. Contributing in such a capacity is two-way and Chartered Architectural Technologists who have been involved have benefited and learnt from their experiences.

Within the Institute's governance, there are a number of core roles collectively known as the Honorary Officer positions. These are the President, Honorary Secretary, Honorary Treasurer, Vice-President Education, Vice-President Practice and Vice-President Technical. These are all undertaken by Chartered Architectural Technologists in a voluntary capacity other than expenses which are paid for by the Institute.

For 2023, there are three positions for election which are now open for nominations:

1. Honorary Secretary

Together with the President and Chief Executive, the Honorary Secretary is responsible for ensuring the smooth running of the Council, Executive Board, AGM and Conduct Committee in line with the Laws of the Institute (the Charter, the Bye-laws, the Regulations and Code of Conduct and other forms of regulatory provision made by the Institute).

Council meets twice a year and the Executive Board four times, twice in conjunction with Council.

Working with the Chair of the Conduct Committee, the Honorary Secretary is required to attend these meetings which are held at least four times a year.

Members who undertake this position must possess strong analytical skills and the ability to make informed decisions and considered judgments. The ability to interpret and understand information and evidence is essential, as is good communication and presentation skills. For Conduct, the Member must be prepared to read, at times, a considerable amount of case papers.

2. Vice-President Education

The Vice-President Education works with the Education and Membership Departments on issues such as the development, maintenance and promotion of educational and membership standards, qualification development, Accreditation and membership recruitment, retention and progression.

The Vice-President Education is invited to attend all meetings administered by the Education and Membership Departments and will represent the Institute at relevant external meetings and events.

A Member who undertakes this position must have a very strong academic background with considerable experience and knowledge of higher and/or further education and research, as well as a good understanding of educational establishments' relationships with professional institutes. They must be prepared to confidently represent and promote the Institute externally, particularly in regard to education and membership.

3. Vice-President Practice

The Vice-President Practice promotes the Institute's practice standards and policies for members practising the discipline of Architectural Technology. As such, the Vice-President Practice works closely with the Vice-President Technical, Practice & Technical Director and Practice Department in overseeing the work of the relevant Taskforces and working groups. These groups cover topics on liability, practice and technical documents, building regulations and legislative issues.

The Vice-President Practice may be involved directly or indirectly with these groups but reports to the Council and Executive Board on the work of these groups and their output and that of the Practice Department.

In carrying out these activities the Vice-President Practice:

- represents the members externally relating to industry issues, lobbying for change or improvement and lobbying and promoting on behalf of the discipline;
- ensures the necessary documentation is produced for the membership's benefit on changes in legislation or regulations; and
- ensures the appropriate guidance is available to assist members in implementing and complying with legislation and regulations in their work and complying with the Institute's policies and Code of Conduct.

A Member who undertakes this position must be a practising Chartered Architectural Technologist and have knowledge of the contractual side with an understanding

of legislation and regulations. They must also be confident and able to represent the discipline at the highest level which includes Government.

All candidates must be able to undertake business via email or other electronic mediums.

What do these positions involve?

With each of these positions, you will become a Trustee of CIAT and a member of the Executive Board, which is responsible for the implementation of the Strategic and Corporate Plans, found on our website. The Board makes guidelines for the conduct of business of the Institute, in line with the rules of the Institute and policy. You will become a member of Council, which is the Electoral College and Strategic Forum for the Institute. You will be expected to contribute to the policies and future strategic development of the Institute.

What does being a Trustee involve?

Trustees have an overall legal duty to the Institute and are the individuals who take decisions. Trustees have specific duties and operate within the rules of the Institute. Trustees work collectively as the Executive Board and once a decision has been collectively made – all Trustees are bound to support that decision. A Trustee's primary duty is to the Institute and its Charter under which it is established, as such Trustees must act with integrity and adopt the values which helps CIAT achieves its strategic aims.

What are the time commitments to these roles?

You should be looking to commit up to five hours a week (approximately) but this will depend on the nature of the work, meetings, providing views and advice on documents, the time of year and external representation on behalf the Institute that may be necessary. It is essential you are proactive and reactive dependent on the project work required. With all the positions, you will be working closely with a staff Director at Central Office, and their departmental team and be expected to respond to queries speedily at times; this could be within a couple of hours. There will be specific meetings or working groups that you may need to participate in and possibly chair.

As an Honorary Officer, you will be expected to attend two Council meetings (normally on a Saturday in March and September) and a minimum of four Executive Board meetings (two of which run in tandem with the Council meetings) as well as the AGM (normally in November) and the AT Awards event (October). The positions, excluding President Elect/President, are two-year terms, which become effective from the close of the 2022 AGM in November to the close of the 2024 AGM.

Representing the Institute and discipline

As representatives of the Institute, these positions require you to attend events and meetings on behalf of the Institute, for example, Construction Industry Council meetings, Award presentations, university events, or Government led steering groups, presenting at conferences etc. There will be specialist meetings which you will either have to attend/chair or contribute to, and you will need to report back to Central Office on these. The staff Director will work with you to ensure that you are properly briefed and prepared for these meetings where you will be expected to speak on behalf of CIAT and the discipline of Architectural Technology.

Social media

You would work with the Communications Department in relation to social media engagement.

What do I benefit from taking on a position?

You will have the chance to shape the future of your discipline, profession and the Institute at a strategic level. If you have ever wondered why something has or has not been done then now is your chance to do something positive about it. You also get to network extensively with peers and fellow professionals, gain a greater insight behind the scenes at Institute, Governments and sister institute levels and it contributes to your CPD obligations.

How can I be nominated?

To be nominated for any of the positions, a fellow Chartered Architectural Technologist must nominate you in writing to the Returning Officer, who is the Chief Executive. Any Chartered Architectural Technologist is eligible to propose a candidate, although no nomination is permitted without obtaining the prior consent of the nominee. Any Chartered Architectural Technologist can stand for any position in these elections. No prior experience is required of the Institute – just a passion for Architectural Technology and the Institute.

What happens once I have been nominated?

Once a nomination has been received, you are then asked to formally accept or reject the nomination. You will then be asked to supply a manifesto. Once all the manifestos have been received, they will be issued to the Regional/Centre Committees for their review, consideration and action. It is then your responsibility to actively organise and carry out your election campaign (at your own cost) to all members and affiliates, this will be via the Communications Department and direct liaison with Regional and Centre Committees. Your campaign can be by a variety of mediums which is for you to choose. We provide you with the contact details of the Regional/ Centre Committees.

You will need to prepare a full manifesto for publication and distribution via the Institute's media channels; details of what we would be looking for in the manifesto will be included in the election section of the website and information pack. It will also be featured in the spring issue of AT Journal.

We will provide further clarification on the election process and information required. Over the election process, and the lead up to the elections in September, we will be issuing some election special ealerts providing reminders and updates together with profiles of the candidates standing for the positions etc.

If I stand how do I promote my candidacy?

There are a number of ways in which you can put yourself in front of the members and affiliates during your election campaign.

There is the traditional manifesto which will outline your policies, thoughts and aspirations for both the role you are nominated for and the Institute. This should not be a CV but a formal written document which grasps your key objectives and aims. Alongside this, you can create a profile which showcases you as a person, captures your personality and strengths and puts across the real you to people who do not know you and want to know more about the person seeking election.

In this technological and social media focused world, you can create Twitter or Facebook accounts, videos, podcasts, blogs or a series of short films which support your manifesto and profile. You can get your message across simply and they can all be easily accessed.

You could arrange for a Q&A with members and affiliates online or at a location and venue that is accessible and could have visits to Regional and Centre Committees and meet with Council, those who will be voting on the day. There are a number of different mechanisms which will be covered in the information pack.

What is the voting procedure?

- Regional/Centre Committees are encouraged to meet and discuss their preferred candidate, in an open forum which takes into account feedback from the members and affiliates in the Region/Centre.
- It may be that you wish to proactively engage with the Regional/Centre Committees to present your manifesto and respond to questions.
- Regional/Centre Committees advise their Councillor of their preferred candidate.
- The Councillor is expected to vote in accordance with their Regional/Centre Committee's decision; however there may be exceptions where they may change their vote as per their Committee's instructions. These could be based upon the candidate's response at the autumn Council meeting or other factors, for example, if the candidate withdraws from the election at very short notice that would not allow a Councillor reasonable time to refer back to their Regional/Centre Committee.

How is the vote taken?

Elections are held at the autumn Council meeting:

- All candidates are invited to attend the autumn Council meeting to respond to questions brought by a Councillor from their Regional/Centre Committee or to debate a particular issue in relation to their manifesto.
- Council confirms and agrees the method of the election – which has traditionally been by secret ballot.
- Councillors represent their Region/Centre – either using their agreed Committee's vote or changing their vote as per their Committee's instructions based upon the candidate's presentation or other factors.
- Honorary Officer members of Council have a free vote according to their preference (as Trustee) and considering the best interests of the Institute and its Strategic Plan.
- Council votes on the candidate and/or candidates and the election takes place.
- Council policy is that a candidate who is also a serving member on Council may not vote if there are other Candidates standing who do not sit on Council, this includes Honorary officers.
- Council policy is that Regions/Centres do not have the right to send a proxy vote if their Councillor is standing for a position.
- It is the Councillor who carries the vote, or their deputy, in their absence. A serving Honorary Officer who is standing against a candidate who is not a member of Council forfeits their vote. This ensures equity and fairness.
- The President, as Chair, has the casting vote if there is a tie.
- The elected Chartered Architectural Technologist assumes the Officer position from the close of that year's AGM (normally in November), unless an Officer resigns from their position early, in which case the assumption is either immediate or from the date of resignation if later.
- The results are then reported to the members and affiliates via the weekly ebulletin, AT Weekly and Regional/Centre Committee.

When would I assume the position if I were elected?

All three positions take effect from the close of the 2023 AGM in November 2023.

Key dates summary

- Call for nominations close
  12 December 2022
- Acceptances (or rejections)
  21 December 2022
- Manifestos/profile received
  3 February 2023
- Issue of candidates and their manifestos to all members via an ealert/update of election section of the website
  27 February 2023
- Issue of candidates and their manifestos to Regional/Centre Committees
  27 February 2023
- Presentation at Council
  11 March 2023
- Campaigning by candidates
  27 February – 8 September 2023 inclusive
- Election ealerts and updates on the website
  27 February – 8 September 2023 inclusive
- Election at Council
  9 September 2023
- Candidates advised if not in attendance at Council
- Ealert announcing the election results
  11 September 2023
- Assumption of position
  November 2023 close of 2023 AGM

Further information

For further information or clarification contact Adam Endacott, Editor, a.endacott@ciat.global

futurebuild

07 - 09 March 2023
ExCeL, London

WHAT WILL YOU TAKE A STAND FOR?

Build a better future for the built environment

Futurebuild provides the stage for inspiring ideas, innovative solutions & knowledge sharing to drive sustainable construction and help us reach our goal of net zero. The exhibition brings together the entire supply chain to showcase, debate and understand the advancements in sustainable construction and the emerging technologies that will make net zero possible.

Futurebuild is taking a stand for a better built environment and is urging companies and professionals throughout the construction supply chain to make a similar commitment by 'taking a stand' on an issue they passionately believe will help propel the industry towards a more sustainable future.
Join us in taking a stand.

SCAN HERE

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www.futurebuild.co.uk

by EASYFAIRS

The Built Environment's Path To Net Zero: Everyone Has A Role To Play

Words by Martin Hunt, Event Director, Futurebuild

With the UK's commitment to bring all greenhouse gas emissions to net zero by 2050, Futurebuild, the 'industry stage' for building product innovation, is 'Taking a Stand' for a better built environment as part of a launch initiative for next year's event. It is also urging companies and professionals throughout the construction supply chain to make a similar commitment by 'taking a stand' on an issue they passionately believe will help propel the industry towards a more sustainable future.

Real progress on serious issues such as net zero is made when people come together. It's a shared responsibility and for those that work in the built environment, we have an even bigger responsibility to make a change. Our event's core is sustainability, but if you're equally as passionate about diversity or bridging the construction skills gap as you are innovation or improved building standards, next year's Futurebuild is your stage to showcase that commitment and take a stand.

Innovation showcase

Now in its 17th year, Futurebuild – formerly known as Ecobuild – has driven the sustainability agenda by providing a showcase for products and materials that will help architects and designers meet the challenges of net zero buildings. The majority of attendees (75%) are drawn to the event in order to discover new innovations. As well as attracting hundreds of exhibitors and thousands of decision makers, this leading built environment trade event hosts a stellar line-up of 300 distinguished industry speakers across 10 stages.

Our audience are as passionate as we are about creating a better built environment. At last year's show we hosted the Architect Climate Action Network (ACAN), which is representative of the positive activism many in the industry are calling for to address the building industry's carbon output. Therefore, whether you're a professional institution or individual that wants to take part in our speaker programme or you're looking to host a fringe event, Futurebuild is your ideal platform.

Expertly delivered content

Futurebuild 2023 will feature insight and debate from sustainability champions and puts the spotlight on innovative and inspiring products, solutions and services that will help us achieve a net-zero future. It will be curated into eight show sections and spotlights including Buildings, Digital, District Energy, Energy, Innovation Zone, Interiors, Materials, Offsite, Retrofit and Sustainable Infrastructure. The seminar sessions will be delivered by leading experts from industry partners and associations such as CIAT, The Good Homes Alliance, BRE, Passivhaus Trust, Built by Nature, IOM World and UK DEA (District Energy Association) to name but a few.

Everyone in the supply chain has a solution that can make a positive change. Futurebuild 2023 is the ultimate stage to showcase that commitment to the creation of a better building industry and achieving net zero. Therefore, our question to UK construction professionals and bodies in relation to sustainability is a simple one: 'What are you taking a stand for'?

For more information on how you or your company can become involved in Futurebuild's Take a Stand campaign, visit www.futurebuild.co.uk

For further information, please contact Lynsey Bienati at Fabrick on:
Telephone: 01622 943147
Email: lynsey.bienati@fabrick.agency

AGM 2022: Bristol

To comply with the Laws of the Institute, CIAT will be holding its Annual General Meeting on Saturday 26 November 2022.

Any member or affiliate can attend the AGM but ask that you register your attendance with the Chief Executive's Office.

The Resolutions have been emailed to all members and affiliates, if you have not received the document then please email communications@ciat.global.

For any questions please contact the Chief Executive's Office by emailing **j.rowlands@ciat.global**.

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:

019191	Ian Davison	Northern, 01
016015	Peter Gavin	Northern, 01
019763	Craig Williams	Northern, 01
025202	Joshua Hazeldine	Yorkshire, 02
032672	Yaser Kapde	Yorkshire, 02
027960	Joshua Nalus	Yorkshire, 02
021299	Georgina Reid	Yorkshire, 02
024861	David Taylor	Yorkshire, 02
021694	Marc Coverdale	North West, 03
029036	Matthew Doyle	North West, 03
030625	Nicholas Higson	North West, 03
026273	Stephen Jones	North West, 03
035209	Steven Nichol	North West, 03
031055	Anthony Bowe	East Midlands, 04
015054	John Adams	West Midlands, 05
030029	Nadia Amietszajew	West Midlands, 05
023362	Irfan Farooq	West Midlands, 05
030274	Diana Martinez Ramos	West Midlands, 05
034283	Thomas Morgan	West Midlands, 05
035205	Matthew Parsons	West Midlands, 05
025007	Alexander Watkiss	West Midlands, 05
035212	Robert Wilson-Styles	West Midlands, 05
025276	Gareth Evans	Wessex, 06
029977	Daniel Miles	Wessex, 06
036095	Oscar Dickens	East Anglia, 07
036636	Mark Rickards	East Anglia, 07
030500	Jack Swindell	East Anglia, 07
035643	Hiba Assaf	Central, 08
031161	Christopher Davis	Central, 08
035612	Wouter De Jager	Central, 08
030792	Jack Nolan	Central, 08
021447	Jamie Redman	Central, 08
036822	Spaska Bondarenko	Greater London, 09
032454	Zaeem Chaudhary	Greater London, 09
032321	Martina Markulin	Greater London, 09
026295	Carl Morris	South East, 10
020295	Matthew Ransley-Hoare	South East, 10
025514	Robert White	South East, 10
031475	Miles Pengelley	Channel Islands, 11
023451	Adam Swain	Channel Islands, 11
019343	Andrew Downer	Western, 12
032889	Craig Higlett	Western, 12
036174	Daniel Jourdain	Western, 12
036344	Alexander Palmer	Western, 12
024604	David Ryan	Western, 12
029139	Connor Milton	Scotland West, 13
026714	Bradley Mutter	Scotland West, 13

Welcome back

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

027489	Veronica Sikombe	Yorkshire, 02
031513	Jason Singh	South East, 10

Fellow Members

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

019245	Nicholas Chapman	West Midlands, 05
009602	Peter Durrant	East Anglia, 07
027860	Changfeng Fu	Greater London, 09
019011	Andre Bisson	Channel Islands, 11
022301	Giles Boon	Western, 12
007364	Andrew Hole	Wales, 16
020738	Gerald Lockard	Australasia, C3
012078	Mark Scott-Jeffs	Australasia, C3
023717	Mark Vaughan	Middle East & Africa, C7

In memoriam

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

003280	Keith Belton	Northern, 01
010251	Stephen Fisher	Yorkshire, 02
007671	Keith Fitzsimmons	West Midlands, 05
003910	Michael Couzens	Wessex, 06
001216	Augustus Ives	East Anglia, 07
012433	Stuart Martin	Scotland East, 14
008628	Robert McKee	Republic of Ireland, C2

Obituary

Robert McKee (1943-2022)

The Institute was saddened to learn of the death of Robert McKee MCIAT in January 2022. A founding member of the Republic of Ireland Centre, Robert was Centre Councillor from 1987-89 as well as being a member of the Examinations Board from 1987-90. He worked in the City Architect's Department of Dublin Corporation from 1963 until retirement.

"Robert McKee MCIAT was a stalwart of the Institute and of the original Irish Institute of Architectural and Associated Technology (IAAT). He was deeply involved in the proposals for and eventual merger of the IAAT with SAAT, as it then was (subsequently BIAT and now CIAT). He was dedicated to the profession of Architectural Technology and worked tirelessly to achieve the proper recognition of the profession in Ireland and worldwide. He will be remembered with great affection by me and the members of the Republic of Ireland Centre who knew him".

Denise Germaine MCIAT

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