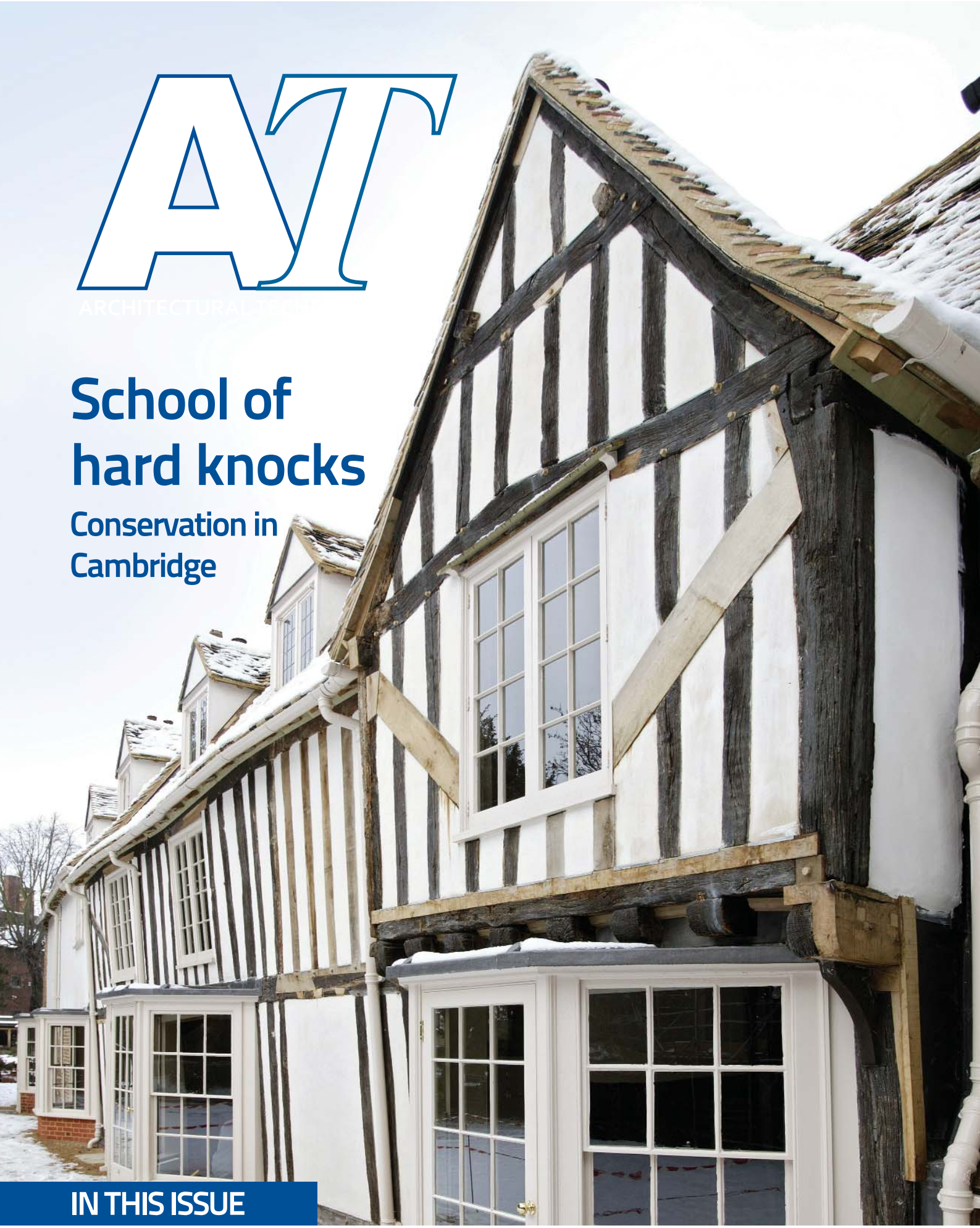


AT

ARCHITECTURAL TECHNOLOGY

School of hard knocks

Conservation in Cambridge

IN THIS ISSUE

CIAT hat trick
Three winning articles from Chartered Members

Student success
End of term shows

Green screen
BIM and the eco-footprint

The magazine of the Chartered Institute of Architectural Technologists

Issue 107 Autumn 2013 ISSN 1361-326X £5.00

AT magazine

AT magazine is published by
The Chartered Instute of Architectural Technologists
397 City Road London
EC1V 1NH UK
Tel. +44(0)20 7278 2206
Fax. +44(0)20 7837 3194
info@ciat.org.uk
www.ciat.org.uk

ISSN 1361-326X

Chief Executive
Francesca Berriman MBE

Editor
Hugh Morrison
editorial@ciat.org.uk

Advertising
advertising@ciat.org.uk

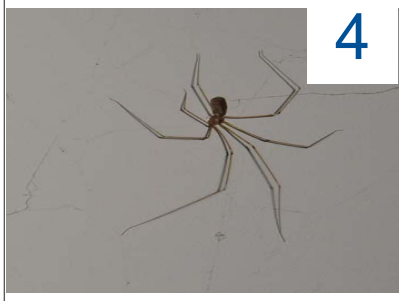
Copy deadline for next edition
18 October for Winter edition.
Published 13 December.

Advertising deadline for next edition
Orders must be placed by 15 November.

The Chartered Institute of Architectural Technologists (CIAT) is the lead qualifying body for Architectural Technology and represents those practising and studying within the discipline. CIAT qualifies Chartered Architectural Technologists MCIAT and professionally qualified Architectural Technicians, TCIAT

Printed by
The Lavenham Press Ltd, Lavenham, Suffolk.

In this issue



Connect with us on social media

Facebook Twitter Linkedin Youtube

Linkedin www.linkedin.com/pub/chartered-institute-of-architectural-technologists
Twitter @ciatechnologist
Facebook www.facebook.com/ciatechnologist
Youtube www.youtube.com/ciatechnologist

Chartered Institute of Architectural Technologists

Editor's foreword

A CIAT winner and two runners-up in the recent CIOB article competition confirm the position of members at the forefront of the Architectural Technology discipline.

If any evidence were still required of the diverse nature of the Architectural Technology discipline, then look no further than the three award-winning features from members on pages 4-11 of this issue.

The prestigious 2013 Chartered Institute of Building (CIOB) article competition was won by Mark Wilson MCIAT. His article on insulation and those by two of the runners up, Charles Hippisley Cox MCIAT (on an unconventional approach to the problem of woodworm in old buildings) and Norman Macintosh MCIAT (on a painstakingly accurate traditional tiling project) show just how broad the scope of Architectural Technology is. From conservation to innovation, from traditional construction methods to groundbreaking new ideas, CIAT members are the leaders in the field.

This issue isn't just about established members however. On pages 28 to 33 we outline the work of students on CIAT Accredited programmes – these Architectural Technologists of the future show that the discipline has a healthy outlook. The Institute is here to offer a lead to students like these via student membership.

With this issue, all members should receive their copy of the Annual Review and Resolutions, summarising the year at CIAT, and setting out the important issues which are to be voted on by your representatives at the AGM in November. If you have not received your copy, please contact Central Office on 020 7278 2206 or email info@ciat.org.uk

The discipline has a healthy outlook

Also with this issue, UK members receive a flyer about of the RIBA's new Plan of Works. The Plan, which can be downloaded from www.ribaplanofwork.com, is the definitive UK model for the building design and construction process and one which is supported by CIAT and other industry bodies.

Regards
Hugh Morrison
Editor

Insulation: laying down the laws

Specification of insulation products is often based on their physical manifestation, perceived performance and cost. With a better understanding of how insulation works, specification will be more reliable. Mark Wilson MCIAT, Chartered Architectural Technologist, wrote the following article that won the CIOB 2013 Open Competition.

Insulation products have developed significantly with technological advances. Legislation has acted as the catalyst for development, from the basic requirements under the Building Regulations Part L, to compliance with government carbon reduction targets, driven through advanced programmes such as the Code for Sustainable Homes and BREEAM.

Insulation products vary in terms of colour, surface finish and texture, core composition and importantly, performance. The specification of materials that insulate is a science-based decision, but a successful specification relies on the specifier understanding not only the mathematical performance, but the peripheral factors that can influence the final installation.

Specification of insulation products is often based upon the minimum requirement of the Building Regulations AD (Approved Document) Part L and their relationship with manufacturers' performance data, and it has been suggested that legislation is driving the production of a range of products that 'just work', presenting little apparent difference between them. In order to specify insulation correctly however, the specifier needs to understand the reasons why it works, and apply the correct technology to any given construction detail. In understanding more fully the processes that make insulation work, and indeed the factors that stop it from working, specifiers will be in a far stronger position to specify the correct material for the correct application.

The installed performance of an insulation product is reliant upon not only performance characteristics and the adherence of contractors to manufacturers and general best practice workmanship requirements, but also the suitability of the insulant specified to its installed location.

How insulation works

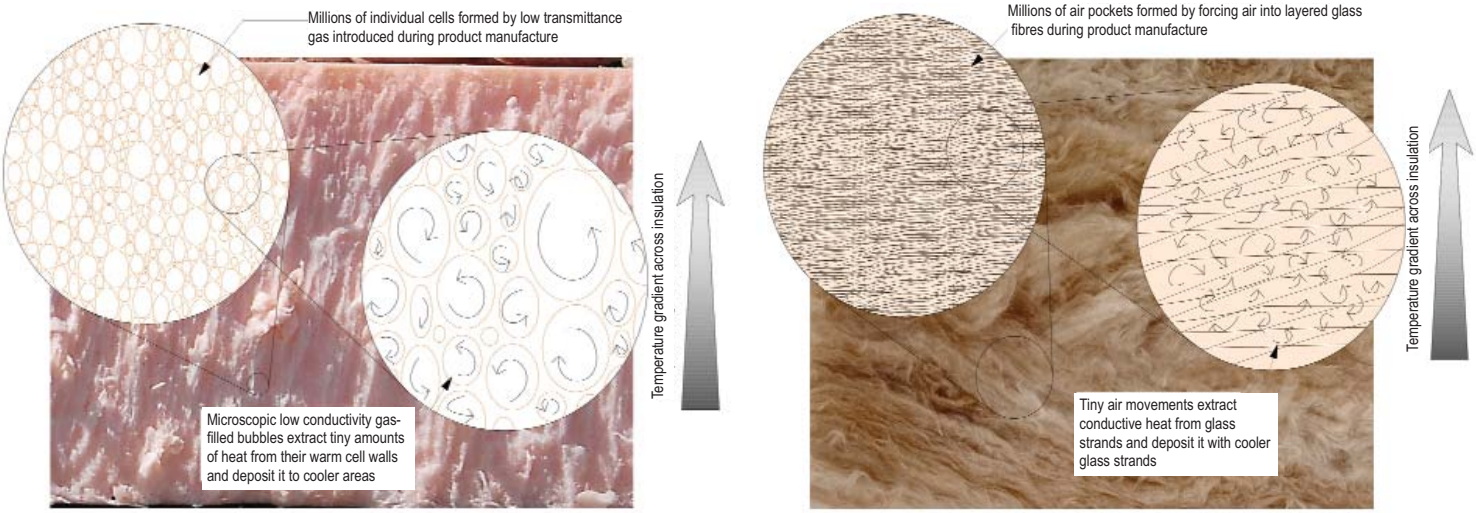
Insulation products are designed to frustrate the transfer of heat across the material itself. There are three methods of heat transfer: radiation, conduction and convection.

Radiation

Any object whose temperature is higher than the surfaces that surround it will lose energy as a net radiant exchange. Radiant heat can only travel in straight lines. Introduce a solid object between points A and B, and they will no longer directly exchange radiant heat. Radiation is the only heat transfer mechanism that crosses vacuums.

Conduction

Conduction is reliant upon physical contact. If there is no contact, conduction cannot take place. Contact between two substances of different temperature results in a heat exchange from the higher temperature to the lower



Above left: Closed cell insulation - extruded polystyrene. Right: Open cell insulation: glass wool.

temperature substance. The greater the temperature differential, the faster the heat exchange.

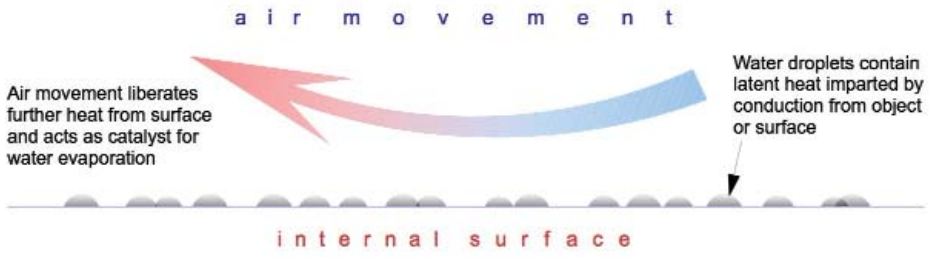
Convection
Convection is the transfer of energy via fluids (gases and liquids). It is this method that plays the greatest role in the liberation and transfer of heat in buildings. The most common propagation of this effect is from solid to gas, ie object to air, and then back again, typically as the air meets with the external building fabric.

The process is actually initiated by an energy transfer due to conduction, and is complicated by the level of water vapour that is supported by the air. The water molecules store heat given to them through conduction from warm surfaces. The water vapour and the air cannot be separated as gases. They will only part company when the saturated vapour pressure is reached, ie the quantity of water (albeit in vapour form) exceeds the level of heat available to maintain it as a gas (vapour), and therefore it condenses. Condensation causes this latent heat to be released; the temperature to water vapour ratio alters, and once it has altered far enough the process will start again. The world's weather systems follow a very similar cycle.

If air could be kept still and dry it would perform as a highly efficient insulant. However, if air is heated, its molecular structure expands and becomes less dense relative to the air surrounding it, and so rises. As it progresses further from the heat source, it begins to cool. The molecules contract and increase in density and sink back down. Air molecules are in a constant state of flux, dependent on the ambient temperature, and interference from any point, or background heat sources. This process of heat transfer 'convection' is complicated by the fact that air will cool at a rate dependent upon the amount of water vapour saturation. The greater the saturation, the slower the cooling.

Performance

Insulation materials limit the flow of energy (heat) between two bodies that are not at the same temperature. Greater insulation performance is directly attributable to the thermal conductivity of the insulant. That is, the rate at which a fixed amount of energy transfers across a known thickness of the material. The direct inverse



Above: air movement causes evaporation of water droplets

(reciprocal) of this measure is the material's thermal resistance, which measures the material's ability to resist the transfer of heat.

Thermal conductivity

Thermal conductivity, often referred to as the 'K' or 'λ' (lambda) value, is a constant for any given material, and is measured in W/mK (watts per kelvin metre). The higher the λ value, the better the thermal conductivity. Good insulators will have as low a value as possible. Steel and concrete have very high thermal conductivity and therefore very low thermal resistance. This makes them poor insulators.

The λ value for any material will become higher with an increase in temperature. Although the temperature increase will need to be significant for this to occur, and the temperature variants in most buildings are generally within the tolerances that would render any change in the lambda value negligible.

Thermal resistance

Thermal resistance, referred to as the 'R' value of a material, is a product of thermal conductivity and thickness. The R-value is calculated from the thickness of the material divided by its thermal conductivity and expressed in the units m^2K/W (square metre kelvins per watt). The greater the material thickness, the greater the thermal resistance.

U-value

In construction terms, while a U-value may be calculated and attributed to a single thickness of any material, it is more usual to calculate it as a product resulting from the assembly of different materials in any given form of construction. It is a measure of the transmission of heat through a pre-determined area of the building fabric — this being $1m^2$. The unit measurements are therefore W/m^2K (watts per square metre kelvin) and describe the heat transfer, in watts, through a square metre of a building element (such as a wall, floor or roof). This is used to calculate the heat transfer, or loss, through the building fabric. For example, if a wall had a U-value of $1W/m^2K$ — with a temperature differential of 10°, there would be a heat loss of 10 watts for every square metre of wall area.

Open cell products

Open cell insulation includes products such as mineral and sheep's wool insulation. Expanded polystyrene (EPS) insulants are technically 'closed cell' in their structure, but their performance is akin to an open cell material due to the linking across the structure of the air pockets that surround the blown cell beads that are the essence of its composition.

The graphic opposite shows a sectional core image of a typical glass wool product overlaid with a representation of the millions upon millions (per square metre) of 'open cell' air pockets that are created during manufacture. At the same time as the manufacturing process forces air into the core of the glass fibres, a previously introduced binding agent is activated to form a matrix locking the composition together. This produces the 'spring loading' that is associated with mineral wool insulation, allowing it to regain its shape and thickness after compression.

The open cell nature of the matrix will allow air migration through its core, but the route is tortuous and so heat loss

due to convection is minimal. The principle in operation is the formation of such small air pockets that air movement is brought to a virtual, but not complete, stop. A material will only be able to radiate heat that it is able to absorb. The glass strands and their binder are poor heat conductors, so heat loss via radiation is deemed to be negligible. Dry air is a good insulation gas. So with open cell products, if contamination of the core air by water vapour can be prevented (using vapour control barriers), the ultra small air pockets will significantly limit air movement.

Closed cell products

Closed cell insulants include products such as extruded polystyrene and chemical foam-boards. Closed cell technology utilises the controlled introduction of gases (blowing agents) during manufacture that form a much more dense matrix of individual cells than glass wool or EPS. The cells are formed as bubbles of the gas whose thermal conductivity is significantly less than that of air. Combine this with the inability of water vapour to readily contaminate the cells, and this provides for a significantly higher performing insulant. (NB the matrix of some chemical foam insulants may be susceptible to break-down over time by the presence of water, or water vapour).

The cell walls are extremely thin which limits conduction, but are gas tight. The dense cellular composition further limits the potential for gas movement, as it may only move within the confines of its containing cell, and not between cells. So as with open cell materials, the process of heat transfer from warm to cool sides is affected by a combination of conduction via the cell walls and limited convection via the cell gas. The material's efficiency is very high and effective over the area of an unbroken board, but is significantly reduced by poor workmanship in board cutting and jointing.

In an effort to improve long-term performance, manufacturers face foam-board products in particular, with a shiny foil layer. This acts to minimise contamination by water vapour by acting as a vapour barrier, while also reflecting radiant energy back into the building. Taping of foil-faced board using a foil tape can improve vapour control, although it will have little impact upon a poorly constructed joint that is not consistently tight.

Installation versus performance

Insulation manufacturers produce technical and promotional literature incorporating a vast range of figures that can be confusing, and not all manufacturers present their performance in the same way. Performance measures are usually based upon lab test results. Such results are accepted across the board, by building designers and the legislative bodies such as building control authorities.

However, this is not the same as an on-site test. No two 'on-site' situations will provide exactly the same conditions, so testing can only be carried out to provide a comparison between different insulation products, using exactly the same conditions. As a result manufacturers illustrate performance in sales and technical literature by describing the perfect installation, where joints are perfectly made, insulation is uniformly continuous, and all tolerances are millimetre perfect. Anyone who has been on a building site will know this does not reflect reality.

Manufacturers illustrate performance in sales and technical literature by describing the perfect installation

To this end specifiers may take note of the implementation of Green Deal assessments. The diktat here is to adhere to the 'golden rule' that the cost of the energy saving measures proposed must not exceed the projected savings made by the resulting use of less energy. In practice, in order to make sure of this, Green Deal Assessors (GDAs) are adopting a very conservative line on projected savings, and projected savings involving insulation use calculations at 75 per cent of the manufacturer's performance data. In addition, while the manufacturers focus on product performance, they can gloss over other key issues that directly affect performance, such as the specification of the correct insulation product within building areas that are likely to generate a cold and potentially damp environment, for example, under-floor voids.

Insulation and water do not mix. All insulation product types will be affected within a range from negligible, (such as extruded polystyrene [XPS]), to severely compromised (such as wool insulants). The degree of compromise will be related to the degree of contamination. So any environment where water vapour can exist without threat of rapid and total evaporation, or the presence of physical water droplets themselves, will reduce insulation performance. Once within the matrix of the insulant, water will conduct the energy that the insulation is trying to contain. The larger the water droplet, the greater the conduction.

So, for example, where glass wool is installed into a full-fill cavity wall, if one of the masonry cavity sides has been exposed to rain immediately prior to installation of the insulant, there will be a reduction in the potential insulation performance of the completed cavity wall. If the insulation has been allowed to become wet through, performance may well become negative.

Sustainability

Today's built environment specifiers are under increasing pressure; to be more green, to engineer a lower carbon environment and to move towards greater sustainability. The larger insulation manufacturers have put significant measures in place to:

- Reduce reliance upon raw materials
- Recycle pre and post-manufacture
- Reduce packaging and ensure packaging remains recyclable
- Reduce energy use in production and transport
- Have zero waste to landfill policies

Manufacturers market their products as 'sustainable' on the premise that their insulation products will save far more energy/carbon, over the installation lifetime than it has cost to manufacture.

Conclusion

Insulation materials are reliant upon their inherent molecular make-up, to minimise the three forms of heat transfer — radiation, conduction and convection. The greatest building heat losses are from air movement. Any moving body of air will extract heat from an object or surface over which it passes. The heat loss is proportional to the speed of the moving air, the amount of water present and the temperature differential between heat source and air. The faster the air movement over a heat source, the faster

the heat transfer occurs. The presence of water droplets will act as an accelerant to this process, although control over water vapour saturation will usually need to be exercised to avoid problems caused by condensation. Condensation may be controlled to a large extent by ensuring water vapour in the air is contained within the warm internal environment. Vapour control layers on the warm side of the insulation, effectively sealing the envelope to air migration between warm and cooler zones, are the theoretical solution.

The intrinsic aim is to prevent the movement of gases within the insulation core matrix

Current materials technology and carefully monitored workmanship in assembling those materials, can achieve near zero air leakage through the insulated envelope, and indeed Passivhaus design is reliant upon this, while using controlled ventilation to remove contaminated air, design principles that are reliant upon workmanship in order to succeed. Addressing the cellular construction of dedicated insulation materials, the intrinsic aim is to prevent the movement of gases within the insulation core matrix, in doing so the loss of heat consequential to that movement will also be reduced.

Although 'open cell' insulation products, such as wool allow much greater migration of air across them, and this limits their performance, their flexible construction gives a far greater advantage in terms of quality control of installation workmanship. Due to the nature of the material, jointing produces a very similar result to the material itself. Whereas rigid board products carry an onerous installation premium penalty to achieve manufacturer's 'lab test' precision standards of jointing. Insulation materials with a more dense, self-contained cellular composition will provide a lower thermal conductivity (λ value) and so a higher thermal resistivity (R value) to out-perform 'open cell' materials, which rely on maintaining dry air within their cores for ultimate performance.

There are open cell foamed products available that due to their core matrix composition have a higher thermal conductivity than their closed cell cousins, but have advantages with greater flexibility to accommodate building movement, and any deterioration of cell walls will not result in the liberation of the gas content. In specifying insulation products the building designer should consider the potential for water contamination, and the possibility of gas migration within the core matrix and the resulting compromise in performance, that could deteriorate further over the lifetime of the building, unseen and unchecked.

There are better performing technologies on the market with 'aerogels' and 'evacuated panels', but performance is reliant upon the same principles of heat transfer, and for the time being has a limited specification niche, remaining largely cost prohibitive for the vast majority of applications.

Mark Wilson is a Chartered Architectural Technologist and principal at Design Office Architectural Ltd, based in Leeds. He has developed The BuildingDesign Expert.com website and is a co-founder of the CIAT members' hub on Linkedin.

The CIOB Article Competition

This article won first prize in the 2013 CIOB Article Competition.The competition, which is open to CIOB members and non-members, calls for construction industry articles in an encyclopaedic style. Two other CIAT members were runners up and their articles follow.

This article was published on Designing Buildings Wiki, an expert site covering all aspects of property development, building design, construction and project management, which is free to use. If you have content that is factual (not promotional) and relevant to the industry, DesigningBuildings is also delivering Google-topping results for many key search terms. Moreover, articles can also be linked to branded user profiles and shared on social media like LinkedIn, Twitter and Facebook, helping disseminate good content more widely.

A longer version of this article was published in *Journal of Building Survey, Appraisal & Valuation*, Volume 2 Number 1, April 2013. (Reduced subscriptions available to CIAT members). Reproduced by permission of Henry Stewart Publications, London.

Common available insulation materials

INSULATION MATERIAL	THERMAL CONDUCTIVITY W/MK - LESS INDICATES BETTER PERFORMANCE	THERMAL RESISTANCE M2K/W - MORE INDICATE BETTER PERFORMANCE	U - VALUE W/M2K
Mineral Wool			
Glass fibre	0.032 - 0.044	3.10 - 2.25	0.32 - 0.44
Rock fibre	0.035 - 0.044	2.85 - 2.25	0.35 - 0.44
Sheep's wool	0.042	2.38	0.42
Expanded polystyrene (EPS)	0.036	2.77	0.36
Multi-foils	0.040	The nature of this insulant does not lend itself directly to direct comparison on thermal resistance or stand alone U-value	
Hemp	0.039	2.56	0.39
Extruded polystyrene (XPS)	0.029 - 0.036	3.44 - 2.77	0.29 - 0.36
Polyurethane foam board (PUR)	0.22 - 0.29	0.45 - 3.44	2.22 - 0.29
Polyisocyanurate foam board (PIR)	0.021 - 0.022	4.76 - 4.54	0.21 - 0.22
Phenolic foam board	0.021	4.76	0.21
Evacuated panels - 20mm thk	0.004	5.00	0.20
Aerogel board - 10mm thk	0.013	0.77	1.29

Thermal resistance figures are based 100mm thickness of insulation material

Thermal conductivity figures are typical for each material and may vary slightly between manufacturers

U - values shown indicate heat loss in watts / sq.m degree for insulation product alone

The cone ranger

Norman Macintosh MCIAT, Chartered Architectural Technologist, is constructing a traditional Scottish roundhouse in Aberdeenshire, and in this article outlines the skilled conservation procedures required in conical roof slating. This article was a runner up in the CIOB article competition.

It is important to consider the geometry of the surface to be slated, which will be both sloping and curved. Natural slates are flat and sizes will vary, this means consideration has to be given to how they will sit on the curved plane.

In this article, the roof used as an example has a diameter at eaves/gutter level of 8500mm and a roof pitch of 40 degrees. The dimension from eaves to apex on the sloping line of the roof can be calculated by simple geometry. This dimension is important in the setting out and template making procedure. The circumference of the roof must also be calculated (making allowance for any overhang into the gutter at eaves level).

Above is the first courses of slating on the main roof. The width of the first course slates was 305 mm (12"), a very heavy, thick slate to cut. The building will have an exposed timber eaves. The gutter will be formed in cast aluminium.

The traditional roundhouse will be an architectural studio for Norman Macintosh

The image to the left show higher up the main roof with purpose-made scaffold batten supports. A 'break' or cutting iron is fixed to the scaffolding batten, with slate knife to hand for any last minute adjustments to slate width and angle cutting. Timber packers under scaffold batten supports protect slate work. It would be difficult to replace a damaged

slate, so care has to be taken when climbing up the various scaffold lifts. Below is a view of the overall building showing the various scaffold batten lifts.

Note the slate with a slightly green tinge in the image below left – this one escaped attention during the grading process, but the odd chipped corner and feather cut edges all add to the overall character.

Slate selection and grading

The size or width of slate available for the eaves course is checked and it is best to use as wide a slate as possible as the slate widths will diminish in size towards the apex. It is also important to ensure the largest size slate chosen will lie properly on the roof around the eaves course. The smaller the roof diameter the smaller the slate width required.

Once the size of slate for the eaves or starter course has been decided the number of slates required to go round the circumference is calculated. This may not work out to an exact number of slates or slate widths, therefore choosing the next round number up, the circumference is then divided by the total number of slates. This is important to ensure each slate on each course all the way from eaves to apex, are the same width at the bottom of the slate on each individual course. For example, all the slates on the eaves course should have the same base dimension, just as the slates on any other course going up the roof will all have the same base dimension for that course.

Before any work is carried out on slate marking or cutting, an approximate calculation of the total number of slates for the entire roof is required. There are several reasons for this – If the finished roof is required to have a graded appearance ie with thicker slates at the eaves gradually getting thinner towards the apex, all the slates have to be graded into say 'thicks', 'middles' and 'thins' – there may also be other thicknesses in between.

By looking at the thickness of the slate and feeling the weight, the grading process becomes easier. Add to this, the size selection as wider slates will be used on the first few courses and then to save cutting or wasting slates, narrower sized slates can be used higher up the roof.

Grading and sizing the slates is a time consuming job and requires space to set out the various racks of slates to keep these in a manageable order. If care is not taken in this preparation work, the actual working with the slate either in marking and cutting or in putting the slates on the roof, will become very difficult.

Once the slates are selected and graded, a template (above) is required in order to allow the marking and then the cutting or dressing of each slate. In the example roof there were over 4000 slates and each one required two cuts to form a tapered shape.

Note: Not all slates should be cut or dressed at once. Mark and cut eaves course initially and fix these on the roof – this allows for any slight tweaking of the template or cutting technique.

For example, if there are 100 slates to each course, and if the marking and cutting is just 0.5 mm out an error can creep in very easily – 100 x 0.5 mm = 50mm. Take care to understand the setting out and cutting as you go. Take time and do not get ahead of yourself. Using a long piece of wood, plywood or two pieces of sarking board fixed together, make a working template. This template will form a shape which will be one part of the overall sloping \ curved roof – imagine an apple pie cut into numerous slices, each one the same size – it is similar to the conical roof, each slice (or the template) added together will make up the entire roof.

The template dimension at its widest end will be the size calculated earlier by dividing the circumference of the roof (at eaves level + the drip or overhang) by the number of slates. The other end of the template will be a point. The length of the template will be the same as the length from eaves to apex on the actual slope of the roof (plus overhang).
Next the slate cover and gauge must be calculated – this does depend on the geographic location of the building on which the roof will be placed and also the roof pitch and type of slate. It is important to have these dimensions calculated and set out properly.

Slate marking and cutting/dressing

Each course is then marked onto the template. It is suggested that the template is supported on a bench or similar at around thigh height. Place one slate at a time on the template, face up and with the bottom of the slate aligned with the template course line and slate held centrally, mark or score the underside of the slate with a nail or pointed marker. As it may be necessary to mark and cut 4000 + slates, it is worth taking time to set the template properly and to consider making a simple marking tool as holding on to a nail for 8000 score lines can be painful.

Using the template, mark out a few of the eaves course – say 6 slates. Cut these first and try them on the roof to see how they sit next each other – check the angle by fixing a piece of thin gauge wire to the apex of the roof on a nail or bolt with a washer allowing the wire to be taken down to the eaves and all the way round the roof. The wire will allow the angle of cut to be checked – it should be close if the geometry calculations were done correctly and the roof structure is true.

Make any slight adjustments and continue marking, cutting and fixing the entire eaves course. In order to help ensure each subsequent course of slates sit tight with those previously fixed, it may be necessary to cut the shoulder off the slates. See image below showing slate shoulder marking and cut slates stacked ready for fixing.

Note each slate course is numbered - this one SR C1 (Small Roof, Course 1)

Cutting slates

Depending on the slate thickness and how skilled the cutter is with a slate knife, the lower courses may be difficult to cut and keeping to a straight line can be problematic. A heavier mash hammer can be used for these thicker slates, reverting to a slate knife as the slates become thinner.

Next mark and cut/dress the next course and fix these to the roof, all the time checking the angle and ensuring the course is fixed true by checking with a wire – add a piece of insulating tape or similar to the wire to indicate the bottom of the slate in each course. Also use the wire to mark the position of the next row of slates. This makes nailing the slates onto the roof quicker if you have an entire course marked out in advance. Valley slating – as the two roofs merge, the valley is naturally curved which adds a nice feature to the roof.

Nailing slates

The first few courses can be double nailed just as with any other roof, but as the slates get narrower toward the apex of the roof the slates need to be top nailed in order to provide cover. The slates will also sit neater and tighter, if the top shoulders are cut off and the

slates have been properly graded (thicks, middles, thins).

Cover to nails or nail holes is important to ensure the roof is held watertight. In the image above the two nail holes were too low down the narrow slates to provide sufficient cover. These slates were stripped and new ones cut, with a single nail hole centre top.

The image below shows centre top nailing technique to provide cover to nail

holes. Note the cross marking mid slate which is carried out using a thin gauge wire attached at the roof apex stud and taken down to mark every slate course and corner points of next course of slates. This ensures every course is fitted at same height and side cuts line up to roof apex.The image below shows the thin gauge wire and tape used to mark course heights. The wire is also used to mark the bottom corners of the next course of slates and for checking the angle of cut so that each slate side points towards the apex.

That is the basics and although it is extremely hard work and a very slow overall process the finished roof should be a work of art.

Below: Valley slating - as the two roofs merge, the valley is naturally curved.

Come into my parlour...

Charles Hippisley-Cox MCIAT, Chartered Architectural Technologist, was a runner up in the CIOB article competition with his article *Bio predators as a means of addressing woodworm infestation.*

Most professionals working with the built environment are now committed to using fewer potentially dangerous chemicals whenever possible. A recent trial has shown that there may be scope for using spiders rather than sprays to control woodworm populations.
A five year trial followed the informal observations of *Pholcus phalangioides* devouring a variety of prey during repairs to a property in Northern France where it is a legal requirement for buildings to be chemically treated as part of the formal property transaction process. The property had been comprehensively treated in 2005 with permethrin in a standard commercial water-based product applied as a spray.

All signs of life were eradicated, or so it seemed at the start of the project, but the following year it was clear that the woodworm (*Anobium punctatum*) had survived with plenty of fresh dust from beetles emerging in large numbers during the spring. After spraying there was also a conspicuous absence of any spiders with the exception of one or two ghostly *Pholcus* apparently missed by the killer-spray.

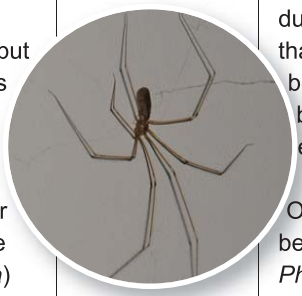
Pholcus phalangioides misleadingly shares the common name 'Daddy Long Legs' with the crane fly and the harvestman neither of which are actually true spiders. There is a slightly better vernacular name; 'Cellar Spider', but Pholcus is by no means restricted to cellar-living. Their webs do not normally act as effective traps with Pholcus preferring to actively seek out their prey. Their webs are essentially a base from which to hunt and a place for the eggs to hatch into juveniles.

Despite their tantalisingly slow and graceful movements, these spiders are actually a very efficient venomous carnivores but fortunately harmless to humans as their fangs are much too small to penetrate our skin. Their effective hunting method can even be used against other species of spiders including the large house spiders (*Tenegaria*) which can be up to ten times their weight. A population of these spiders can grow very rapidly depending on the abundance of potential prey.

At the property in France four unoccupied rooms were monitored over a five year period. In 2006 the main prey of the small population of Pholcus was the large number of emerging woodworm beetles that had been untouched by the chemical treatment of 2005. In response to this abundant food source, the few spiders generated huge numbers of spiderlings that survived into adulthood with an estimated 75 adults in the spring of 2007.

The life cycle of the *Anobium punctatum* can involve a long spell in the wood as the larvae derive energy for pupation before emerging as adult beetles. A healthy population of hungry spiders at the time of beetles leaving the timber is crucial to form a significant break in the *Anobium punctatum* life-cycle; ideally before the mature beetles mate and lay eggs.

The estimated 75 adults in the spring of 2007 completely decimated the woodworm population with approximately 400 examples of beetles caught and wrapped in silk bundles. The subsequent decline in woodworm during 2008 and 2009 confirmed that they were being eaten if not before mating, but certainly before they were laying their eggs.



There may be scope for using spiders rather than sprays to control woodworm

Once the rich food supply of beetles started to wane, the *Pholcus* population began to decline despite the reappearance of house spiders as an alternative prey. By 2011 the population had declined to approximately 10 adults across the four rooms and most spiderlings were being ingested by their mothers.

A further research project could establish methods of producing spider colonies on a commercial basis to home-owners wishing to explore an alternative strategy to spraying. There may also be scope for creating nesting places by pest control companies as a 'green' alternative to chemical methods.

There may be some perception-related obstacles that would need to be overcome as spiders are often wrongly associated with untidy or even unclean domestic environments. Arachnophobia is another potential disadvantage for spiders as bio-predators , but their slow, graceful movements are actually not as threatening as the rapid movements of the 'big hairy ones' …and they may even help remove the latter.

Charles Hippisley-Cox MCIAT is course director for Architectural Technology at the University of Huddersfield.

School of hard

Toni Page MCIAT is a Chartered Architectural Technologist and CIAT-Accredited Conservationist. In this article she describes her recent restoration work on the Grade II* listed Merton Hall, part of St John's College, Cambridge, which involved the preservation and sensitive modernisation of a building almost five hundred years old.

I have been fortunate to work with many interesting historic buildings and in particular, Merton Hall, which is a Grade II* listed timber framed building dating from the sixteenth century situated on Northampton Street, Cambridge. The building is owned and maintained by St John's College. The juxtaposition is of interest; its neighbour is the twelfth century School of Pythagoras along with the 1966-67 Cripps building designed by Powell and Moya.

History of Merton Hall

Merton Hall dates from circa 1518 (substantiated by dendrochronology testing during the project) and originally was only half the size it is currently. The extension to the west was added in the seventeenth century by the cutting through of the tie beam to the end gable. The Victorians also made additions with the bay windows to the south elevation along with a 1950s mock jetty, added to fit a bath. It is primarily a timber framed building with plain tile roof, with external render and brickwork. There are a number of historic features, and it is included in the West Cambridgeshire volume of the Royal Commission on Historical Monuments.

The historic and special architectural importance of Merton Hall comprises its sixteenth century frame with double jetty and its exposed timber framing, which is unusual in Cambridge vernacular architecture.

Updating and repairs

The building had had several campaigns of inappropriate repairs using cement materials in pointing and render work, along with lack of regular maintenance resulting in physical decay; rotting timber sills to windows and failed joints in the cast iron guttering. The building contract was traditional and overall construction cost £1.2 million. The project was completed in September 2009 with on-site works taking two years.

The brief was to provide rooms for Fellows and refurbish the existing sanitary facilities whilst repairing the structure of the building for continued beneficial occupation. Adapting the building for use by Fellows respected the spatial layout of the building whilst recognising that the travel distances from the first floor were inadequate for continued use as student residences.

Methods of investigation

Several methods of investigation were employed to inform the brief and works to be carried out. Laser survey drawing

Jetty after works were completed showing oak repa

knocks

irs

Before restoration, showing jetty with School of Pythagoras to the right hand side

information was provided of the site and building. Further surveys of the physical building were carried out using photographs and detailed drawings. This included a schedule of the exposed timber frame. This informed what repairs and works were required. Traditional repairs were used to repair the timber frame using new oak and whittled oak pegs. Wherever possible, historic fabric was retained (for example, rafters which were bowed were retained and new timber support installed adjacent) and the existing downpipes and gutters re-used.

Sanitary facilities

The new sanitary facilities were located in the previous sanitary facilities zone to minimise the disruption to the existing layout. Traditional materials were used in the repairs, for example, lime plaster internally and lime render externally along with re-use of salvaged plain tiles on the roof. New timber partitions were installed which could be easily removed in the future to provide 'reversibility' where possible.

Consents

Listed building consent was sought and received for the works and several meetings were held with the Local Authority's Conservation Officer along with English Heritage as a statutory consultee, given Merton Hall's Grade II* listing.

Minimum intervention

Component life was considered by using non-corrosive metals in repairs (such as stainless steel flitch plates and angles) and installed in visually discreet locations wherever possible. External timber has been protected by flashings where necessary. Sheep's wool was used to provide the insulation to the timber frame along with a limecrete floor, which brought the overall U-value in line with the Building Regulations. Fire protection measures were taken in a sympathetic way by upgrading doors using an applied finish which allowed the retention of the historic doors and frames including a seventeenth century geometric style door.

Repairs were implemented by using the philosophy of minimum intervention and like for like materials wherever possible. Both surface water and foul drainage were improved or replaced and ground levels reduced to enable the repaired timber frame to be kept dry.

Top left: detail of jetty – joint failed due to decay of timber from water ingress. Top right: rotten cill to bay window. Above: after completion of the works.

Fast forward to the past

Toni Page is a Chartered Architectural Technologist with a BSc (Hons) Architectural Technology degree from Napier University and who achieved MCIAT status in 2002. Given her interest in the historic environment and gaining more experience within the conservation department of RH Partnership Architects, she decided to specialise in conservation by studying part time for a post-graduate diploma in conservation of the historic environment at the College of Estate Management supported by the University of Reading.

This provided her with both the academic and practical knowledge to achieve conservation accreditation and she has been actively involved in conservation work since 2002. The course provided the underpinning knowledge on conservation legislation, philosophy and practical knowledge on suitable materials and repair techniques to apply to real life projects such as Merton Hall.

To find out more about becoming a CIAT-Accredited Conservationist visit www.ciat.org.uk or contact Amina Khanum. Tel. 020 7278 2206 Email amina@ciat.org.uk.

Benefit of accreditation

Having been involved in many conservation projects, the benefits of accreditation are clear; it lets the client know that you have the appropriate background to assess the practical long term use of a historic building, make informed decisions about the kind of repairs which are suitable for a historic listed building and implement them. Accreditation provides a platform to have discussions with conservation officers and English Heritage and specialist sub-contractors in the field of conservation work.

Compulsory CE marking is here

The Door and Hardware Federation explains what the Architectural Technology professional needs to know about the new CE marking rules

CE marking of non-fire industrial doors and shutters is now compulsory. On 1 July it became a criminal offence to place such a product on the market without a CE mark. As a member of the Chartered Institute of Architectural Technologists, how will this affect your specification decisions? What consequences do you face if you fail to check that the door you specify carries the vital CE mark?

These questions are answered by the Door and Hardware Federation which represents all the UK's leading industrial door and shutter manufacturers and suppliers. For the past 18 months the federation has been working closely with its members, ensuring their compliance procedures were well in place in advance of the change of law. This has ensured DHF members are now ideally placed to supply fully compliant products to specifiers.

As an Architectural Technology professional, there is one sure way to guarantee you are complying with the new rules: choose products from suppliers that are members of the Door and Hardware Federation. This is your assurance that all products will meet the latest CE mark legislation. So what are the benefits to you, the specifier, of insisting on seeing a CE mark on every industrial door you choose?

It gives you peace of mind that the product has been checked to ensure it complies with health and safety and some environmental regulations. Neither you nor the architect needs to check for this compliance (but a check still needs to be made to ensure it complies with Building Regulations). In particular, it is your guarantee that the door supplier has carried out all necessary testing of the product under BS EN 13241-1; has implemented a factory production control system as required by the new legislation; and has ensured all relevant declarations of performance have been made.

Another benefit is that the designer need not carry out any risk assessment on the CE marked product (this will only have to be carried out by the building owner or user). Choosing a CE marked product from a DHF member company means that the CE mark is evidence of compliance relating to product safety under health and safety legislation, and so it helps protect the designer's client against litigation in the event of an accident occurring. It is not only the designer's client that has this safeguard. Once the completed building is tenanted, the CE mark also offers the tenant similar protection in the event of a future legal claim involving the CE marked door.

Choosing a CE marked product from a DHF member company means that the CE mark is evidence of compliance

When designing a building, the designer must ensure the door meets various vital building performance requirements. One of the most important is thermal insulation.The designer must take the thermal properties of individual construction products into account in order to work out the overall degree of insulation offered by the entire building. Industrial doors are a significant part of this calculation, and again a CE marked door offers the specifier significant guarantees that he or she is meeting insulation requirements.

As required by BSEN 12428-2000, the specifier must take into account the U-value of the entire door – not the transfer value across the insulated lath or insulated panel as quoted by some (non-DHF member) door suppliers. However, if the door is CE marked, the thermal U-value is stated within the declaration of performance which comes with every CE marked door. This is often in the form of a laboratory test certificate that clearly expresses the insulation value of the entire door. A non-CE marked door cannot give this guidance on thermal insulation or on any other building performance requirements with any guarantee of accuracy. So not only is CE marking a legal requirement, it can also help the Architectural Technology professional make a much more informed choice of product when specifying industrial doors and shutters.

What should you, the Architectural Technology professional, do now to learn more about the challenges and benefits offered by these new CE marking regulations? We urge you to visit the DHF website (**www.dhfonline.org.uk**) to download the wealth of CE marking advisory material that can be downloaded from the website. In particular, you can download the recently published *DHF guide to specifying CE marked industrial doors.* This is aimed directly at Architectural Technology professionals and architects.

Coal tar: the

A common feature in our roads and playgrounds up to the 1980s, coal tar is now considered a health risk. Russell Corbyn explains how find out if coal tar is present on your site, and what to do if it is.

Coal tar is a potentially hazardous material, which prior to 1980 was commonly used in road construction and maintenance processes in this country. It is now classified as carcinogenic, due to the high concentration and type of polynuclear aromatic hydrocarbons (PAHs) within its make-up. Coal tar has also been identified as being potentially hazardous when combined in other materials such as asphalt waste containing coal tar (AWCCT). This has significant implications whenever road or surface materials are dug up, for instance on playgrounds, pavements, highways or car parks. It is therefore essential that coal tar testing on these materials is carried out professionally to:

- Identify the composition of the material with respect to PAHs;
- Determine whether or not it is hazardous in line with the Hazardous Waste Regulations 2005 (see below for regulations);
- Assess the material for safe disposal or whether the material meets the re-use criteria.

Disposing of materials containing coal tar to landfill is generally expensive and potentially unsustainable. This article describes a process which the site investigator can follow to assess the road materials they propose to excavate, and then develop ways to reuse or recycle the material dug up (the arisings) thus avoiding disposal to landfill, reducing the burden on primary aggregates and encouraging a circular (sustainable) economy.

History/background

From the mid-1800s coal tar was produced as a by-product derived from the pyrolysis of coal during the production of domestic 'town' gas. The coal tar was used on highways, pavements and the like as a binder for the aggregate. Coal tar continued to be used on UK highways until the late 1970s/early 1980s until it became increasingly scarce due to the closure of town gas works. With the discovery and implementation of North Sea natural gas, the town gasworks were phased out and as such the production and use of coal tar declined significantly. Simultaneously, concerns began to be expressed regarding its possible carcinogenic nature. The International Agency for Research into Cancer (IARC) has since classified coal tar as a

From the mid-1800s coal tar was produced as a by-product derived from the pyrolysis of coal

Group 1 carcinogen. Due to this, partly, the use of coal tar dwindled and by the early/mid 1980s bitumen became the sole binder used for both macadam mixes and for surface dressing. It is possible, however, that some recycled aggregates from road planings (waste derived from scraping off the top layer of roads) may also contain coal tar. It is important to distinguish between coal tar and bitumen in terms of their health risk. Coal tar has now been classified as carcinogenic, while numerous studies have found bitumen to be a Group 2B carcinogen in general (possibly causing cancer) and Group 2A (probably carcinogenic to humans for roofing bitumen products). The difference between the degree of hazard posed by coal tar and bitumen arises from the different concentrations and types of PAHs present. Some PAHs, such as benzo(a)pyrene, are known to have carcinogenic effects and concentrations of these can be very high in the case of coal tar, but extremely low in bitumen. Coal tar contains in excess of 4,000 different individual compounds including volatile organic compounds, catechols, cresols, naphthols, phenols, carbazoles and PAHs.

The definition of hazardous waste/ waste classification European Directive 91/689/eec, the subsequent Hazardous Waste Regulations 2005 (HWR) and the List of Wastes Regulations 2005 (LoWR) classify certain materials containing coal tar as 'hazardous waste' or potentially

sticky situation

Image © celiafoto - Fotolia.com

hazardous waste with regard to Waste Management Document 2 (WM2, Environment Agency, 2006). Within the document, *Bituminous Mixtures Containing Coal Tar* (ie AWCCT) is a mirror entry which means that if coal tars are present in excess of a threshold then the material is classified as hazardous. This classification may then invoke restrictions on methods of reuse and disposal of these materials. For example, transport of hazardous waste requires a consignment note.

What it means

Maintenance works on roads or other areas where surface materials are present, such as school playgrounds, may involve excavation of materials containing coal tar (AWCCT). Analysis of the materials via site investigation (desk based and/or intrusive) can give an indication of how the project is to proceed, likely savings from disposal and potential for reuse on site. With the ever increasing costs of landfilling, especially with reference to hazardous materials, it makes sense to delineate and map out areas of potentially hazardous and non-hazardous materials prior to excavation utilising any desk information that may be available. A combined desk and sensibly designed site investigation can save a project manager time and money in characterising the materials on site and determining their fate. Furthermore, if the material can be re-used as a secondary aggregate (say, in a cold binder) with the permission of the Environment Agency (EA) (including any treatment permits that will be necessary) and Local Planning Authority (LPA) then it may also create revenue.

The early identification of such material can therefore be vital in reducing project costs

Identification process and site investigation

The presence of coal tar can have major implications to a construction project due to the health and safety issues posed by handling the material as well as the additional cost that comes with the removal and disposal of a potentially hazardous waste. The early identification of such material can therefore be vital in reducing project costs and delays and implementing suitable solutions. Clearly with some projects, a materials management plan (MMP) or site waste management plan (SWaMP) are required. If some work and tests are carried out in advance, there is a clear advantage in the preparation of these plans. Early identification by a site investigation team appointed by the contractor enables:

- Pre-contract discussions to be undertaken with the Environment Agency and local planning authority to clarify the regulatory position relevant to the treatment and re-use of hazardous (or otherwise) waste tar-bound road planings in construction projects;
- All necessary permits or exemptions for the operations to be obtained prior to starting work;
- Delineation between coal tar and non-coal tar containing materials during the removal process;
- Suitability of the material to be used as an end product, with respect to the relevant Highways Works Series (800 Series for cement bound solutions and 900 Series for ex-situ cold bound solutions);
- Solutions to be developed that avoid disposal of materials to landfill.

CDM and economies of scale

If there is to be any form of excavation then there is a duty under the Construction (Design and Management) Regulations 2007 to determine whether or not any of the materials encountered could be hazardous waste. This is to minimise construction hazards and also inform of any remaining hazards. If any historic records about the construction on site show that no coal tar is present in the layers, or that the layers to be excavated were laid after the mid-1980s further investigation may be unnecessary.

However, if there is doubt about whether material to be excavated contains coal tar, several choices exist. It could be accepted that the excavated material may contain tar and the requirements for materials containing tar can be followed. This may be appropriate and cost effective for small scale work such as patching. For larger scale work it will be more cost effective to determine whether all or some of the layers to be excavated contain tar. In this case, cores should be taken or fragments of bituminous material should be taken from each layer encountered in a trial pit (a small excavation of the ground).

Cores or fragments of material should be taken from a trial pit

If it is known that removal will mix the layers, a combined sample from all the layers should be analysed. Coring or trial pitting would also provide valuable information of layer thickness to assist in design and in calculating quantities. The number of cores taken or pits excavated will depend on the extent of the scheme, but there should be sufficient to identify the number of layers present and the extent of any material containing tar. (Knowledge of the previous maintenance will be helpful in assessing what materials may be present).

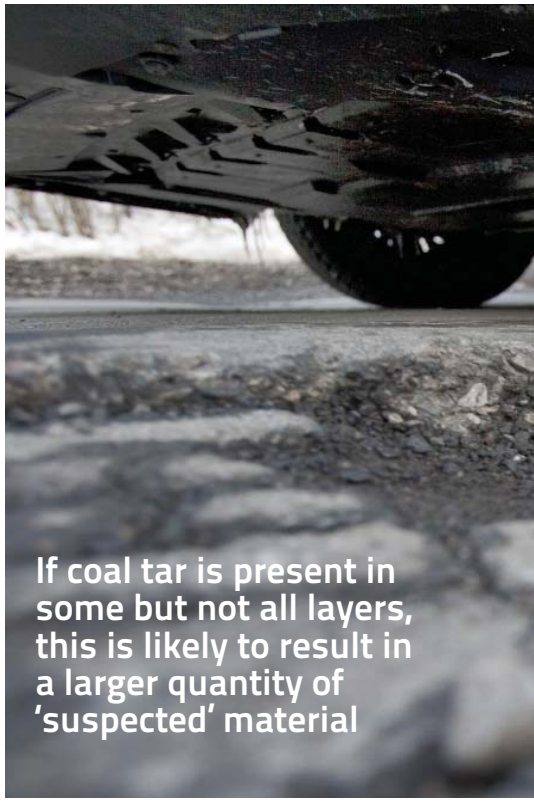
The 'no test' option

Basically, the contractor is responsible for site works, which includes organising the site investigation/testing. Each job is different – sometimes a contractor will subcontract the site investigation out to a company which then may well subcontract it out further still.
It may be that the specialist decides not to take cores prior to the works commencing, but rather to test the arisings. This has several disadvantages:

- There is no opportunity to consider whether coal tar containing materials can be left undisturbed.
- The removal process cannot be designed in advance to separate tar and non-coal tar materials if required. If coal tar is present in some but not all layers, this is likely to result in a larger quantity of 'suspected' material containing coal tar being produced.
- Testing will be required after excavation before a decision can be made on how to use the arisings. This carries the risk of delay during the contract.
- Under the CDM Regulations, it will be necessary to inform the contractor that 'excavated materials may contain coal tar'.

Assessment of results

After analysis, an assessment of the results is required. Assessment can include the option for reuse (which requires additional analytical parameters) but will certainly classify the material as either hazardous, if the threshold is exceeded, or non-hazardous. Whether classified as hazardous or not the material may still be applicable for reuse depending on the solution employed. However, the relevant environmental permit and assessment will be required from the Environment Agency. WRAP – the government's recycling body – considers that material containing coal tar can be recycled by in-situ or ex-situ methods assuming there is agreement with the Environment Agency and the local planning authority. Further site-specific assessment for suitability may be requested depending on the sensitivity of the site's end use or its proximity to environmentally sensitive receptors. WRAP is also currently investigating an End of Waste Protocol for AWCCT. (An End of Waste Protocol for AWCCT means where the material is no longer deemed as waste by the Environment Agency.)



If coal tar is present in some but not all layers, this is likely to result in a larger quantity of 'suspected' material

Recycling/reuse for use as a construction material should always be considered as the first option. This encourages sustainable development, eg retaining material on site and developing sensible site solutions. It is important that the Environment Agency is consulted about any dealings with hazardous waste or potentially hazardous waste and any necessary permits or exemptions for the operations are obtained in good time for its reuse

Recycling/reuse as a construction material should always be considered

and as such further work may be required (such as risk assessments) prior to use in particularly sensitive areas. If it is decided that the material could be reprocessed (at a permitted facility) then it can be used as aggregate in a bitumen bound material such as cold mix asphalt, cement bound material or a hydraulically bound material such as a structural material for reinstatement (SMR), assuming that any other specifications for that final product are met such as British Standards or Specification for Highways Works.

Image © hero - Fotolia.com

Current regulatory positions

As mentioned above, the Environment Agency and WRAP are currently considering a waste protocol for asphalt waste containing coal tar under the European Pathway to Zero Waste initiative, which could change the regulations. However, at the moment all treatments of AWCCT (including mobile plant) require an environmental permit from the Environment Agency. Even when treated, the use of the materials requires an environmental permit. However, the EA, according to its regulatory position, will not pursue an application for an environmental permit for AWCCT where:

- The AWCCT is treated at a suitable permitted facility;
- The treated AWCCT meets Specification for Highways Works 900 Series (clause 948) or 800 Series (Clauses 810 to 880) relevant to the final solution;
- Any subsequent movement of the treated asphalt waste is covered by a hazardous waste consignment note;
- The relevant objectives of the Waste Framework Directives are met, ie 'ensuring that waste management is carried out without endangering human health, without harming the environment and without risk to water, air, soil, plants or animals; or without causing a nuisance through noise or odours; and without adversely affecting the countryside or places of special interest'.

Reuse of any materials must always adhere to their applicability to the final specification

Conclusion

Assessment of materials on site prior to excavation can help to characterise the materials (hazardous/non-hazardous) on site and provide a streamlined rationale for disposal and reuse of the materials by preparation of any treatment and reuse permits that are required along with any additional assessments that may need to be carried out. Reuse of any materials must always adhere to their applicability to the final specification for use, such as Highways Works Specifications, as well as any permitting restrictions or additional assessments that may be required.

Russell Corbyn is an environmental consultant at site investigation specialist Kiwa CMT Testing (www.cmt-ltd.co.uk). This article reproduced by permission of Construction Manager. *For more news, views and technical features visit www.construction-manager.co.uk*

Waste protocol for coal tar: the official view

Asphalt waste containing coal tar (AWCCT) has the potential to be used as recycled aggregate. The UK government's Environment Agency is looking at the standards which it must meet in order to achieve this. Its aim is to establish whether this waste can be considered to be fully recovered as a quality product.

Reusing the material could save businesses money and generate new markets for recycled materials. Through European Pathway to Zero Waste (EPOW) the Agency is gathering information on:

- the standards that must be met by the asphalt waste containing coal tar;
- the potential markets for its use as a recycled aggregate;
- any potential impacts on human health and the environment.

It is still in the early stages of the assessment of this material under the quality protocol process.

In 2011, the Agency set up a technical advisory group with government and industry representatives, and is currently reviewing the findings from the financial impact assessment.

To progress with the environmental risk assessment, the Agency is currently looking for sound scientific data on the effectiveness of the cold recycling encapsulation technique.

To find out more visit www.environment-agency.gov.uk

The only way is ethics

London's Crossrail construction project has taken the lead on ethical sourcing, but as Liane Hartley reports, more guidance is needed for specifiers to avoid exploitation wherever possible.

There is growing sophistication of ethical sourcing on the part of clients and commissioners of construction projects. Correspondingly, the industry and the various bodies and organisations that have been established to monitor, regulate and support the transition of ethical practices into mainstream construction processes have become more sophisticated. But it's a complicated area, and there is still a long way to go.

Ethical sourcing places a responsibility on contractors to ensure materials they use are supplied by markets or companies that have minimum standards of labour practices. These include ensuring workers enjoy freedom of association and the right to collective bargaining, that child labour isn't being used, and that workers receive a living wage. Ethical sourcing becomes more important with complex supply chains that extend beyond the UK and outside of the EU.

By sourcing ethically and responsibly we are not only effectively acting as a driver for those rights, welfare and freedoms being in place, we can highlight where they are missing or being abused. Following on from the Olympics, the Crossrail project is now demanding that suppliers adhere to requirements laid down by the Greater London Authority for ethical sourcing and has set up a working group to work out the best way of going about this, an initiative in which I am involved. That's in addition to long-held requirements for environmental sustainability. In terms of ethical sourcing the main areas we are concentrating on at Crossrail are timber, stone, cement, steel, fixtures and fittings and PPE.

In 2008, the UK government/industry Strategy for Sustainable Construction called for at least 25% of products to adhere to schemes recognised for responsible sourcing by 2012. Meanwhile, the reputational risks inherent in using products or suppliers that have unethical connections or provenance can have significant impacts on a business's reputation, bottom line and level of consumer trust. However, ethical sourcing is a challenging and emotive area for the construction industry. While there is a raft of guidance and standards, codes of practice and organisations dedicated to embedding ethical sourcing within supply chains, much is not product specific. Ethical sourcing is defined most clearly by the Ethical Trading Initiative's Ethical Sourcing Base Code (see box). The ETI is an alliance of companies, trade unions and voluntary organisations. For them ethical trade means that 'retailers, brands and their suppliers take responsibility for improving the working

© Sascha Burkard - Fotolia.com

The ETI base code states that child labour shall not be used in product manufacture

THE ETI BASE CODE

The Ethical Trading Initiative Base Code specifies nine main areas of ethical concern with requirements:

1. Employment is freely chosen
2. Freedom of association and the right to collective bargaining
3. Working conditions are safe and hygienic
4. Child labour shall not be used
5. Living wages are paid
6. Working hours are not excessive
7. No discrimination is practised
8. Regular employment is provided
9. No harsh or inhumane treatment

conditions of the people who make the products they sell'. A number of standards and codes have been developed towards building in the necessary comfort and assurance that certain products comply with ETI. Certifications such as the Programme for the Endorsement of Forest Certification (PEFC) and the Forest Stewardship Council (FSC) provide assurance that timber and timber-related products have been ethically sourced.

There is a growing convention for timber being used on construction projects to be sourced via these certification standards only. The UK Contractors Group issued an agreed statement requiring its members to ensure that all timber products purchased for either temporary or permanent inclusion in the works to be certified as legally and sustainably sourced, as defined by the UK government's Central Point of Expertise on Timber (CPET).

There are two UK routes for responsible sourcing of construction products: BES6001 Responsible Sourcing of Construction Products. This standard, originally launched in 2008, provides a framework for construction product manufacturers to ensure and then prove that their products have been made with constituent materials that have been responsibly sourced. To date more than 40 construction product manufacturers have been certified.

The BSI issued BS8902 in 2009 which describes a framework for the organisational governance, supply chain management and environmental and social aspects that must be addressed by a sector specific scheme. One such company has done just that.
The CARES Sustainable Reinforcing Steel (SRS) scheme has been developed and accredited under BS8902 for steel products, including those used for the reinforcement of concrete. CARES is an independent, not-for-profit certification body that provides regulation, testing and inspection of steels at source.

Specifying CARES SRS-approved companies and products enables procurers to effectively ensure that ethical issues have been addressed and that sufficient auditing mechanisms are in place to provide this assurance. One manufacturer already ahead of the pack in ethical sourcing is InterfaceFlor. Barry Townsend, European purchasing director of InterfaceFlor, says the company works in partnership with its entire supply chain to address ethical and responsible sourcing, to ensure that the responsibility for making changes and addressing issues is shared.

InterfaceFlor's approach is to analyse all of its raw materials at source and look for ways that its products can be improved. The company is now looking at developing Social Product Declarations that will work in a similar way to its Environmental Product Declarations in helping to verify and provide transparency on products' environmental performance.
Technical definitions

The Construction Fixings Association, meanwhile, responded to calls from its own membership when it decided to look at ethical sourcing as a new area of activity. The CFA is qualified to award European Technical Approvals. Andrew Thomas, CFA chairman, argues that technical definitions used in these sort of instruments need to be broadened to cover non-technical aspects such as social responsibility and ethical requirements. What is clear is that the real wins and leaps forward will be where the industry, clients and commissioners and these wider organisations work collaboratively — and we are already seeing this happen, for example on Crossrail. This is a fascinating time for the industry taking on the challenge of working ethical sourcing into their business processes and a great example of how old charges of silo mentalities in this sector do not apply.

Liane Hartley is director of the social enterprise Mend and a member of Crossrail's Ethical Supply Chains in Construction working group. Reproduced by permission of Construction Manager. *For more news, views and technical features visit www.construction-manager.co.uk*

UK CONTRACTORS GROUP DRIVES ETHICAL CHANGE

The UK Contractors Group is bringing ethical sourcing to the fore. Its members have agreed to support and give preference to procuring products 'which are able to demonstrate compliance with a recognised responsible sourcing scheme, certified by a third party'. Steve Cook, principal sustainable development manager at Willmott Dixon Re-Thinking, chairs the UKCG Materials Group which is driving it.

UKCG members agreed last year that all timber products for either temporary or permanent inclusion in the works should be certified as legally and sustainably sourced and with the appropriate chain of custody documentation (PEFC or FSC). For other non-timber construction products the dominant scheme is BES6001. Cook says that 168 individual products from 40 companies have been certified to this standard so far. Many UK construction materials ranging from radiators to PVC products, including 92% of concrete and 83% of steel reinforcement in 2011 sold through UK fabricators, are responsibly sourced to BES6001. Cook acknowledges that main contractors and subcontractors must make responsible sourcing an inherent part of the procurement process to drive the market demand in the right direction and provide the benefit to suppliers who have invested in obtaining these standards.

To achieve responsible sourcing certification across the board is challenging largely due to the fact that 30-40% of materials come from overseas and there is currently no European or International standard for the responsible sourcing of construction products outside of the UK. Their provenance might not be easily traceable and laws are not always in place or enforced to protect against abuses such as child labour. 'Many construction materials such as steel, copper, aluminium and glass are part of a global market and require the full support of many international stakeholders,' says Cook. 'Materials that are sourced from outside the EU should have an appropriate risk assessment to demonstrate due diligence in monitoring compliance with standards.

No standard for sourcing outside the UK

'With regard to natural stone, the group recognises the risks in sourcing from outside the UK, and we are finalising a policy that will look to give preference to suppliers demonstrating leadership in the ethical stewardship of their supply chain through active participation of the Ethical Trading Initiative (ETI Stone Group) or the TFT Responsible Stone Program.'

BIM and the eco-footprint

Building information modelling opens up opportunities to assess the embodied environmental impact of a building and really understand its eco-footprint, writes Daniel Doran of the Building Research Establishment (BRE).

Building information modelling (BIM) opens up fantastic new opportunities for construction professionals to understand the environmental impact of the buildings they work on. Most will be aware that BIM energy modelling is an effective way to assess operational carbon emissions, but in terms of a building's environmental footprint, this is only half the story.

Powerful new BIM tools are now available to assess the embodied environmental impact of the building itself. A building's embodied impact is the sum of the impact caused by all the construction material production plus the transport, installation, maintenance and repair, and end-of-life disposal. Embodied carbon is the best known embodied impact indicator, but other examples include water, resource use and toxicity.

Embodied vs operational carbon

The relationship between operational carbon and embodied carbon is an integrated design consideration. For example, triple glazing has improved insulation and should reduce operational carbon, but the extra layer of glass means more embodied carbon.The question is: how many years of operational savings are needed for the extra embodied carbon to start having a net benefit?

As an illustration, if a building's overall operational carbon emissions are 50kgCO^2/sq m/yr and embodied carbon is 1,000kgCO^2/sq m it would take a couple of decades before the operational savings catch up with the building's embodied carbon. If grid decarbonisation happens in the UK (so energy generation emits less carbon, as is required to achieve statutory UK targets) this time period will increase substantially.

What's more, embodied carbon from the production of construction materials is all upfront, contributing to global warming even before the building is opened. So, with only a short time – if any – to avoid dangerous climate change, it is clear that embodied carbon should be taken very seriously.

Reducing impact

The embodied impact of different construction materials varies enormously and consequently decisions made on a small scale can add up to a substantial difference at the building level. If material A has half the embodied carbon of material B then, all other things being equal, A would represent a significant saving overall. Unfortunately, it is rarely that simple.

Material B may be inherently stronger than A, so less is required to achieve the same function. Or A might be a sheet material that requires an additional substrate C for structural integrity. Alternatively, A might have a long service life, while B needs to be completely replaced half way through the life of the building. When all materials in a building, the relationships between them, varying quantities, different service lives, etc, are taken into account, assessing embodied impacts can be a complex and time-consuming task.

What would have taken days manually can now be done in seconds

To simplify and make the process of manual embodied impact assessment manageable for construction professionals, the Green Guide to Specification has been widely used for many years, in BREEAM and the Code for Sustainable Homes, for example. It is a quick-reference element-level assessment method and, as with all simplified solutions to complex tasks, does have some drawbacks. However, for many design teams, it remains a manageable approach to manual embodied impact assessment.

Using BIM

With the wider use of BIM it is now viable to produce software tools that offer automated building-level assessment. With this automation comes the processing power for greater functionality, better accuracy, integration, a detailed breakdown of results and compliance with new European standards, in particular, BS EN 15978.

BIM's capacity to include material information, to measure quantities from drawn geometry and number crunch the results – the essential ingredients to embodied impact assessment – means that what would have taken days manually can now been done in seconds. As the uptake of BIM has grown over the past five years a number of new embodied assessment tools have emerged. However, the level of BIM integration is variable, which has implications for workflow.

Standalone embodied assessment tools require scheduled quantity data or a model to be imported from a separate BIM modelling application each time an assessment is carried out, resulting in an inefficient workflow. This can be overcome by opting for embodied assessment tools that are incorporated within (or are a plug-in to) widely used BIM applications. However, the holy grail of BIM is for information – and therefore collaboration – to flow freely between different organisations that use different applications and platforms. At the forefront of this is the openBIM IFC initiative. The scope of IFC is ever increasing and work is soon to be completed on including comprehensive embodied impact information.

Building-level assessment – the benefits

Beyond speed and workflow integration, the ability to carry out automated building-level embodied impact assessment has further major advantages. Building-level assessment means results are building specific. Rather than selecting from a library of pre-assessed element constructions (generic wall type A versus generic wall type B) the user is able to enter building specific detail for each material, including thickness, density, service life, site waste and transport distance.

For example, service life can vary considerably depending on installation, weathering, wear, imposed stress and, not least, early replacement due to churn or commercial branding changes. All these criteria are specific to a given building design and are best known by the design team. As service life directly affects the number of replacements over the life of the building (a carpet with a 10 year service life will be replaced five times over a 60 year life), these details can make a substantial difference to the building's overall impact.

Building-level assessment allows building-specific high-impact elements like substructure to be included, which cannot be adequately assessed generically. This is because the design of a sub-structure system largely depends on the specific ground conditions and overall building design.

Integration with assessment schemes

The benefits of building-level embodied impact assessment are recognised by building environmental assessment schemes like BREEAM. BREEAM New Construction now rewards the use of robust building-level embodied assessment tools through two new exemplary level credits. These credits are awarded for using these tools (to certain quality criteria) rather than being linked to quantified performance.

A prerequisite to assess quantified performance is that benchmarks are developed first – so there is something to measure performance against. It is widely accepted that insufficient building-level data exist to produce robust benchmarks now. Therefore, BRE will gather data from BREEAM schemes applying for the exemplary credits. Once a sufficient sample of real project data exists, BRE intends to produce and publish benchmarks for different building use types. BIM based building-level assessment can then be phased in as a means for assessing the main materials credits in BREEAM.

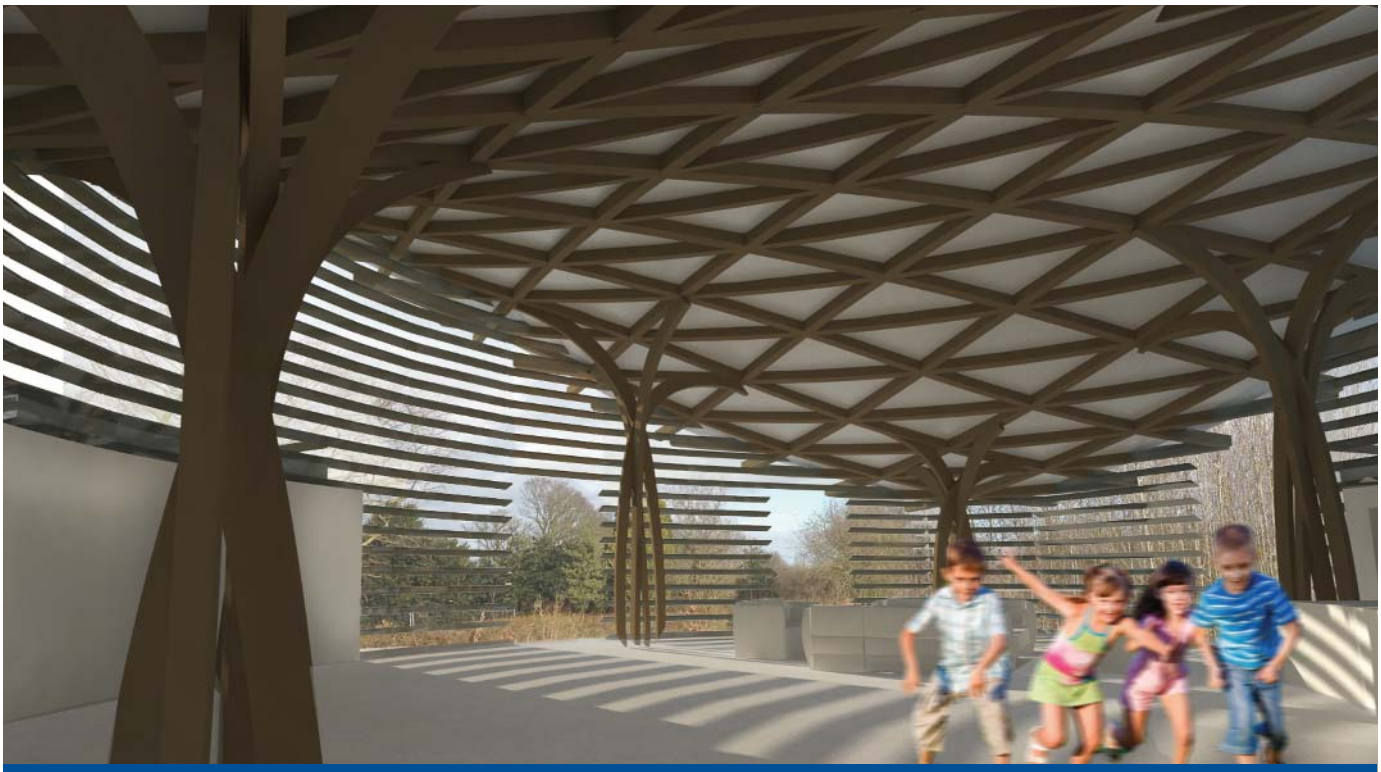
Conclusion

So the industry is increasingly aware of embodied impacts (particularly carbon) and BIM has enabled powerful new tools to emerge that can integrate embodied assessment into existing workflows. The building-level assessment standard BS EN 15978 has been published and assessment schemes like BREEAM are now rewarding building-level assessment. As such, forward thinking consultancies are increasingly offering these services. The stage is set for building level embodied impact assessment soon to become a mainstream activity.

Daniel Doran is senior consultant at BRE leading the IMPACT project. IMPACT is a specification and dataset for the incorporation of building-level embodied impact assessment and life cycle costing into BIM applications. This article reproduced with permission.

A flowering of talent

Adam Jackson ACIAT of ABS Architects created an innovative, sustainable concept for a dwelling near Colchester, featuring a grid shell roof based on floral forms. The design offers valuable insight into the possibilities of new structural forms from nature.



Above: the 'free flowing and organic' support columns and the Arup-designed roof.

The site is situated in a quiet and picturesque village called Layer de la Haye, on the southern outskirts of Colchester in Essex. The village is believed to have been founded in Saxon times. The site sits in a small collection of dwellings detached from the village, to the north east and surrounded by farmland, mature trees and some woodland. The separation affords a degree of seclusion, one feels remote and as views are restricted, one cannot see the rest of the village. The access road leading to the site is heavily wooded, with tall, dense and established ancient hedgerows and trees on both sides.

Numerous attempts for planning consent for a new house were attempted at the site, our clients had tried for many years, and for many years they had been refused planning, and several appeals had been dismissed. Scale, massing and design of the previous schemes were cited as the offensive components by the planning inspectorate, a lack of respect for the site and its context. The most recent scheme proposed a large two storey modernist house, with extensive garaging and relatively tall and square built form. The appeal inspector had concerns that little attempt had been made to consider the context, something which is of paramount importance in this area.

Our clients required a large family home which would be comfortable enough to house their children and grandchildren when they came to visit. Other requirements were a home office, library, a gallery for a collection of artwork and a large open plan living, dining and kitchen space. Mobility was of great importance to our clients and so it was important to provide a building which was primarily, on one level. We proposed to bury the garage as far as possible, so that its large footprint could be disguised and blended in with the surrounding landscape. Our client was very interested in contemporary architecture and modern methods of construction. Design was a very important factor for our client and we were allowed the luxury of investigating very interesting thought processes to establish a suitable building which worked well within the context of the landscape.

Our approach to the design of the new house was to think creatively. The site is generally level and opens out rearwards to farmland. A number of non-native trees had established within the site and a previous bungalow had long been demolished and the site cleared.

Meadow planting had established to the south of the one acre plot. A comprehensive hedgerow bordered the west boundary containing various plant species, most noticeably was gorse, a prevalent species in the area. Further investigation revealed the now demolished dwelling was called 'The Furze', which is another name for ulex, or gorse. We felt that this could be the intrinsic link from site to building.

Spines and flowers from the plants were collected and the design team took about sketching and investigating. Various forms were obvious translations into building shapes, and overlaying and intersecting different elements would result in further investigative sketching. We decided to use an abstracted version of the flower petal to contain the living space, the heart of the flower directly relating to the heart of the home.

The other organic ulex forms directly informed the layout of the remaining floor plan, offering the ability to provide staggered bedroom zones which each privately overlook the meadow. We decided that the roof would overhang the glazed perimeter, and would be supported on internal columns, thus reinforcing the notion of the floating organic natural flower parts.

The bedrooms and office areas were designed to be low and subdued, with a natural membrane banked up and over the top, planted with native species. The garaging was sunk half a storey into the ground and also planted over. Finally, a timber brise soleil was introduced to the perimeter of the glazing which would both soften the glass and provide much needed solar protection.

We employed Arup as structural engineers for the project. Arup modelled both the grid shell roof and well as the structural columns. We were able to work up a very free flowing and organic support column, these are shown in the internal renders of the building (left). Arup also provided us with a supporting planning document which demonstrated the loadings for the roof and also offered a degree of build-ability.

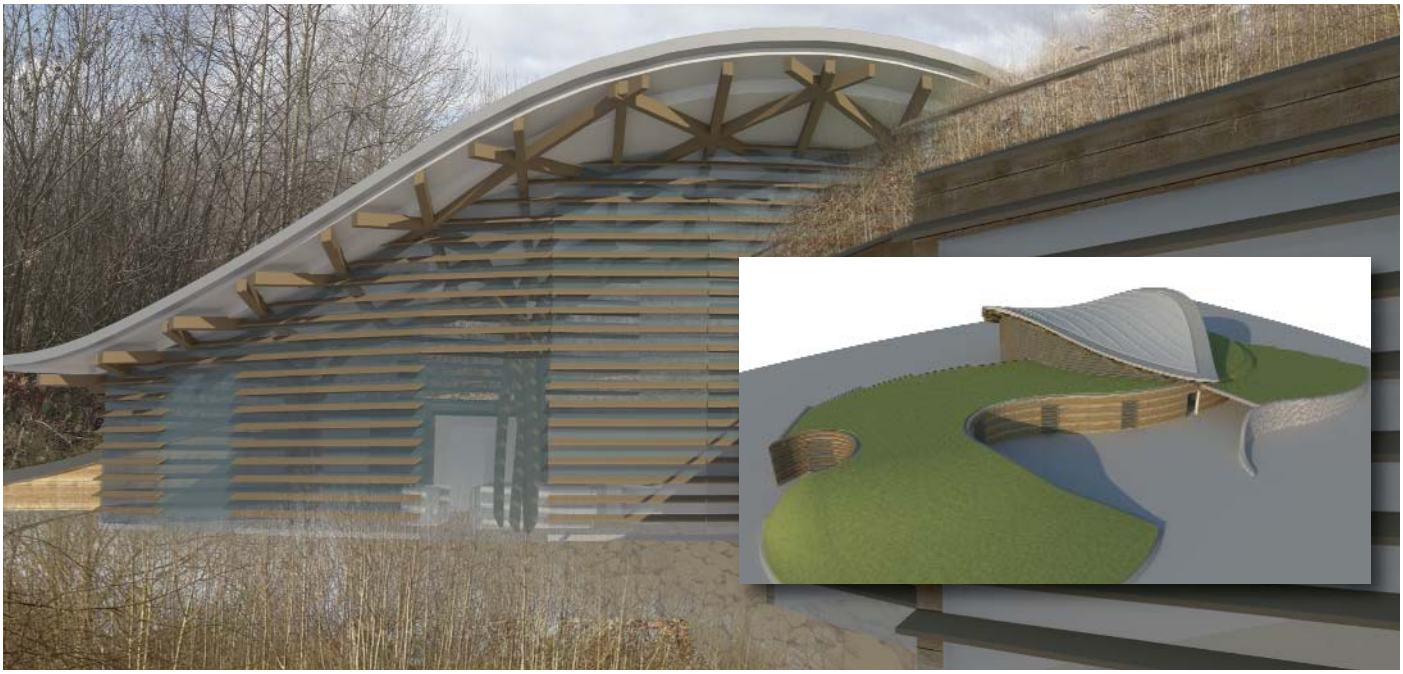
The building was rigorously tested using Thermal Assessment software to ensure that it performed well. A Code for Sustainable Homes assessor was employed to assess the project against the Code. The estimated energy demand for the building and additional measures such as waste management and ecology etc predicted the building would achieve a very reasonable code level 5.

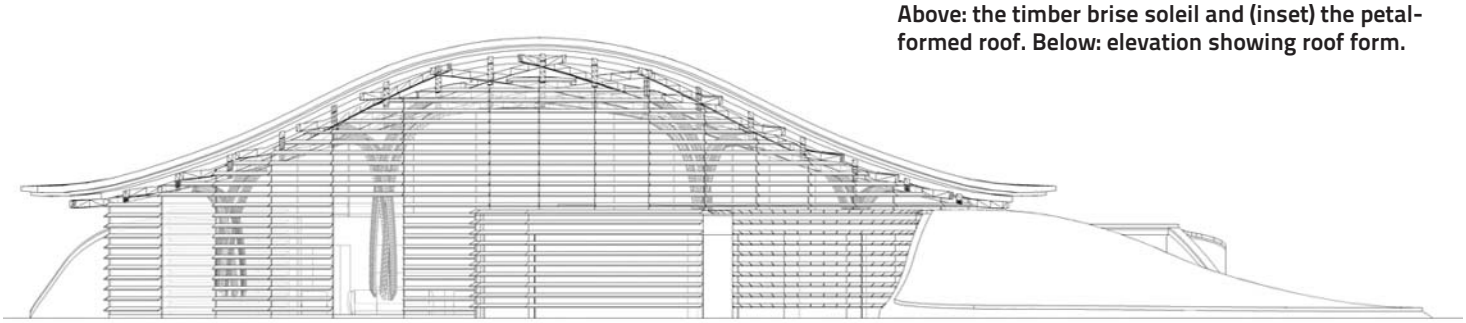
The final designs were worked up, brought together and presented to Colchester Borough Council planning department for pre-application discussions. The council offered several comments which were incorporated into the scheme. Further diagrams were produced and additional renders, which assisted in visualising the final building. Our final correspondence from the local authority was resoundingly positive. They considered the architecture of the building to be of exceptional quality and that the planning application should be submitted.

Sadly our client died shortly after the planning application was submitted. His executors have indicated that they do not wish to proceed with the plans, although local developers are interested in the possibilities of the site.

The planning application was approved on 30 May 2013. The Local Authority noted within the permission, that they felt that the proposed scheme incorporated innovative architecture, and a sustainable form of development which would achieve the standard identified in the NPPF.

Adam Jackson ACIAT works for ABS Architects in Thorpe Le Soken, Essex.





Above: the timber brise soleil and (inset) the petal-formed roof. Below: elevation showing roof form.

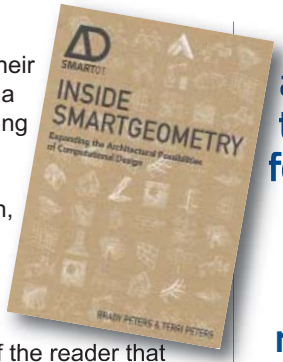
Inside SmartGeometry

Brady Peters and Terri Peters

In 2011, I was fortunate enough to attend the SmartGeometry conference in Copenhagen. As SmartGeometry reaches its tenth anniversary, this book celebrates the legacy. It delivers an inspiring story of the founders Hugh Whitehead, Lars Hesselgren and J Parrish, and their entrepreneurial spirit to develop tools to fulfil their need where no other existed.

The capabilities of the tools discussed here have provided a breeding ground for the so called style of 'Parametricism', an optimised, generative, natural architecture. At its core, SmartGeometry was founded on the desire to construct informed design solutions more sustainably; through exploration, analysis and simulation.

While all too often this approach is written off as superfluous, this book challenges that stance, arguing that every AEC project can help create a more sustainable built environment. By picturing the likes of Grimshaws and Foster and Partners next to work of undergraduates and enthusiasts, *Inside SmartGeometry* demonstrates the accessibility of these tools, their value in the construction process, and their proliferation in a new era of young designers.



I'll admit this book is a tough, technical read. A good image-to-text ratio helps to retain the attention of the reader that long forgot his GCSE maths class, and flunked his PhD in computer science.

It certainly provides an insight into a world of design many of us are yet to really dive into and for that reason, I would definitely recommend a look. The writers have delivered some stunning work over the last decade, giving them the right to take a few moments of indulgence to document the story so far.

Elliott Crossley MCIAT

ISBN 978-1-118-52247-9
Wiley. HB. 272 pages
March 2013. £29.99

'CIAT is aware of the need for books such as this to sustain research'

Architectural Technology

Stephen Emmitt

A new book has been published on research in Architectural Technology. *Architectural Technology: Research and Practice* by Stephen Emmitt, Professor of Architectural Technology at Loughborough University, demonstrates the importance of research in Architectural Technology and aims to stimulate further research and debate by enlightening, informing and challenging readers.

Commenting on the book, Professor Norman Wienand MCIAT, Vice President Education, said 'it provides at long last one of the accepted foundations needed to underpin the emerging academic discipline, namely a recognised research base. CIAT, in supporting this publication, is aware of the need for books such as this to sustain the process of research informed practice, as an aid for both students and those practising within the discipline of Architectural Technology.'

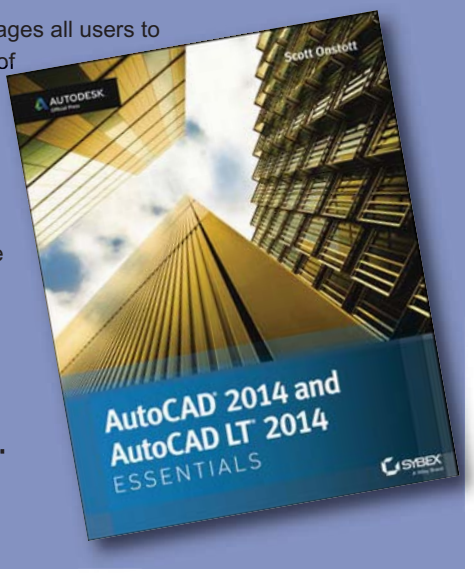
ISBN: 978-1-118-29206-8
Wiley-Blackwell. 266 pages. £53.99

AutoCAD 2014 and AutoCAD LT 2014 Essentials Scott Onstott

Split into easily accessible sections which define all areas of AutoCAD 2014; there is something for everyone in this book, from absolute beginners to those wishing to build on their existing skills and knowledge. The first three chapters concentrate on introducing the programme to those who have never used it before and deal with understanding the work and interface spaces, basic drawing skills of lines and shapes, use of co-ordinates, filleting and chamfering and the effective use of drawing aids such as snap and snap grids are all clearly defined.

Chapters four onwards are for more regular users who wish to increase their existing knowledge of all the facilities the programme has to offer, these sections deal with more complex object organization and property control such as editing entities, controlling complex shapes such as ellipses; object visibility, layers, line-weights, block and object organisation and hatch definition. Individual chapters also deal with ever more complex issues such as X-referencing, text editing, dimensioning, constraint and plotting controls. Those who wish to understand 3D modelling techniques and data usage will also find easy to understand sections on each of these subjects towards the end of the book.

The final chapter encourages all users to work towards some sort of AutoCAD certification in order to enhance their skills and make themselves potentially more employable, something worthy of note given the current employment market.



Mark Shaw MCIAT

ISBN 978-1-118-57509-3.
Wiley. PB. 432 pages.
August 2013. £33.99.

When you need help turning an innovative idea into reality...

Specification Magazine and The Chartered Institute of Architectural Technologists have joined forces to offer you an exclusive opportunity. For a limited period all CIAT members will be able to receive a monthly issue of Specification Magazine and its supplements absolutely free.

As one of the leading publications serving the Architectural and Building sector, Specification Magazine reports on the latest research and development of products and legislation that affect your industry. Don't miss out on this exclusive opportunity.

Register for your free copy today at:
www.mysm.co.uk/subscribe-CIAT

Specification
MAGAZINE

TSP Media
Grosvenor House
Central Park, Telford
Shropshire TF2 9TW
www.tspltd.co.uk
01952 234000

A salute to our students

This year's end of term exhibitions at universities with Accredited programmes showed a burgeoning talent among the next generation of Chartered Architectural Technologists. Course leaders report on the events.

University of Bolton

The Architectural Technology degree show took place on 17 May in coordination with the annual Creative Art degree show at the University of Bolton. Final year students presented their work including cotton spinning mill refurbishment for commercial use, mill refurbishment for affordable housing scheme and a sustainable housing scheme development for social housing. The show was received very well by regional CIAT representatives, professionals from industry, academics and our other prestigious guests. The show was a great opportunity to celebrate the amazing hard work on their design studio and interdisciplinary

The Mayor of Bolton (with Professor Rob Campbell, Pro Vice Chancellor) meets AT student Louisa Onion

'...employers were also impressed with the project'

Stunning designs for Kingsway, Brighton, by Joe Clark, University of Brighton.
Opposite: Design for Blaenavon Wharf offices, Newport, by Ashley Baines, Cardiff Metropolitan University.

'...the project acts as a vehicle for students to demonstrate their ability, via Architectural Technology.'

projects with their friends and family as well. The Mayor of Bolton was amongst the visitors and was truly impressed by both the quality of the work and the diversity of our students.

Jennifer Shields, CIAT Highest Graduating Architectural Technologist 2013 said 'I found the show to be a highly positive experience. It allowed me to present my work to potential employers, industry professionals and also to my husband and my family...it was great to show them some of what I had been working on.

'Looking to employment, on the night of my final year exhibition I acquired my first commission of an extensive refurbishment and extension project. Furthermore the Degree Show was open for a full week which allowed me to meet another prospective client in the setting and showcase my work, resulting in the commission of a second project.'

Nooshin Akrami MCIAT

Birmingham City University

This year's final year Architectural Technology Design Study Project at Birmingham City University saw the students develop two distinct buildings. Starting from an outline brief, the first building to be developed was a two storey internet café for a new campus complex in the centre of Birmingham. With a requirement for cutting edge and experimental technology this saw the students stretching both their and the staffs knowledge of materials and components.

From this they moved on to design an educational building for the new campus. The focus here was on specifying and detailing key junctions in the frame, cladding and finishes for these buildings. The use of small group crits and formative assessment led to a wide variety of structural form and finish from these outline briefs. With the sustainability theme running through both designs and a focus on the inclusion of a SUDS strategy, this year's projects have produced some inspired conceptual work and solid practical detailing.

FT3 student Jaspreet Sagoo *(pictured overleaf)* was inspired by the holistic approach of Japanese architecture which allowed her to encapsulate and reinforce every factor she wanted to portray, quoting Coco Chanel: 'Fashion is architecture, it is a matter of proportion.'

Paul Laycock MCIAT

University of Brighton

This year's Architectural Technology final year students worked on a scheme to redevelop an existing leisure centre and parking lot site in Hove, Brighton. The students were given the flexibility to conduct feasibility studies and propose an appropriate development scheme to the Brighton

Designs for Kingsway, Brighton, by Joe Clark, University of Brighton

and Hove City Council. At the degree show, students presented their final schemes supported with virtual and physical models. The latter was used to further investigate the functionality as well as the structural integrity of the proposed scheme.

Comment from the assessment panel which included the director of Cityzen Design LLP in Brighton, John Smith, South East Regional Education Officer, Michael Greve MCIAT and potential employers indicated that the quality and standards of the student's work at the university continues to increase year on year. Employers were also impressed with the project and some are in the process of interviewing the students for jobs in local firms.

AT final year student Thomas Holmes said 'Architectural Technology has enabled the experimentation with different software packages to ensure that phenomenal designs can be produced. Designs ensure that the building both works structurally and functionally'. *Noel Painting ACIAT*

'The work on display is only a snapshot...'

Cardiff Metropolitan University

The Cardiff School of Art and Design Summer Show is always a major event on the university calendar and 2013 was no exception. The display of final year Architectural Design and Technology design projects was particularly strong this year, a point widely acknowledged by visitors including local practices such as Capita Symonds, the sponsors of a student prize for best final year project.

This year's project was a commercial redevelopment site in the city centre of Newport. The site, known as Blaenavon Wharf, was offered by Newport Unlimited, an urban regeneration company representing both the public and private sector in attracting inward investment to the region.

The riverside site occupies a prime position in the commercial centre sitting between the new Riverside Theatre (by Austin Smith Lord) and the Newport University campus building (by BDP).The site also sits alongside a proposed major retail development in the heart of the city. Acting as developer-client and designer, our students were asked to develop a proposal for the Blaenavon Wharf site based on an open brief with the only stipulation that the proposal contain a mixed-use element. Most of the proposals were typically a commercial mix of restaurant/bar and private apartments or offices. A few considered leisure and recreational facilities whilst others proposed a heritage museum to house the rare medieval ship uncovered on the riverbank nearby when the new theatre was built. Regardless of the proposal and its viability the project acts as a vehicle for students to demonstrate their ability, via Architectural Technology, to organise a design, present their ideas and develop them as a detail design.

The work on display was only a snapshot of the students' projects. Underpinning each was a substantial amount of development work including choice of structure, construction and material specification. There was also a requirement for students to produce a detail design that complied with statutory requirements and demonstrated an understanding of the environmental servicing requirements for their building. Within less than three weeks of project completion several students secured jobs or interviews which is just reward for their skill and commitment.

The Capita Symonds award for best student project was awarded to John Muhone with commendations given to

Daniel Bees and James Morris. John Muhone also won the CIAT Outstanding Student Award whilst David Howell was awarded the School prize for contribution to the academic life of the programme. *Tony Whyman MCIAT*

University of Central Lancashire

The private view of our annual showcase of the Architectural Technology final year work took place on 14 June and our unofficial motto was 'let's make some noise about Architectural Technology'. Each year some of UCLAN's creative talents are recognised for their outstanding achievements at the University Creative Focus Awards 2013. This year Matthew Cross, from the BSc (Hons) Architectural Technology, won the Architecture Award. The Architectural Technology students had worked hard to transform the architecture studio form work space to gallery to showcase their work and had worked well as a team.

The students had embraced all forms of communication to present their yearlong design schemes. Conventional drawings, large scale physical models and a variety of other technologies were used including, QR tags to direct visitors to students' websites, Ipads to showcase students' use of 3D modelling software and animations to explain construction sequences, and Twitter and Instgram to allow those that could not attend a glimpse into the evening's events.

The event was attended by the Mayor of Preston who spent a considerable time talking to students about their projects, but also about the role of an Architectural Technology professional. The evening was a great success, not only for the students themselves who had worked so hard over the last few weeks, but also as a vehicle to promote and explain to others the role of the Architectural Technology professional. *Ann Vanner ACIAT*

De Montfort University

The Leicester School of Architecture's contribution to the degree show on 14 June included the work of graduating students from the final cohort of the BSc (Hons) ADTP – the CIAT Accredited course. The winner of the CIAT Award was Toby Hindle, who was given the award for producing excellent individual work and also for his contribution to the year as a whole. Of the final sixteen graduating students six gained firsts and a further four gained upper second degrees. They are a credit to themselves and in some cases surpassed even their own expectations. The year was roughly divided 50-50 between full-time and part-time students. The small team of staff who taught the group were delighted that the course closed on a high. Programme Leader John Stanley retired with the closure of the course. *John Stanley*

Model pupils: Huddersfield students show their work.

'Fashion is architecture': Birmingham City student Jaspreet Sagoo with her display.

University of Huddersfield

It was very encouraging to see some exceptional Architectural Technology work at the opening night of the Huddersfield University End of Year Show. The occasion culminated in the staff and students celebrating the contribution of Professor Dean Hawkes retiring after almost 12 years as our visiting professor.

Celebrating the second year in our new Queen Street Studios, the projects of the AT students provided an interesting contrast to the other courses that share the same facilities. The influence of our new Head of Department, sustainability-expert Professor Adrian Pitts is already reflected in much of the work on display. We have also recently appointed Professor Nick Temple to push forward the new university research strategy within the department.
The schemes of the Architectural Technology students were presented on computers as "rolling presentations" from each of the design projects with a medley of the best work from each year projected on walls in the CAD Suite. The commitment to sustainability was expressed by an entirely electronic submission across the entire course with a deliberate decision not to generate any 'flat-work'.

Some of the best work on display belonged to our prize-winners Toby Rainland and Tom Bowness, but strong work was also produced by second year students especially by Matt Carter, Josh Lancaster, Mike Griffiths and James Orchard. The projects produced by this particular cohort have been very promising especially their refurbishment of an historic building and their eco-house schemes.

'... an opportunity to celebrate, reflect, and anticipate our future careers'

This year's graduate schemes were based on a high-tech laboratory facility for our own engineering department and a large-scale urban project close to the centre of Huddersfield town centre. The individual projects included such diverse submissions as a sustainable urban community complex, retail outlets, a luxury hotel, a car showroom, a 'Maggie's Centre', a performing arts venue, and an art gallery. A very imaginative hydroponics centre was designed by Jonathan Allen for urban food production.

The distinctive Huddersfield flavour of challenging designs driven by technology, were very much in evidence whilst the refurbishment schemes were also carried out with great sensitivity reflecting the commitment of the course to historic building conservation.
Charles Hippisley-Cox MCIAT

Ulster says yes...Colin Orr PCIAT (left) presents the Year 2 Design Prize to Timothy McCurdy

Nottingham Trent University

This year's degree show at Nottingham Trent University from 30 May to 8 June was the largest exhibition that the course has ever attempted, placed alongside the work of students from all the built environment, product and creative arts disciplines. The professionally presented work of the final year cohort of Architectural Technology students stands comparison with anything else on display. The hard work that went into explaining their major design projects, looking at both the 'big picture' and the smallest detail was clearly evident.

Year on year, we have been increasingly challenged to develop new skills, understand complex processes, explore new techniques and technologies, investigate issues and ideas, engage in critical debate and create innovate solutions to problems. As well as demonstrating their design, technology and presentation skills, the students were preparing for their future. The student brochure commented '...we have been introduced to a range of employment possibilities, through our placement experience, and also through cultural and business orientated project work, partly in collaboration with students on the architecture course. Our show is an opportunity to celebrate, reflect, and anticipate our future careers.'

'... an ideal platform to demonstrate their excellence in Architectural Technology'

The degree show opened with 'Industry Night' on Thursday 30 May, when potential local and national employers were invited to come in and meet the students. Each student displayed design schemes for their own chosen sites and to their own briefs. Not only did they create design solutions, illustrated with beautiful renders, models and fly-throughs, but they also produced extensive construction details. The show was planned, staged and managed by the students themselves, and I am indebted to Lindsey Ford, Elliott Peters and Niall Christie in particular. My thanks also to all the other students who helped, and to Adam O'Rourke for managing the technology and design studio module. *Gavin Tunstall*

University of Ulster

Colin Orr PCIAT was guest of honour at the Architectural Technology and Management End of Year Show and Awards Evening which took place on 19 June. The show, which featured work by both Year 2 and graduating students from the BSc Hons Architectural Technology and Management course, provided students with the chance to showcase their aesthetical design skills and technical excellence and offered prospective employers and industry professionals an excellent opportunity to identify emerging talent.

'...it offered prospective employers and industry professionals an excellent opportunity to identify emerging talent'

The End of Year Show provides students with an ideal platform to demonstrate their excellence in the field of Architectural Technology. The large attendance and general interest in the event is indicative of the high regard in which our graduates are held within the industry. The evening included a Regional CPD event by the main sponsors of the evening, Mapei.

The winning students included:

Jamie Noel The Architectural Design Partnership Top First Year Award

Colin Harkin The Keystone Group Architectural Technology and Management Year 2 Prize

Timothy McCurdy Year 2 Design Prize (Winner)

Peter Magorrian Year 2 Design Prize (Highly Commended)

Jude Henderson Hays Placement Prize

Paul Hughes CIAT Region 15 Award for Technical Excellence in Design (Winner)

Paul McMahon CIAT Region 15 Award for Technical Excellence in Design (Highly Commended)

Andrew Fleming and **Nathan McKillion** CIAT Region 15 Award for Technical Excellence in Design (Commended)

Cara Loughran CIAT Outstanding Graduating Student Award

David Comisky MCIAT

University of Wolverhampton Major Project and Design Exhibition (Clockwise from top) Atif Rauf for best Presentation Technique and Model. Hayley Rollings for Best Exhibit. Rachael Darby for Best Integrated Research Project.

University of Wolverhampton

In May the University of Wolverhampton's Architecture and Design Department (ADD) hosted its annual Major Project and Design Exhibition for its Interior BSc Architecture and Property Development IAPD and BSc Architectural Design Technology (ADT) final year students.

Colin Orr PCIAT, module leader for the Major Project and Design Exhibition said 'The students undertook a brief, found a site, liaised with a client, and produced a scheme from inception to design stage… it was a great opportunity to showcase the work of the university, and many external guests from industry, education and local businesses attended'.

The event is an accumulation of the students' work over the last academic year and really did showcase their design flair, passion and attention to detail, which is very much evident in their display boards, technical data and architectural models.

Paul Boden

On the Record

Continuing his series of interviews with members, James Banks, Membership Director, spoke to Amy Timms MCIAT and Solam Sizer MCIAT about the completion of their Professional and Occupational Performance (POP) Records and how CIAT membership has helped their careers.

Amy Timms MCIAT

Tell us about your career to date.

I studied for my BA (Hons) in Architecture at Oxford Brookes University and obtained my degree and my RIBA Part 1 in 2005. I soon realised that the RIBA course was not well suited to me, as I thrive in an office environment as opposed to an educational one. I decided to change paths and become a Chartered Architectural Technologist. I attained Chartered Membership in 2011 and am currently in a small but versatile practice in Wendover, HFP Architects. I am working on projects varying from domestic extensions to hotel and apartment schemes.

Which POP Record did you complete?

I completed the 2006 Chartered Architectural Technologist POP Record which allowed me to use the experience I gained in my job to progress my qualification.

How did you approach your POP Record, particularly the sections on Underpinning Knowledge and Performance?

My degree covered most sections of the Underpinning Knowledge required, but I decided to complete them anyway as I felt I could fully understand what each section was asking me to achieve, thus ensuring I provided adequate performance evidence.

I was very fortunate that the practice allowed me to gain experience in all the required fields.

Who acted as your Supervisor?

One of the partners, Ian Hambly (an architect) was my Supervisor and mentor. I had worked for him and felt he would be able to give me an honest opinion but also the support I needed. I was also fortunate enough to have two other supervisors to help me throughout the process: Jim Tinlin and Steve Bowles, both architects.

How long did it take you to complete?

Completing my POP Record to a standard I was happy with took me approximately 15 months around my other work commitments.

How was the POP Panel Review Process?

The POP Panel Review Process is very user friendly but did seem intimidating at the beginning. I didn't pass the POP Panel Review the first time. I submitted my requested units, and was asked to provide additional information on one section (relating to project handover and completion).

Although it was disheartening not to pass first time, it proved to me that there is a high expectation of candidates which made me more determined to become Chartered.

"The POP Panel Review Process is very friendly"

How did you find the Professional Practice Interview?

It was an intense experience which was partly due to the pressures I put on myself by wanting to succeed. Despite that, on the day everyone made me feel at ease and the interview seemed to fly by. As a result of the work I had put in to complete the POP Record I felt confident in with the discussions in my interview.

Do you have any advice for candidates?

Don't think about the Professional Practice Interview until you have to! If there are any gaps in your knowledge you will have discovered these whilst completing the POP Record and then you can brush up on any areas you need to. You don't need to complete each section of your POP Record in order or on the same project, but be organised with your evidence and save it all in one place as you go along.

Are you willing to help others in your local area with their POP Records?

Yes. When I was completing my POP Record I didn't know of anyone else who had experienced it, it might have helped put my mind at rest to have a look through what someone else had done.
NB: POP Record Case studies are available at www.ciat.org.uk.

How has the qualification benefited you?

Since achieving my Chartership I have been made an Associate and I enjoy more responsibility and have a wider role. Clients and fellow consultants have more confidence in my ability but it has also improved my own confidence. It has made me feel more valued as a part of the team at HFP Architects, but also enhanced my employment value for the future. I am very proud of my achievement and also value the support of CIAT. The Institute helps me to keep current in my thinking and keep up my CPD.

Solam Sizer MCIAT

What led you to seek Chartered status?

I grew up in Bogota, Colombia where I became a Chartered Architect in 1999 after a seven year academic programme at one of Bogota's leading universities. I decided to move to the UK to study in 2000, met my future husband James, and we decided that I would settle here in the UK.

After moving to East Anglia from London, I worked as a technician for a number of small practices. I then joined a major regional design consultancy practice in 2004 as an Architectural Assistant providing full design and Contract Administration services for major school and commercial projects. I took a part time HNC in construction in 2005 to familiarise myself with UK procurement, and construction legislation. I then applied for Associate membership at the recommendation of some colleagues (who were talented Chartered Architectural Technologists). I have not looked back since.

What POP Record did you complete?

As part of my career progression I decided to begin the MCIAT POP Record. I was certain that I had a suitable academic and experience background to succeed, and saw this as a gateway to professional recognition in the UK. I was working with several very talented Chartered Architectural Technologists, who had excellent career prospects within the business.

How did you approach your POP Record, particularly the sections on Underpinning Knowledge and Performance?

I had already gained quite a bit of exemption from the Underpinning Knowledge Section of the POP Record as a result of the HNC, and felt confident that I could complete the rest from my experience both here and in Colombia. I approached the performance part with some initial trepidation. It seemed to be a vast process with some areas that I felt I did not have the correct experience for. I asked at work if I could become more involved in tendering and procurement.

> "I asked at work if I could become more involved in tendering and procurement. This gave me the confidence to begin compiling the information "

This gave me the confidence to begin compiling the information. I broke the task down into sections, completing the parts I was least confident with first.

Who acted as your Supervisor ?

My line manager Stephen Briggs, a Chartered Architect, was my Supervisor for the project. I had and still have a great relationship with him, and he acted as a constant source of encouragement throughout. He ensured that I stuck to the task, and offered hard, yet constructive criticism when required.

How long did it take you to complete?

I compiled information that I thought might be suitable for a while in advance, and then took around three months to compile the Record, which was evenings and weekends and some holiday time with the bulk of the work done in an intensive two week holiday.

This way worked for me, but some of my colleagues thought that I was a masochist! The important thing is to do it at a pace you are comfortable with.

How did you find the POP Panel Review Process?

I filled in the form, and paid the assessment fee. A few weeks later a letter arrived asking for submission of the units to be assessed. I sent away the units requested, and heard within a couple of weeks that I was to be invited for an interview, Simples!

How did you find the Professional Practice Interview?

Every effort was made by CIAT to make me feel comfortable on the interview day. The surroundings were relaxed and informal, and the interview went really well, because I felt that I was free to express myself in the way I would like.

Do you have any advice for candidates?

Choose a Supervisor who will be honest with you, and insists that you produce your highest standard of work for the Assessment and Interview. The work will speak for itself when assessed. Do not be frightened of the interview, CIAT does not bite! If you prepare yourself thoroughly, and take a concise portfolio with you on the day you will have nothing to worry about.

Are you willing to help others in your local area with their POP Records?

If you are in the Norfolk area and are struggling with the POP Record process I would be happy to help. I can be found on the list of Registered Practices on the CIAT website as SA Architectural Services.

How has the qualification benefited you?

The qualification has given me the platform to move my career to the next level. I opened my own practice in November last year. It has also given me the ability to teach (part time) various units for the Civil Engineering, Construction and Mechanical and Electrical Engineering HND courses at Norwich City College.

I also play an active role with CIAT as an Assessor for the POP process, and sit on the CIAT Accreditation Panel for the AT courses provided at UK universities. The MCIAT qualification has opened up so many opportunities for work, and I have met a large number of wonderful new people, and several lifelong friends.

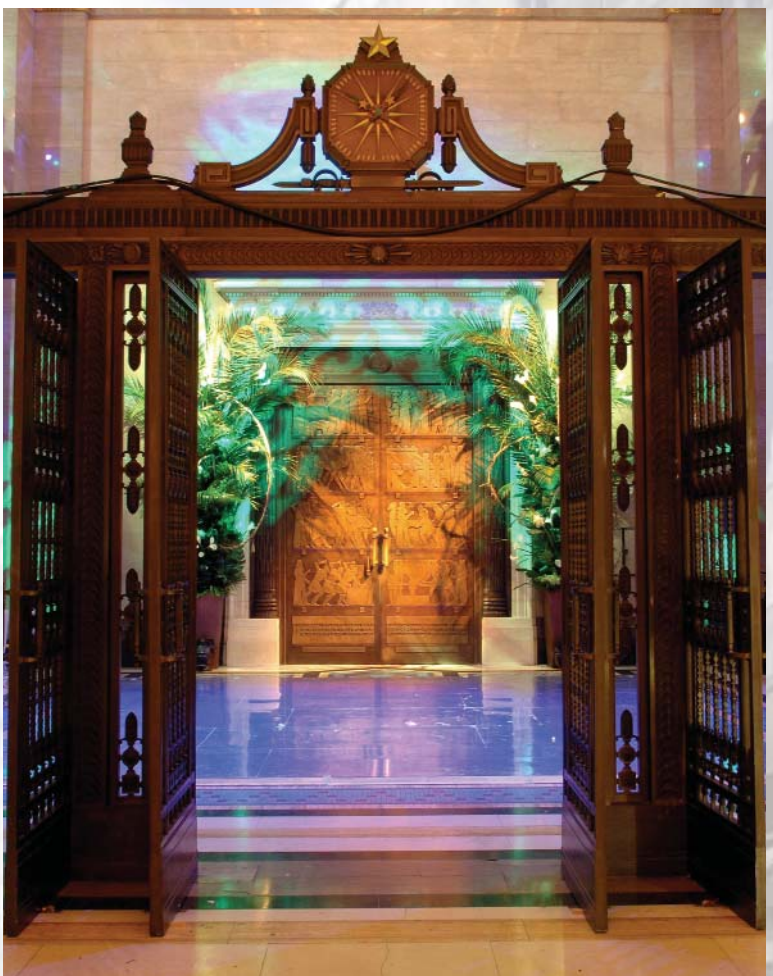
AGM 2013 and Awards Luncheon 2014

The Annual General Meeting will be held in London on 16 November, and an Awards Luncheon will be held in January 2014. These two prestigious events are ideal opportunities for networking and sponsorship.

In a departure from previous years CIAT is holding its two main events, the AGM and Awards ceremony, on separate occasions. The events will bring together over 200 CIAT members and built environment professionals — an ideal opportunity for networking.

Saturday 16 November 2013: the CIAT AGM takes place during the day at Kings Place, London. Network with fellow members and see the Institute's voting process at first hand. Non-voting members are welcome to attend and meet CIAT's decision makers.

Wednesday 29 January 2014: the CIAT Awards Lunch takes place at the Freemason's Hall, London. This high-profile event will recognise outstanding achievement in Architectural Technology and will be attended by over 150 industry professionals.



The Awards Luncheon takes place at London's Freemason's Hall.

Notice of the 2013 CIAT Annual General Meeting

Notice is given that the Annual General meeting of the Chartered Institute of Architectural Technologists will be held at Kings Place, London, on Saturday 16 November 2013 for the following purposes:

- To consider the Annual Review
- To consider the accounts and balance sheets as at 30 April 2013
- To consider the Resolutions
- To re-appoint the auditors and authorise Council to fix their remuneration
- To announce the results of the election of members to the Council and Regional and Centre Committees.

CIAT, 397 City Road, London EC1V 1NH
Mrs Francesca AH Berriman MBE, Chief Executive
September 2013

For information on sponsorship, please contact Hugh Morrison. Tel 020 7278 2206/020 3286 2201 or email hugh@ciat.org.uk


© Mopic - Fotolia.com

Becoming a Chartered Environmentalist

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

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

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

For further information please visit:

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

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

Discover the power of the group

CIAT Group Membership Scheme

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

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

Financial benefits include:

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

Other benefits include:

- eligibility to refer to the practice as 'Group members of CIAT' eg on your practice's stationery, you may also include the term 'Member of CIAT Membership Scheme' (provided that at least one Chartered Member, is either a partner, director, LLP member or is employed within the organisation)
- if five or more applicants are ready for their Professional Interview at the same time, the Interview Board can be arranged at your work place

For more information visit
www.ciat.org.uk/en/Join_CIAT/Group_Membership_Scheme/

The MCIAT Professional Assessment – a new qualifying route

What is the MCIAT Professional Assessment?

The MCIAT Professional Assessment is a flexible, rigorous, robust and quality assured qualifying process, based on performance and designed to recognise the diversity of Architectural Technology.

Candidates must provide an in-depth critical analysis clearly summarising their professional experience. This should be a reflective report and should refer to challenges and successes encountered whilst working on projects and how any issues were resolved. Applicants should also undertake a self-evaluation highlighting their strengths and weaknesses in relation to their area(s) of practice.

The Professional Assessment process is based on four core competencies:
• Designing • Managing • Practising • Developing (self)

Who can apply for the MCIAT Professional Assessment?

Any applicant working in or on, for example, academia, general practice, component design, refurbishment, small residential projects, large commercial projects etc within Architectural Technology, should be able to apply their own experience to the Professional Assessment process, but they must hold one of the following membership grades: ACIAT, TCIAT or profile candidate.

Each application will be assessed on its merit. However, each applicant will need to demonstrate a sufficient level of knowledge and understanding and professional competence/experience in relation to their sphere/s of practice and demonstrate to the Institute they can meet the expectations of a Chartered Architectural Technologist, MCIAT.

How much does it cost?

To apply for the Professional Assessment, applicants are required to pay £300 for the assessment of the application and the Professional Assessment Interview.

Chartered Institute of Architectural Technologists

For further information email our Membership Director, James Banks via james@ciat.org.uk or call us on +44(0)20 7278 2206

Plateful recognition

CIAT receives Worshipful Company of Chartered Architects Award for service to ABS

CIAT was honoured to receive the Worshipful Company of Chartered Architects Award for service to the Architects' Benevolent Society (ABS) at the WCCA's Election Court Dinner on 10 July at Skinners' Hall, London. The Award takes the shape of a hand-painted plate, which this year was designed by George Ferguson CBE PPRIBA HonMCIAT. Due to an unfortunate breakage en route, a temporary plate was issued but a permanent replacement will be forthcoming.

Accepting the Award on behalf of the Institute, Colin Orr said 'As President of CIAT, I am honoured to receive this award which is something very special to us indeed. Special, as it further demonstrates the supportive and working relationship between the Institute and ABS which we have enjoyed over many decades. The ABS has helped many of our members, Architectural Technology professionals, including their families, who have not been as fortunate as us in their working or personal life.

'I'd like to take the opportunity to remember the late John Hadland MCIAT who was our ABS representative for many years and to thank Marjorie Smith MCIAT as our dedicated representative for ABS who is also a respected and loyal trustee for the Society. CIAT looks forward to supporting and working with ABS for many more years to come.'

Dish of the day...Colin Orr PCIAT and Marjorie Smith MCIAT admire the Award

'CIAT looks forward to supporting and working with ABS for many more years to come'

Membership Progression Sessions

These free to attend sessions will provide guidance on the new qualifying process – MCIAT Professional Assessment. The presentation will be followed by a question and answer session.

Sessions will be held at the following venues:

Taunton: Corner House Hotel, Taunton – Thursday 17 October 2013

Cambridge: Royal Cambridge Hotel – Thursday 31 October 2013

Spaces are limited and will be allocated on a first come, first served basis.

Please telephone 020 7278 2206 or email membership@ciat.org.uk to reserve a place.

Are you registered?

The updated *Requirements for CIAT Registered Practices* is now available. It outlines the requirements of any member who is in practice as a principal and includes information on registration, advertising and professional indemnity insurance. Please email donna@ciat.org.uk for a copy.

Accreditation for UWE

The University of the West of England (UWE) in Bristol, was awarded its Certificate of Accreditation by CIAT in June. The picture shows Richard Helliar MCIAT (left) presenting the Certificate to Scott Hills, Architectural Technology and Design Course leader. CIAT Accreditation shows that an educational establishment's Architectural Technology Honours degree level programme has been assessed in terms of content, structure and resources and has met required standards. It also provides assurances that students will be able to develop academic and professional skills.

Plaque presentations

CIAT representatives present 2012 Awards plaques

In June President Colin Orr and CIAT representatives presented plaques for the 2012 Award for Technical Excellence in Architectural Technology. Plaques for permanent attachment on-site were presented for the following categories:

Winner: Repton School Theatre (Avery Associates Architects/Anthony Carlile Architect)

Highly Commended: Myplace @ Westfield, Folkhouse. (Lewis and Hickey/Adrian Hollis MCIAT)

Commended: Institute of Mental Health Offices, Nottingham. (Benoy/Daniel Asher ACIAT)

Speaking at the winner's presentation, Vice President Technical Kevin Crawford MCIAT reprised the judges' comments.

'Throughout the development a high level of detail and craftsmanship is noted, with the main building being exceptional and incorporating selected materials to provide an impressive result.'

The 2012 winners were announced at the Institute's AGM in Belfast last November, and the Certificate and prize were presented at the Dinner Dance held in the Titanic Building, Belfast.

The Open Award is the Institute's premier Award and is designed to recognise technical excellence in the built environment. Entrants must demonstrate their achievement of technical excellence in construction by illustrating the composition of ideas put into practice and presented in working format. The 2013 winners will be announced in November.

Clockwise from top (l-r) sponsor Kevin McParland, Anthony Carlile, Colin Orr. Colin Orr with Daniel Asher MCIAT of Benoy. Adrian Hollis MCIAT (l) with Kevin Crawford MCIAT.

NEW MEMBERS

We are delighted to congratulate the following individuals on obtaining Chartered Membership (MCIAT):

Number	Name	Region
017463	Nooshin Akrami	03 North West
019023	Graham Allen	04 E Midlands
027014	Michael Beech	03 North West
022301	Giles Boon	12 Western
014778	Daniel Boore	02 Yorkshire
022286	Ben Bourke	03 North West
026042	Paul Carter	09 Gr London
027774	Gordon Chisholm	C2 Ireland
020855	Paul Cunningham	09 Gr London
020007	James Davey	06 Wessex
019314	Brian Dempsey	C2 Ireland
22080	Neil Dolley	12 Western
013870	Louise Drysdale	00 Overseas
021792	Martin Ellis	05 W Midlands
023516	Paul Fisher	10 South East
024749	Anthony Fry	04 E Midlands
020679	Blair Gray	09 Gr London
023757	Paul Griffiths	04 E Midlands
026198	Alan Hardy	09 Gr London
027864	Timothy Hearne	07 East Anglia
023194	Jade Henshaw	04 E Midlands
017474	Ken Hodgson	05 W Midlands
015594	Shazad Hussein	05 W Midlands
018837	Stacie Janney	02 Yorkshire
027815	Tahar Kouider	14 Scotland E.
027741	Mark Kraut	04 E Midlands
020839	Matthew Lawson	02 Yorkshire
021100	Joseph Long	14 Scotland E.
018362	Steven Lucas	07 East Anglia
018638	Kevin Ma	03 North West
020129	Steven Marrison	07 East Anglia
019588	Ged McCarten	03 North West
018816	Mark Morrell	02 Yorkshire
021588	Dean Parkman	10 South East
023100	James Pulfrey	02 Yorkshire
015319	Tom Rigby	01 Northern
014396	Ross Robertson	14 Scotland E.
024773	Christopher Sharp	12 Western
024645	Peter Stead	02 Yorkshire
027773	Robin Stubbs	C2 Ireland
019635	Gareth Thorpe	04 E Midlands
016455	Aanan Varsani	09 Gr London
021923	Robert Whittle	08 Central

Re-entry
The following has re-entered the Institute as a Chartered Member:

016722	Declan Quinn	15 N Ireland

Architectural Technician
The following has obtained professionally qualified Architectural Technician status:

019231	Andrew McGuinness	09 GrLondon

Accredited Conservationist
The following member has achieved Accredited Conservationist status:

008705	John Halton	04 E Midlands

AN IDEAS & INSPIRATION EVENT ON A **GRAND SCALE**

GRAND DESIGNS LIVE BIRMINGHAM

4 – 6 OCTOBER • NEC

INTERIORS
KITCHENS
BATHROOMS
GARDENS
BUILD
TECHNOLOGY

4 – 6 OCTOBER 2013 • NEC • BIRMINGHAM

CLAIM A FREE TICKET NOW*

QUOTE 'CIATFRI'

CALL OR BOOK ONLINE

0844 854 1348

www.granddesignslive.com

Miele VELUX

Offer valid on standard admission tickets only, offer ends 3/10/13, tickets must be booked in advance, max 2 tickets per household, non transferable, all tickets will be checked and verified on entry, print at home tickets only, tickets valid on Friday 4th October 2013 only, subject to limited availability, tickets allocated on a first come, first served basis. Organised by Media 10 Ltd. Grand Designs is a trademark of FremantleMedia Limited. Licensed by FremantleMedia Limited. www.fremantlemedia.com

A Media 10 Event

North West Region 03

On 10 July Jaswant Dhillon from Liverpool John Moores University received the award for Best Final Year Student in Architectural Technology. Jaswant (below) received his CIAT Certificate (and a university certificate) from Paul Greenwood, North West Regional Councillor and Secretary. The presentation was made at the School of the Built Environment's Graduation reception held at the Britannia Adelphi Hotel, Liverpool.

Jaswant Dhillon receives his award for Best Final Year Student from Paul Greenwood MCIAT

East Anglia Region 07

On 26 June East Anglia Region hosted a visit to Renzo Piano's Shard in London, the tallest building in the European Union. The visit formed part of the Annual Business Meeting and included a talk on tall buildings by Stephen Brown.

Region 7 members reach the top of the Shard

Greater London Region 09

On 20 May Greater London Region also visited the Shard. The visit was attended by 40 people including the President as well as founder Member George Lowe PCSAAT MCIAT. It was a shame that the weather was rather cloudy but the event was highly enjoyable and interesting.

PR Director Adam Endacott (l) with founder Member George Lowe PCSAAT MCIAT at the Shard

South East Region 10

On 13 June the South East Region held an evening of presentations and CPD at the offices of Adam Architecture in Southampton, hosted by Alex Naraian MCIAT. The event, attended by President Colin Orr, included presentations on 'Measuring, Drawing, Building', by George Saumarez-Smith and 'Membership futures' by Professor Sam Allwinkle PPBIAT MCIAT.

The room was full of members from the Region which was great to see and it was a pleasure to be amongst so many enthused members. President Colin Orr said 'Our South East Region is one to admire.'

L-r: Professor Sam Allwinkle PBIAT MCIAT, Alex Naraian MCIAT and Colin Orr PCIAT

Channel Islands Region 11

A CPD event on natural slate will be held at 12.00 on 2 October at Guernsey Yacht Club. Email sevans@tda.gg to book.

Northern Ireland Region 15

In May a CPD event was held to raise awareness of the technical issues in floor and roofing product specification. This coincided with the Regional AGM. Guest speakers made a presentation to an impressive attendance consisting of CIAT members and other professionals.
At the AGM Leo Forte MCIAT was elected as Regional Chairman. Bill Johnston MCIAT, previously Education Officer, was elected as Secretary, a role admirably carried out for many years by Samuel Marcus MCIAT. Long standing CPD Officer, Eddie Weir MCIAT, stood down due to his role on the Conduct Committee. The CPD role now goes to David Comiskey MCIAT and Barry Mullen MCIAT, an indication of the importance placed on this area by the Region.

Region 15 CPD Presentation Team: (l-r) Eddie Weir MCIAT, David Traynor MCIAT (Regional Councillor), Harry Johnston MCIAT, Nigel Cook (Flowcrete UK Ltd), Neil Sanders (Renolit Cramlington Ltd), Angela Frazer (Laydex Roofing Ltd).

Republic of Ireland Centre 2

Building Regulations – Part D
The new *Technical Guidance Document D – Materials and Workmanship* has been published. It is important to be aware of the requirements for specification using the appropriate harmonised European Standards (hENs) as set out in the Construction Products Directive (89/106/EEC). In writing specifications, members should ensure that out of date/obsolete standards are not referred to. When approving a contractor's proposal to substitute another material for that specified, care should be taken to ensure that it meets the appropriate standard.

Construction Contracts Act 2013
This came into force on 29 July 2013. The legislation prohibits 'pay-when-paid' clauses, introduces a statutory right to make payment claims and a 28 day adjudication for temporary disputes. For the full text visit www.irishstatutebook.ie

Statutory Instrument (SI) 461/2012
This came into effect on 1 June. The new Health, Safety and Welfare at Work (Construction) Regulations make it compulsory for private clients carrying out domestic work to their dwelling to appoint a project supervisor for both construction and design stage.

Keep up to date with the latest news and events in your Region at www.ciat.org.uk

it eco fm SHOWCASE

Three Complementary Themes

One Outstanding Roadshow

it eco fm

Business Software Green Building Facilities Management

TUE 5 NOV 2013	THUR 28 NOV 2013	TUE 3 DEC 2013
Leeds	**London**	**Cardiff**

Media Partners

CIAT · AEC MAGAZINE · AECB the sustainable building association · BIM regional hubs · Construction Industry Council · Tomorrow's FM Tomorrow's Facilities Management · Green Building magazine

A Compago™ event www.compago.co.uk