Building Services Engineering

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building services engineering

Harm-based metrics for IAQ design

Simon Jones

CIBSE LG4 sports lighting design guide

Mike Simpson

Experience validates career choice

Finn Quinlan

ASHRAE-GES23 net zero summit

Conor Deane

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- commercial indoor AC ranges
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Contents

EDITORIAL

Are we serious about wind?

With the UK relaxing rules regarding the siting of onshore wind farms, perhaps Ireland should do likewise. According to Wind Energy Ireland, not a single onshore wind farm received planning permission from An Bórd Pleanála in the last 12 months, despite wind energy producing 33% of Ireland's electricity output in August of this year.

The UK has eased its restrictions so that onshore wind projects, supported by local residents, get approved more quickly. Local officials will have the ability to make final decisions based on the prevailing view of their communities, not just a small number of objectors.

We either accept that we need wind farms or not and, if we do, then we must remove vexacious stumbling blocks that prevent their appropriate roll-out.

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With energy efficiency gaps widening as a result of skills shortages, Paul McCormack looks at how innovation in upskilling delivery, and the role of digital in that process, can help accommodate the fact that change is the new normal.

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AIR QUALITY MEASUREMENT

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Shift to harm-based metrics

Historically, air quality metrics, mainly based on concentrations of contaminants, have underpinned ventilation standards. However, that is now likely to change to a harm-based metric where building designs are even more closely aligned with human health and wellbeing. Simon Jones analyses the implications.

WHY CHOOSE BUILDING SERVICES?

Sector needs more exposure

Finn Quinlan, who is currently completing his masters in mechanical engineering, says that first year engineering students need far more exposure to the career prospects offered by building services engineering if we are to attract more of them to the sector.

NEWS AND PRODUCTS

Two in-a-row for The Dean

For the second year running, Cork-based Wilson Architecture has been named as the only Irish winner at the prestigious International Architecture Awards.

Hosted by The Chicago Athenaeum: Museum of Architecture and Design, and The European Centre for Architecture Art Design and Urban Studies, the awards recognise 130 of the best-designed buildings and landscapes from around the world.

Wilson Architecture has offices in Cork, Dublin and China, and was recognised in the "Hotels" category for its work on The Dean Hotel, Cork. Situated in the North Docklands area of Cork City, The Dean forms part of a mixed-use development and is an instantly-recognisable black-clad structure.

BSS Golf at Palmerstown

The BSS annual golf outing took place at Palmerstown House Estate Golf Club, Co Kildare, and was a 3-ball team event with a total of 13 teams participating.

Conditions were perfect with no rain, no wind and plenty of sunshine. The day concluded with a full meal and the presentation of prizes.

The winning team was made up of Brendan Coghlan, Noel Kelly and Brian Murphy, with Tony Murphy, Michael O'Herlihy and Martin Murphy the runners up.

Winners – Brendan Coghlan (retired BSS) with Derek Murphy, BSS, Noel Kelly, Brian Murphy and Ken Clare, BSS.

Runners up – Tony Murphy with Michael O'Herlihy and Martin Murphy.

Clancy opens Cork office

Clancy Construction has opened a new office in Cork city centre, solidifying its commitment to the Munster region. Headquartered in Thurles, and with an office in Dublin, it now employs 150 people nationwide with the Cork office currently employing 50 working on a range of projects.

Michael McGrath, TD, Minister for Finance with John O'Shaughnessy, Managing Director, Clancy Construction.

The company has been involved in several high-profile developments in Cork recently, including a 554-bed student accommodation project and a 30-bed ward extension at the Mercy Hospital. It is also working on several residential projects including a social and affordable housing scheme in Boherboy Road, 30 social units in Blackrock and a housing development in Tower.

Clancy Construction has an extensive portfolio of projects including residential, commercial, healthcare, hospitality, education and leisure. It also has considerable experience in conservation and restoration projects.

New EDC Associate Directors

Engineering consultancy EDC has appointed Bernie Burchill and Martin O'Sullivan as associate directors.

Burchill becomes EDC's first none-engineering (Technical) Associate Director while O'Sullivan's role is Associate Director Electrical.

Newly-appointed EDC associate directors Bernie Burchill and Martin O'Sullivan.

Celebrating 20 years in business in 2023, EDC boasts an impressive portfolio of over 1,500 successful projects across Ireland, the UK and Africa. It has experienced significant growth over the last two years, and now employs 100 people across offices in Cork, Dublin, Limerick, London, Istanbul and Galway.

Arch Expo 2023

Architecture + Building Expo, the construction industry showcase held in partnership with the RIAI Annual Conference, will take place in the RDS Main Hall on 11 and 12 October 2023. Note the dates in you diary.

NEWS AND PRODUCTS

Condair appoints new service engineer

Condair has appointed Desmond Colbourne (pictured) as a service engineer based in Dublin, supporting Condair's humidifier and dehumidifier customers across Ireland. Desmond has over 18 years' experience as a field service engineer, having worked with companies such as Intel, Seagate and Danaher.

Tony Tullett, Service Director at Condair, welcomed Desmond to the Condair service team. "He is a very well-qualified and experienced technician and, having him based in Dublin, enables us to rapidly respond to the needs of Irish customers."

Desmond commented: "It's great to be starting this new challenge and supporting the humidity control requirements of clients in so many different industries. Condair operates in a huge variety of sectors, from data centres to food manufacturing, and museums to printing. Humidity control is necessary in so many commercial processes and I'm looking forward to getting to know the products, people and places."

Condair offers planned maintenance agreements and reactive servicing for an extensive range of humidifiers and dehumidifiers. A planned maintenance agreement from Condair provides improved unit performance, reduced rates for labour and spares, free delivery on parts, priority callouts and extended warranties.

Contact: Desmond Colbourne, Condair Service Engineer.
E: desmond.colbourne@condair.com

Kirby opens Cape Town office

Micheál Martin, TD, Tánaiste and Minister for Foreign Affairs, was in Cape Town recently to open Kirby Group Engineering's first base outside Europe.

Established by brothers Tom and Michael Kirby in Thomondgate in 1964, Kirby Group is now a leading provider of mechanical and electrical engineering contracting services worldwide. It employs over 1400 staff across nine European countries and it recorded a turnover of more than €454m in 2022.

The company's Cape Town team will be made up of engineers, quantity surveyors, talent acquisition specialists and others who can contribute to projects on an off-site basis.

Our picture shows Jimmy Kirby, Executive Chairman at Kirby Group Engineering, with Micheál Martin, TD, Tánaiste and Minister for Foreign Affairs and Fionnuala Gilsenan, who is Ireland's Ambassador to the Republic of South Africa.

Understanding IEQ in EPBD draft

REHVA, Nordic Ventilation Group and EUROVENT have published a common proposal on how to implement the indoor environmental quality (IEQ) requirements introduced by EPBD under revision. These new provisions – added by the Commission's and Parliament's initiative – represent an important step forward to assure healthy and comfortable IEQ in buildings.

In this document, IEQ substance and requirements are explained on just a few pages. It is shown which items need regulatory effort and which aspects can be left for technical guidance documents such as European standards or national technical guidance. Guidelines and examples are presented on how an essential IEQ requirements can be implemented on national level. Also, some minor, but important changes are suggested to make Article 11a implementation technically and economically feasible.

See www.rehva.eu

Campbell appointed Technical Services Manager at Mitsubishi Electric

Sean Campbell has been appointed Technical Services Manager at Mitsubishi Electric. Sean has been with the company for many years and has held various senior positions, including his most recent of Heating Product Manager.

The Technical Services Manager is a new role that combines both pre-sales and after-sales support under the same umbrella. This will make for a more streamlined and effective support pipeline to customers with Sean leading two teams.

Pre-sales will offer design support, unit selection, pricing and handover to the after-sales team and it, in turn, will work with pre-sales' designs to deliver projects at installation support, commissioning and on-site support stages.

The team will also be responsible for assessing new products for the Irish market and putting together product launches.

Contact: Sean Campbell, Technical Services Manager.
T: 01 – 419 8800; M: 087 – 765 7244; E: sean.campbell@meir.mee.com

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NEWS AND PRODUCTS

ORS acquires GSP Fire

ORS has acquired GSP Fire Ltd, a fire safety and disability access consultancy based in Waterford and Kilkenny. The value of the transaction is not disclosed.

Following the deal, ORS will gradually assume operational control of GSP Fire. The emphasis will be on creating a seamless integration process that maintains stability and fosters collaboration, benefiting employees and clients from both entities.

John Brennan, Managing Director of ORS said: "The alignment of ORS's multi-disciplinary services with GSP Fire's fire safety expertise positions the company to provide the comprehensive solutions that meet evolving industry demands in this sector."

Pictured at the formal signing of the takeover of GPS Fire Ltd by ORS were (l-r): Brain Collentine, Director, ORS with John Brennan, Managing Director, ORS; Ger Hodson, Director, GSP Fire; Lory Holland, Director, GSP Fire and Joe Twomey, Director, GSP Fire.

Water & Wastewater Expo

The All-Ireland Water & Wastewater Expo will be held in the Leopardstown Pavilion at Leopardstown Racecourse in Dublin on Thursday, 23 November. The event brings together key stakeholders from the municipal, industrial and domestic water and wastewater community. It will incorporate a full conference programme and an exhibition area displaying the latest technological solutions and commercial services available that meet evolving industry demands in this sector."

Glen Dimplex acquires Hyfra

Glen Dimplex has agreed a deal to buy the German-based Hyfra process cooling business from the Lennox group. The transaction is expected to be completed before the year end.

Hyfra provides precision cooling applications for the car industry, electric vehicle manufacturing and electric charging. Glen Dimplex already has two businesses in Germany and this acquisition will bring its headcount in that country to over 1500 people.

This buy-out follows other recent acquisitions that include Adax, a Lithuania-based supplier of electric heating appliances; a minority stake in Wener Finlay, an Indian cooling business; and the remaining 30% stake in the Muller Group that it did not already own.

Fergal Leamy, Chief Executive, Glen Dimplex with Fergal Naughton, Executive Chairman.

More opt for engineering

The continued upward trend in students selecting engineering courses at Irish third-level institutions comes at a welcome time for the profession as the demand continues to outstrip the supply in the engineering sector.

"We are seeing new job opportunities for graduates and increasing salaries within the engineering sector, but there continues to be a shortfall of engineers to meet the needs of industry," said Damien Owens, Director General of Engineers Ireland (pictured above).

"Nonetheless, we are encouraged by the 5% upward trend in interest in engineering courses", he continued. "Our future engineering graduates will be central to the successful delivery of ambitious infrastructural and technological initiatives, and will be uniquely placed to support our climate goals and ambitions."

NEWS AND PRODUCTS

Apprenticeship roll-out

Drogheda College is Ireland's first further education and training (FET) centre specialising in the delivery of the electrical apprenticeship programme.

Demand for apprenticeships in Ireland is exceptionally high and Drogheda College Donore FET campus will deliver training for over 300 electrical apprentices annually. The €4.2m investment will also create up to 20 new permanent jobs in the region.

Drogheda College is housed in a 2,170sq m building occupying a strategic location north of Dublin with rapid access to the M1 corridor and close to local facilities in Drogheda. It will deliver eight separate electrical programmes presented by a team of experienced instructing staff.

Electrical apprentices Sarah O'Connell, Amy Hynan and Rachael Walsh pictured at the Drogheda College.

BSRIA NetZero guide

BSRIA has just published *NZG 3/2023: The Global Context for Net Zero*, the third edition in the series of net zero guides published by the Net Zero Building Centre.

The first in the series, *NZG 1/2022 Net Zero Carbon Buildings*, provides an introduction to the topic of net zero and discusses the complex issues involved.

The second, *NZG 2/2023: Indoor Environmental Quality and Net Zero,* considers how the various components of indoor environmental quality impact net zero, and how they interact in a holistic design approach.

Garrett White, Hevac with overall winner, Niall Abbot.

Hevac golf at Palmerstown

Once again the recent Hevac/Tubeco annual golf outing at Palmerstown House proved a major success with the capacity attendance enjoying the course and the wonderful hospitality of their hosts.

Barry Muphy was the compere/speaker for the occasion and his ongoing commentary kept all 80 participants in attendance well entertained.

Overall winner was Niall Abbot, while the winning team was Copper B Press. Team Conex Compression came second and Team Conex Pushfit third.

Winning Team – Garrett White with Tom Carroll, Brian Carroll and Emmet Purcell. Other team member was Shane O'Neill.

Category 1 winner Ted Walsh with Garrett White.

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Golf at Luttrellstown

CIBSE golfers weather the storm

With the Luttrellstown Castle golf course again in pristine condition for the recent CIBSE annual golf outing, the participants were all but salivating in anticipation of some high scores. They were not disappointed. However, the only problem for some was that, having performed extremely well, they found themselves pipped by an exceptional score from the winning EICL team.

As usual, a capacity 25 teams took part in the annual event with sponsors Unitherm Heating Systems presenting a wonderful array of prizes and packed, energy-boosting goodie bags.

The weather delivered up typical "new normal" summer conditions – sunshine and warmth for the most part, and then absolutely torrential downpours, one in particular that thoroughly drenched everyone. The threat of thunder and lightening always lingered but, save for a few teams who had to miss out on the

Despite the lingering threat of thunder and lightening, the golfers enjoyed near-perfect conditions on the pristine Luttrelstown course.

SECOND TEAM: MITSUBHSHI ELECTRIC – Pat Kelly with Adrian Catchpole, CIBSE President, Darin O'Connor and Dermot Murphy. Team member missing from the image is Terry Warner.

WINNING TEAM: EICL – Stephen Weir, Chair, CIBSE Ireland with Christian McDermot, Adrian Catchpole, President, CIBSE; Sean McMahon; Michael Clarke; Stephen Gunning and Chris McClelland, Director, Unitherm Heating Systems, sponsor.

last hole when conditions became more ominous, there was no real disruption to play.

The day belonged to the EICL team which won the tournament with an exceptional net score of 55 while playing off a team handicap of seven.

A score of 58.1 ensured the runners-up place for Mitsubishi Electric who just pipped the third placed Grundfos team which had a fine net score of 58.2.

Apart from the golf, the shotgun start made for a great networking occasion and ensured that everyone was also present for the meal and presentation of prizes.

The occasion was also a fun-filled day and our photographer was on hand to capture every team and almost every swing (some good, and some not so good). Judge for yourselves at this link https://tomcoakleyphotography.pixieset.com/cibsegolfday-luttrelstowngolfclub/

THIRD TEAM: GRUNDFOS – Brian Hennessy with Adrian Catchpole, President, CIBSE and Kevin McCormack.

Nearest the pin 15th hole (42cm): Christian McDermot.

Nearest the pin 4th hole: John Brennan.

The Society of Light and Lighting (SLL) recently published the revised *Lighting Guide LG4: Sports Lighting*. The Chair and author was Mike Simpson (right), Global Application Lead, Signify. Here he outlines the background to the new guide and explains some of the rationale behind the contents.

Updated Lighting Guide LG4

How to design future-proofed sports lighting

LG4 has been the long-standing SLL guide to sports lighting and reflects current trends, both in terms of the sports themselves and lighting techniques. Since the last guide was published, we have seen the growth in participation at an amateur level, new sports becoming popular, and greater coverage from broadcasters. We have also seen a technological revolution in lighting with the switch to LED and the demise of traditional light sources. In 2018, EN12193 – the European standard for sports lighting - was published. Our task group included authors from that work to ensure harmonisation. All of these have driven the updates to the latest edition of LG4.

The guide covers specific individual sports as well as other playing and recreational areas, taking into account a number of different factors:

- The players have to be able to see in order to perform to their optimum level. Small balls moving fast require more light than large balls moving slowly. The level of play will also have an influence on the speed of the action and hence the visual task. Usually, the higher the level of play, the more stringent the lighting requirements;
- The spectators may be watching at close distance or at the back of a stadium so the lighting must enable everyone present to see the action;
- These days, television plays a hugely important part in making sport available to the widest possible viewing audience. However, as an audience we are no longer satisfied with the wide picture showing all the action. We now demand close-ups showing the strain on the competitors faces, multiple camera angles (including from aerial ones) and instant slow motion replays. Picture quality has gone from HD to 4K and to 8K. Broadcasters are continually looking for greater impact and are presented with the latest broadcasting technology to achieve this. The lighting must ensure that the highest quality pictures can be obtained.

Many people may just use the guide to look at the specific lighting requirements for a sport, but within the guide there is plenty of advice on all aspects of an installation and it represents a summary of the many years of experience by the authors. This experience is drawn from practice and includes the potential pitfalls to assist those designing a new sports lighting installation.

In the guide, specific recommendations for individual sports are outlined, whether played indoors or outdoors. This is where you will find advice for 51 individual sports, from archery to wrestling. In some cases the governing body may have established the lighting requirements and these should also be considered. However, for many LG4 will be the primary reference source. In all cases we have been careful to align with other standards to avoid confusion. Within these individual sections some new sports are included that had not been previously mentioned. After much debate greyhound racing was taken out, although if you are planning to light a track the old guide can always be referred to.

Larger indoor and outdoor venues, whether single-use or multi-use, have their own section. For these the siting of the lighting is critical to achieving the correct performance and minimising glare. This is something that needs to be considered at the earliest possible stage of the design as lighting positions rely on the physical structure of the venue. If this is overlooked, it can be impossible to achieve the right lighting result as the mounting positions do not exist. Often structural decisions are taken before the lighting designer is on board.

In particular, broadcasters need to ensure that the lighting will deliver good-quality pictures from all camera angles while, at the same time, ensuring the lighting does not cause flare in the camera lens or other unwanted reflections in the playing surface. An addendum to the previous edition of LG4 was issued to take account of updated requirements from some broadcasters, in particular the flicker caused from discharge lamps. With the introduction of LED sources, cameras can now operate at high shutter speeds for slow motion without any specific measures being taken. Similarly, for 4k and 8K broadcasting, it has not been necessary to increase levels. However, uniformity and colour consistency are now more critical.

In the past the guide has followed typical practice which meant that the whole range of traditional light sources would be used – typically, fluorescent for indoor or high intensity discharge (HID) for larger indoor and outdoor. With HID we had to consider the effect of power failures and the time it took for the lighting to come back to full illuminance. This is still a requirement, particularly for fast-moving sports where they need to be brought to a safe conclusion.

Many smaller recreational schemes would use high-pressure sodium with an acceptance of its poor colour qualities. It

was also not possible to dim HID which meant providing different light levels had to be done by switching, not always the easiest way to maintain uniformity.

The new LG4 has been written for the future and the assumption that all new or refurbished projects will be using LED. Dimming is possible and there is no longer a time to wait for the lights to come on following a power failure. Practically, the poorest colour rendering LED is above Ra70 so the minimum recommended colour rendering in the guide has been uplifted to Ra>70 for outdoor applications and >Ra80 for indoor settings. Players in particular will appreciate the better quality of light in the future.

One big plus for the LED is that it now outstrips all previous light sources in terms of efficacy which means less energy use than before. This is just one of the environmental considerations addressed in the guide. The other is the growing demand for the control of stray light from sports installations. For larger stadia the light tends to be contained within the stands, but for community and recreational activities there is little to stop the light shining onto adjacent buildings or into the sky. It is these situations where the lighting is likely to be used into the evenings. Specific criteria to manage this challenge are included and refer to well-established guidelines. Additionally, with LED sources, light control can be better. This means that environmental concerns can be satisfied at the design stage.

The new LG4 is essential reading for anyone involved in lighting for sport and leisure, and will ensure that the lighting is designed to the highest standards and future-proofed.

The SLL is a division of CIBSE and members of both bodies receive free, unlimited online access to guides via the CIBSE Knowledge Portal.

For specific queries on LG4 contact: sll@cibse.org ■

> The new LG4 is essential reading for anyone involved in lighting for sport and leisure.

INSUL-PHEN

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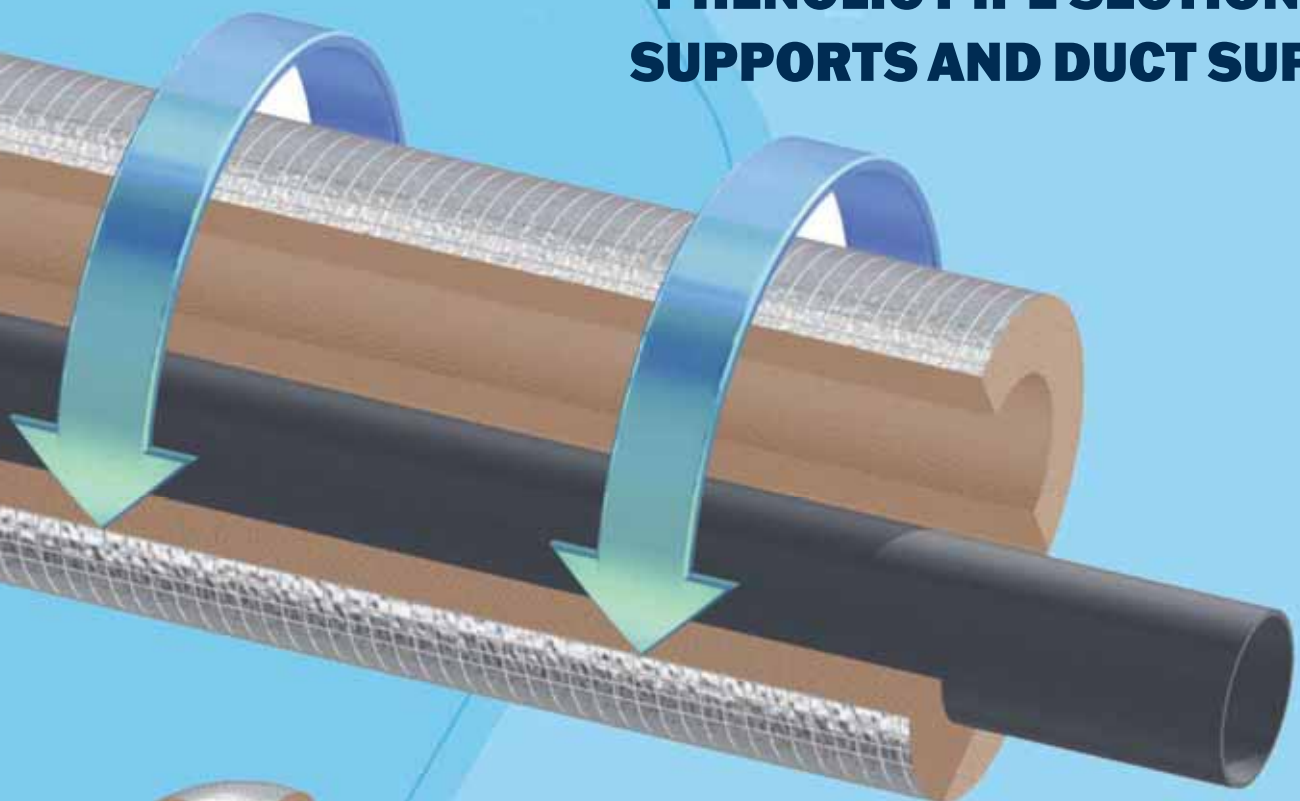

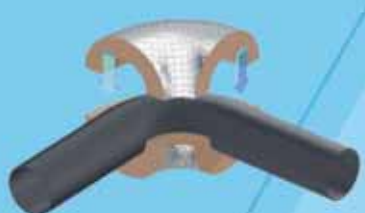

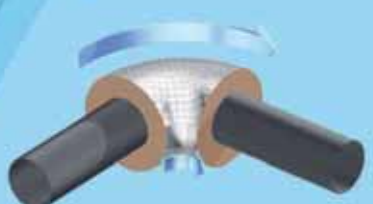

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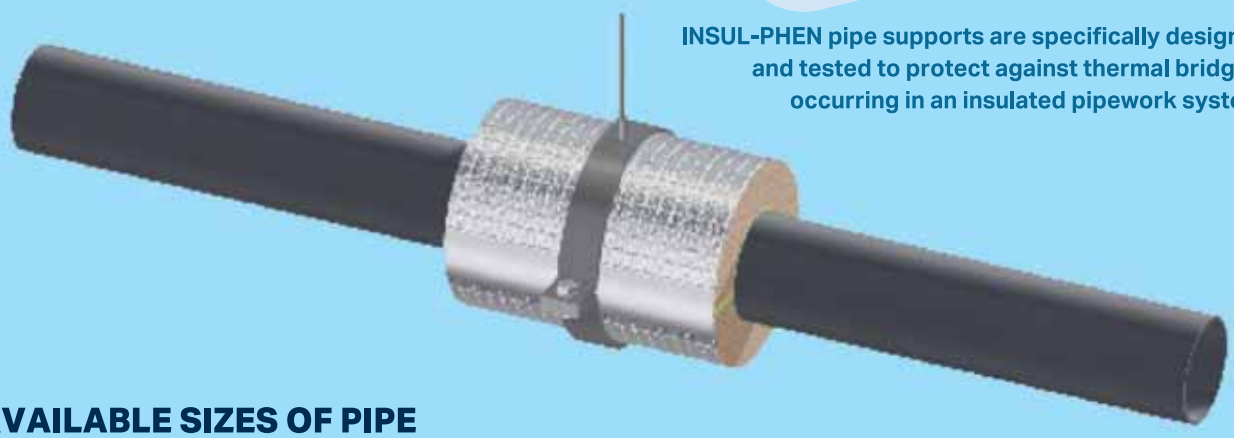
Thermal bridges, also known as cold bridges, are weak points (or areas) within a system that allow heat to pass through more easily. They occur where materials which are better conductors of heat are allowed to form a 'bridge' between the inner and outer face of a system. The standard BS 5970 Thermal insulation of pipework, ductwork, associated equipment and other industrial installations in the temperature range of −100 °C to +870 °C – Code of practice (revised in 2012) included a significant change in direction regarding the support of pipework in insulated systems. It states that Insulated Pipe Support Inserts should be used, and the Pipe Support Bracket be fixed over load-bearing insulation of the same material (or compatible with) the insulation on the pipe.



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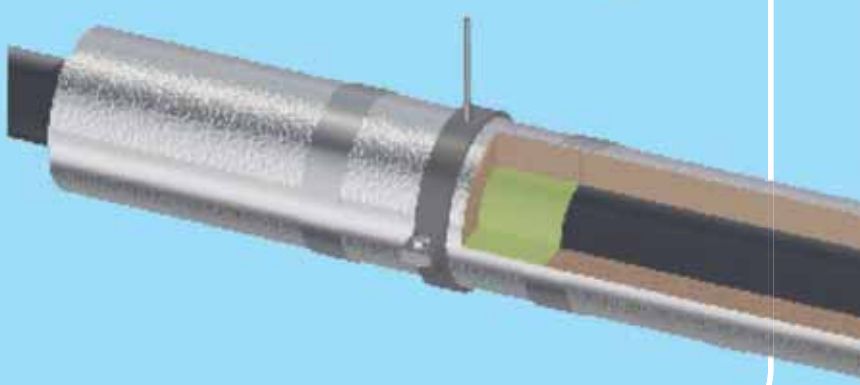

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Inch	mm	kg/m	litre	kg/mm	m	kg/m	kg/mm	m	kg/m³	kPa	kg/cm²	kg	m
20	508.0	118.88	187.77	187.77	50	3.51	310.16	200	120	850	1.7	904.4	2.6
24	609.6	143.11	273.91	273.91	50	4.14	421.162	00	120	850	1.7	1085.2	2.6

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BTU GOLF NEWS

BTU President's outing at Newlands

After a hugely successful day celebrating 50 years of the BTU Golfing Society in Powerscourt, the society quickly moved on to Newlands Golf Club for President's day. This year's President, Vincent Broderick, was there to greet members and their guests on what proved to be a beautiful day.

Sponsor on this occasion was Sirus Controls and the goodie bags given to those playing made everyone feel like a winner even before they went out. The actual prizes were also fantastic on the day.

The golf course was particularly challenging with some members comparing the speed of the greens to courses like Augusta. Isn't it well for those who have played it!

A total of 40 golfers played before retiring for a sumptuous meal and the prizegiving. The winner was a popular former Captain, Gerry Tobin, and he spoke at length about having fulfilled a golfing ambition by winning the President's prize of the BTU.

Photo inset above shows Brendan Coghlan, winner Class 3.

Vincent Broderick, BTU President with Overall Winner, Gerry Tobin and Martin Keogh, Business Development Manager, Sirus, who sponsored the outing.

Vincent Broderick with Peter Keogh and Martin Keogh.

Vincent Broderick with Ger Hutchinson, winner Class 1.

Bryan Keaveny, winner visitors' prize, with Martin Keogh.

Results

Overall Winner
Gerry Tobin with a great score of 39 points.

Class 1
First: Gerry Hutchinson
Second: Dessie Haughton
Third: Robert Kenny

Class 2
First: Michael Kearney
Second: Stephen Jones
Third: John Littlefield

Class 3
First: Brendan Coghlan
Second: Frank Lynch
Third: Stephen Costelloe

Visitors Prize
First: Brian Keaveny
Second: Richard O'Farrell

Grant Vortex Module 26kW.

Grant's award-winning HVO biofuel-compatible boiler

Grant has been at the cutting-edge of sustainable and innovative product development for over 45 years and, with its current enviable product portfolio, it has largely transformed into a renewable heating company.

The Grant Vortex was one of the first condensing oil boilers on the market and this unique product was the catalyst for a sustained increase in boiler efficiencies and reduced running costs throughout the industry. The higher efficiencies from these appliances have, over the past two decades, contributed to a reduction in carbon emissions on the island of Ireland amounting to many millions of tonnes.

In 2021 the company made a significant investment in a major R&D breakthrough when it developed the award-winning Grant Vortex condensing boiler range. This HVO biofuel-compatible boiler will ultimately help reduce carbon emissions, especially in rural and other hard to heat properties. The breakthrough will also help prevent property owners from incurring the high cost and disruption associated with deep retrofitting when upgrading their home for its future heating needs.

The use of 100% HVO can result in around an 88% reduction in carbon emissions and, using this or a percentage blend of HVO with kerosene, will enable properties to transition to a renewable green alternative from 100% kerosene at an affordable cost, with minimum disruption to everyday lives.

More HVO suppliers

While HVO is a relatively new fuel to Ireland, we are now beginning to see more HVO suppliers come to the market, with a new facility having just recently been opened in Co Cork by HVO biofuel "giant", Green Biofuels[1].

For those upgrading a heating system, all Grant condensing boilers have been manufactured to use HVO through making a slight modification to the boiler, such as adapting the size of the fuel nozzle and fuel pump pressure. Older Grant condensing boilers can also be easily adapted to HVO, but this may require a new biofuel burner that is matched with the specific boiler.

Since its introduction, the HVO biofuel-compatible Grant Vortex range has been recognised by multiple award bodies for its "ahead of its time" innovation. It was "Innovative Product of the Year" at the NI Plumbing & Heating Awards 2022, "Best Renewable Energy Product" at the SEAI Energy Show 2022, and a finalist in the sustainability category at the *Irish Times* Innovation Awards 2021.

The Grant Vortex and Euroflame boiler ranges are available to those in the plumbing and heating trade in 22 models with outputs from 15kW to 70kW, and are suitable for boilerhouse, outdoor, combi and utility room installation.

Grant's innovative range of heating technologies will continue to be developed with a view to driving the heating industry forward towards realising a zero-carbon future.

Visit www.grant.ie for more information on Grant's range of innovative heating solutions. Follow Grant on Facebook and Twitter @GrantIRL or Instagram @Grant_IRL. **Think Heating. Think Grant.**

Reference

1. https://biofuels-news.com/news/green-biofuels-officially-opens-new-facility-in-ireland/

C&F offers quality system solutions for both retrofit and new build commercial projects

C&F Quadrant is one of Ireland's leading suppliers of renewable, heating and plumbing products, boasting a portfolio of market-leading brands catering for both commercial and domestic applications. With offices in Dublin and Belfast, and a full network of regional representatives and merchant trading partners, comprehensive all-Ireland coverage is assured.

C&F Quadant office and warehouse headquarters in Dublin

Complementing and supporting the extensive product portfolio is a team of highly-qualified, engineering-led, personnel. Experience runs to the core of C&F Quadrant with long service commonplace at all levels, from trade counter personnel through to technical support, field sales engineers and back-up administration. This long-service feature is mirrored in the many long-standing trading relationships it enjoys with many of its suppliers, some of which date back 20, 30 and even 40 years.

Today's commercial and large domestic projects demand system solutions, as opposed to the supply of one or two products and some accessories. C&F Quadrant recognises this and so, in addition to the expansive product portfolio, provides full engineering design assistance on all projects.

Fully-qualified and experienced engineering personnel liaise, where appropriate, at the earliest opportunity with the design consultant, contractor and client to ensure that the best possible solution is arrived at. Apart from an understanding of the strengths of each product and the related ancillaries that make up the overall system solution, they also provide advice on energy usage, lifecycle returns on investment, regulatory compliance and carbon reduction.

C&F Quadrant runs regular training programmes and CPD-accredited seminars/lectures for both commercial and large domestic installers to help them keep abreast of the latest developments, and to advise them of changes that are coming down the line.

In addition, it has display centres strategically located at various merchant stockists throughout the country so that product and topic-specific training and CPD programmes can be delivered at a local level.

C&F Quadrant is not just about product supply ... it is about delivering cost-effective building services solutions using quality products from market-leading manufacturers.

C&F Quadrant has identified and partnered with market leading, global manufacturers of heat pumps, chillers and fan coil units in an effort to help companies decarbonise

C&F QUADRANT

CREATING A QUALITY ENVIRONMENT

Dublin: +353 (1) 630 5757
Belfast: +44 (28) 90 36 55 55

Email: sales@cfquadrant.ie

Excellent products supplied and supported by C&F Quadrant

AIC

The AIC range of Nesta wall-hung and floor-standing, high-efficiency condensing boilers are suitable for medium and large residential and commercial installations. They are perfect for either retrofit or new-build projects and are available in outputs ranging from 45kW to 1200kW. The main benefits of the units are their unique "Fire Tube" stainless steel heat exchanger design. The internal pipework is also made from stainless steel and this provides increased reliability. AIC also has a range of water heaters in the "CoilMaster" and "Texas" units offering continuous flowrates up to 6,989 l/h at 40°C.

Flamefast

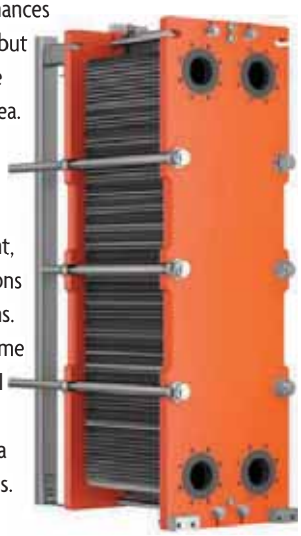
The Flamefast gas sensor (FGS) is a state-of-the-art fixed gas detector suitable for use with a wide range of gases and applications. It can be powered from and interfaced directly with a Flamefast GasGuard system or building management system (BMS) using its digital and analogue outputs, as well as being able to connect into much larger systems with a multi-channel controller. This high-specification and cost-effective gas detection solution offers complete protection from gas leaks and is ideally suited to industrial and commercial applications.

Keyter

C&F Quadrant is renowned for the quality commercial solutions the company offers and that reputation has been enhanced with the introduction of the Keyter range of heat pumps and chillers. With heat pumps operating on R-290 refrigerant and outputs of up to 270kW, high-output, low GWP units are at the forefront of Keyter technology. The portfolio is further strengthened by the Keyter range of chillers that operate on R1234ze refrigerant with outputs of up to 992kW.

Hexonic

The "JAG" plate and frame heat exchanger from Hexonic incorporates a patented jagged pattern that not only enhances flow turbulence, but also increases the heat exchange area. This makes the units more compact, lighter and more efficient, and offers solutions for all applications. The plate and frame units are all "AHRI Certified" so are approved for data centre listallations. To complete the product portfolio, Hexonic also offers brazed and shell and tube heat exchangers



Polar Air

Polar Air is a global manufacturer of fan coil units that is represented in over 27 countries. It has over 1,800 product configurations and strives to make the most energy efficient fan coil units on the market. The company has a complete range of EC and AC hydronic fan coils, is Eurovent, AHRI performance and sound listed, as well as having CE and ETL approvals.

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Unit 15,
Abbey Business Park, Mill Road, Newtownabbey
Co Antrim BT36 7BA
Tel: 02890 365555
Fax: 02890 365565

The Wilo-Isar BOOST5 can be used universally for domestic water supply and always provides constant water pressure at all extraction points.

Optimum water pressure ... wherever, whenever

Wilo-Isar BOOST5 is an integrated system for boosting domestic applications that combines an electric pump, electronics, an inverter, non-return valves and a control panel. It is easy to install and can be used effectively in a wide range of residential applications where there is a need to pressurise water. This includes the distribution of water inside residential units, the supply of irrigation systems, and the withdrawal and distribution of water from rainwater collection tanks or reservoirs. In fact, it is suitable for pumping all clean, non-aggressive water free of suspended solids.

Wilo-Isar BOOST5 incorporates an inverter to deliver constant water pressure according to actual user needs. This flexibility and ability to adapt to the demands of the user also make it efficient in terms of reducing energy and water consumption. An added bonus is that it is particularly silent in operation, making it suitable for installation inside the dwelling.

When the pressure sensor detects a drop of pressure in the system due to the opening of one or more outlet points, the electronics start the pump to restore the set-point pressure value in the system. The inverter varies the speed of the motor, modulating the hydraulic performance according to the specific demand of the system.

When pressure is restored, the flow sensor will detect the lack of water flow and will stop the pump until the next system demand.

The system also provides protection against dry running, thermal protection against motor and inverter overheating, and electrical protection against sudden changes in voltage and current.

The Wilo-Isar BOOST5 is supplied from the factory in self-priming operation mode for installations such as withdrawal from underground tanks or reservoirs. However, for installations where the system is fed from tanks or reservoirs by gravity or directly connected to a pressurised network, it is possible to change the functionality of the system to non-self-priming mode.

Main features and benefits include:

• *Efficiency* – The inverter integrated in the system allows a constant pressure to be maintained, reducing energy consumption and optimising the use of water resources;

• *Hydraulics* – The self-priming multi-stage pump is made from corrosion-resistant materials for sustainable operation;

Execution – Quiet, efficient, compact and reliable, maintenance operations are reduced to a minimum;

• *Ease of operation* – The simple and intuitive control panel means that the pressure set-point to be supplied can be managed and the operating status and any errors easily managed;

• *Integrated solution* – The "plug and pump" nature of the system makes it ready for connection, complete with pressure and flow sensors, integrated non-return valve and pressure vessel;

• *Adaptability* – The selector to switch between self-priming and non-self-priming operation facilitates the installation for different conditions and applications.

Isar BOOST5 features include:

- Pressure sensor;
- Integrated electronics with frequency converter;
- 360° rotatable suction and discharge connections;
- Vibration-damping housing feet;
- Ready-to-plug design;
- Noise-reducing housing;
- LED display with push buttons;
- Change-over switch: self-priming/non-self-priming;
- Non-return valve and flow sensor.

Contact: Wilo Ireland.

T: 01 426 0000; E: sales.ie@wilo.com;

www. https://wilo.com/ie/en/ ■

Swegon tackles climate change

BlueBox R290 commercial heat pumps from Unitherm

With the EU climate strategy being updated and reinforced to realise ambitious targets in respect of increased renewable energy usage and reduced carbon emissions, Swegon has developed the new BlueBox R290 range of commercial heat pumps.

Distributed in Ireland by Unitherm Heating Systems, the range comprises three models – Titan Sky, Omicron Zero S4 and Geyser Sky.

Common to all is that they use R290 refrigerant which is a perfect sustainable option offering the following features:

- Nearly zero global warming potential (GWP = 3);
- Natural fluid;
- Natural non-toxic refrigerant;
- No ozone layer impact;
- 40% gas charge compared to R410A;
- No carbon tax;
- Supported by incentive schemes;
- Future-proofed natural solution given the ongoing HFC phase-out.

The three model choices are designed for different applications, brief details of which are as follow:

Titan SKY – This is a large range of high-efficiency chillers and reversible heat pumps featuring full inverter reciprocating compressors and an air source, suitable for both comfort and process applications. Chiller versions can produce chilled water from -15°C up to 20°C, with external temperatures from -15°C up to + 52°C.

Heat pump versions are designed for the production of hot water up to 63°C, with outside temperature down to -20°C. Units feature variable speed inverter compressors in order to maximise the seasonal efficiency and achieve stable thermodynamic regulation in any load condition. Locating units is flexible as the range is characterised by its compactness and low refrigerant charge.

Geyser Sky – This range of reversible heat pumps is ideal for boiler replacement and features variable speed scroll compressors with extended operating mode. Configurations available include the Hi HP: Reversible heat pump version, with inverter compressor; and /SLN: the super low-noise unit.

Swegon's new BlueBox R290 range of commercial heat pumps.

Benefits include reduced refrigerant charge; extended operating limits; domestic hot water managed via a 3-way valve, either built-in or external; production of hot water up to 78°C; operation down to ambient -20°C with outlet water at +60°C; 4.3" touch screen interface.

OMICRON Zero – The OMICRON Zero is a range of high-efficiency, multi-function units designed for large 4-pipe systems. It offers unique, high-tech solutions and is the first of its kind to deliver a GWP = 0. It incorporates independent defrosting cycles for each circuit with evolved operating logic, extended operating limits and is Eurovent certified.

The body is modular with a load-bearing frame, made from galvanized sheet-iron coated with polyester powder RAL 5017/7035 which makes it highly resistant to weather conditions.

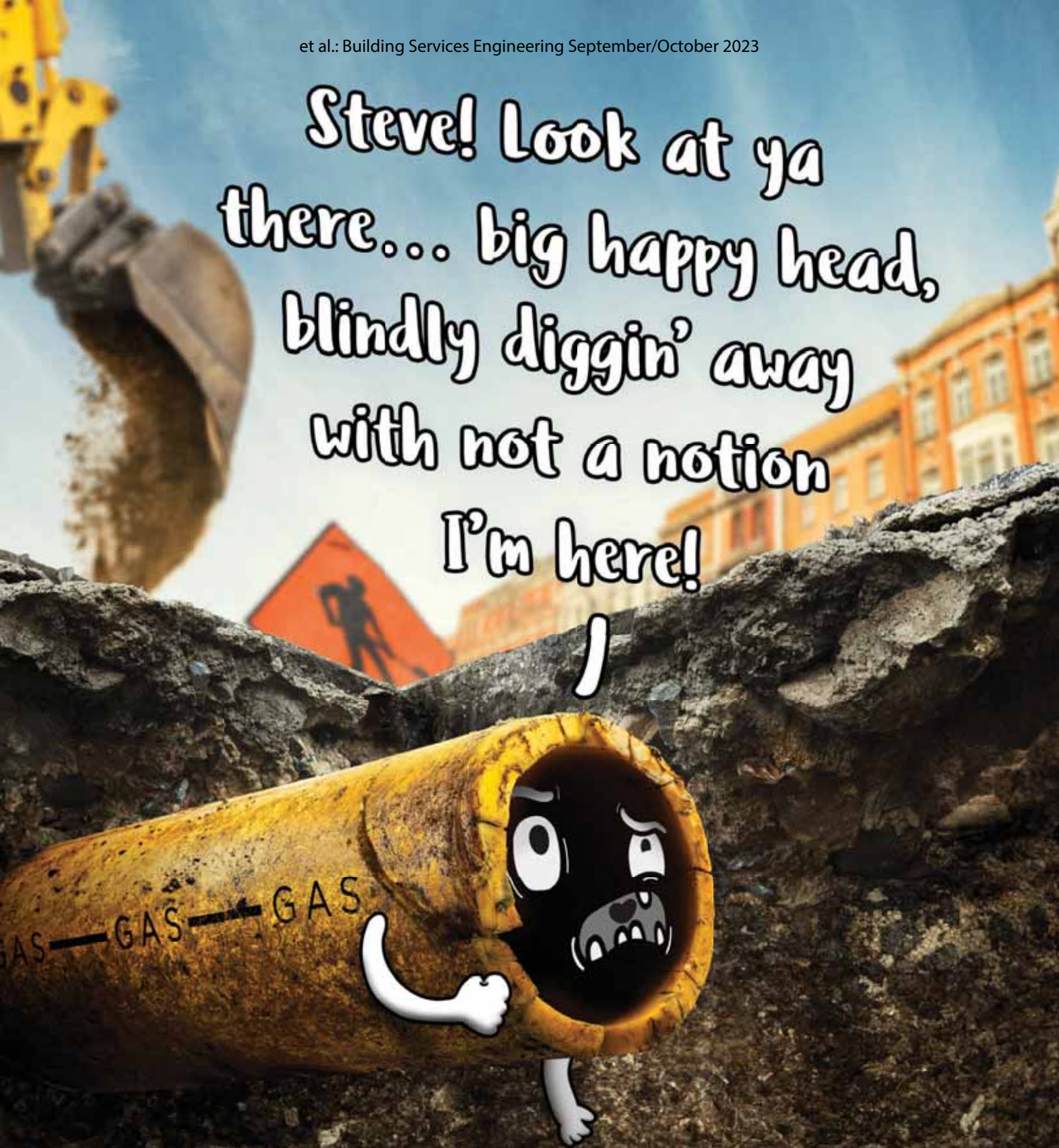
The compressors are hermetic orbiting spiral scroll compressors, with each fitted with an oil level sight glass. Depending on the particular model, there are the following compressor configurations:

- Models with two compressors;
- Models with four compressors;
- Models with six compressors.

Units with two or three compressors come with an oil equalisation line. All the compressors are fitted with a crank-case heating device.

The fans are axial fans, directly coupled to a a 3-phase, 6-pole electric motor, with integrated thermal overload protection and IP 54 protection rating. The fan also includes the shroud, which is designed to optimise its efficiency and reduce noise emission to a minimum. The safety guard is also included.

For full details on the BlueBox range of commercial heat pumps, contact the Commercial Team at Unitherm Heating Systems. T: 01 610 9153; E: commercial@unithermhs.ie ■



Pumps and fire safety solutions

Latest fire safety solutions put people and planet first

All eyes are on fire safety in the building services sector at present. Last year saw new duties introduced in England under the Fire Safety Order for building owners or managers to put additional safety measures in place[1], while here in Ireland, consultation is underway to bring the country into line with the the UK. Kevin Devine, Sales Director, Xylem Water Solutions, Ireland, explains.

All new apartment buildings in Northern Ireland above 11m tall could then require automatic fire suppression systems such as sprinklers[2], but the proposals do not include a requirement to retrofit existing buildings. Meanwhile, the Irish Cabinet has commmenced a €2.5bn repair scheme to fix fire safety and other defects in 100,000 apartments and duplexes built during the Celtic Tiger boom era of the mid 1990s to late 2000s[3].

Neither task should be daunting. Whereas in the past, fire prevention systems were seen as costly to install and complicated to manage, modern sprinkler systems can be connected to a break tank or a mains water supply easily and efficiently to allow facilities managers to harness a building's water systems to increase fire prevention capabilities and ensure occupants' safety.

Controls that provide peace of mind

Fire sprinkler pumps and controls come as one modular skid package. Xylem's Lowara GEM series is easy to fit to both new and existing buildings. The range of modules can be combined to form a tailor-made solution that conforms to the rigorous European Standard EN 12845. Moreover, it requires only three connections to function – suction pipes, discharge pipes and a reliable electrical supply.

This build-your-own approach means the features can be customised – skids can be a combination of diesel and electric skids, with or without a jockey pump, and designed around suction lift conditions or flooded suction. Automatic self-test and shut-off functions mean maintenance can be carried out without fully switching off the system, and the sets also benefit from the latest automated controls that can test the functionality of the system, reduce the likelihood of dry-runs or overheating, and prevent sprinklers from activating unnecessarily.

As well as offering monthly self-test cycles, the GEM system offers provision to test the pumps manually as and when needed, with an optional external monitoring service available to warn of possible failures and provide real-time data on pump performance.

Ensuring safety and sustainability

Traditional fire safety measures often come at the cost of increased energy consumption and environmental impact. However, advances in technology and building practices have paved the way for energy-efficient fire protection solutions that not only ensure the safety of occupants, but also minimise the carbon footprint. Comprehensive fire safety measures can be extended to include monitoring and control of assets and systems. These ensure service and safety and offer the most effective way to optimise performance. Xylem makes sure that the customer's selection is the most efficient possible with pumps that only use the power they need. This results in lower capital and operational costs, thus enabling the end-user to lower their carbon footprint.

Prioritise fire safety today

Solid fire prevention strategies should always be a top priority, and the installation of a trustworthy sprinkler system is an easy, cost-effective way to get started. Designed and tested to meet a building's most demanding requirements, modern firefighting booster sets deliver water when needed – and could soon be a further boost to the industry if the regulations are extended to commercial buildings.

By embracing innovative technologies, thoughtful design principles and sustainable maintenance practices, it is now possible to create a safer environment while reducing the ecological footprint without compromising on standards.

For more information on Xylem's fire pump systems, visit www.xylem.com/ie

Reference

1. https://www.gov.uk/government/publications/fire-safety england-regulations-2022/fact-sheet-overview
2 https://www.bbc.co.uk/news/uk-northern-ireland-66112532
3 https://news.sky.com/story/ireland-launches-eur2-5bn-scheme-to-repair-fire-safety-defects-in-homes-12789487

Understanding the Impact of Pipe Insulation on Operating Cost and Carbon Emissions

Our new carbon calculator can help consultants to calculate the carbon emissions associated with the heat lost from pipework systems over the systems lifetime, when specified to tables in *BS 5422, CIBSE CP1 or a specified insulation thickness.

The Kingspan Kooltherm® Pipe Insulation Carbon Calculator provides an indication on heat loss, capital costs and the cost of lost heat, helping to understand the payback period in both cost and carbon when using different insulation standards.

Contact us to discuss carbon savings on your project:
pipecarboncalculator@kingspan.com

Please scan for more information.

* BS 5422: 2023 (Thermal insulating materials for pipes, tanks, vessels, ductwork and equipment operating within the temperature range –40 °C to +700 °C – Method for specifying) Table 15A Base Level Thickness and Table 15B Enhanced Level Insulation. CIBSE CP1: Heat networks: Code of Practice for the UK (2020).

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Kingspan®

WiFi controlled radiators

Smart Heating? Look no further than ATC ...

The key to reducing heating bills is control. Traditional heating systems, such as storage heaters, do not offer much in the way of control, apart from turning the heating on or off. However, thanks to advancements in heating technology, smart options are now available to heat homes, offices and businesses.

Key benefits

• Control the heating whenever, wherever via an easy-to-use mobile app. This could be as simple as turning on the heating on the way home from work, to setting a full heating schedule for chilly winter months;

• Make use of operating modes such as Eco, Comfort and Frost for optimal comfort as the seasons change;

• PID Intelligent Control ensures that the heater is energy efficient, with temperature accuracy to 0.2°C;

• Open Window Technology automatically detects a fall in the temperature caused by open windows and suspends any programmed heating to prevent wasting energy;

• Using the Adaptive Start feature, the heating is programmed to turn on and heat certain rooms at certain times. Simply programme the desired temperature, and the unit will calculate the required time needed to reach that temperature.

ATC have two Smart Heating ranges to choose from: Smart RF and iLifestyle.

Smart RF range

The Smart RF family operates through radio-frequency technology. This is set up through an RF gateway and works in tandem with the WiFi router for full control. Simply download the Tevolve App to control the heating from anywhere.

Smart RF range comprises four electric heating products – radiator, panel heater, low level radiator and heated towel radiator. All four products work in tandem with one another, and can be controlled in groups, or individually. It is ideal for use in hotels, restaurants, residential developments and healthcare buildings. Each model in the range is available in multiple sizes, from 350W right through to 2000W.

iLifestyle Range

The iLifestyle is ATC's first WiFi electric thermal radiator. This high-spec radiator can be fully controlled on-the-go via the ATC Cala app.

Easy to install, once fitted the iLifestyle is free of any ongoing maintenance.

This WiFi radiator is perfect for use in kitchens, living rooms, dining rooms and office settings. Popular applications can include home refurbishments, holiday lets, offices and student accommodation.

The iLifestyle is available in a range of sizes from 500W right through to 1800W.

Find out more about ATC's Smart Heating ranges at T: 01 467 8301; E: sales@atc.ie; www. atc.ie ■

ATC's iLifestyle WiFi high-spec electric thermal radiator is maintenance-free once installed, and can be fully controlled via the ATC Cala App.

Trust Grant on the journey to warmth and comfort by sending house plans to

heatpump@grant.ie

www.grant.ie

#ThinkHeating**ThinkGrant**

Complete bathroom and shower ranges

Bathroom Merchants – new concept from Heat Merchants

Heat Merchants, a long-established merchant business supplying the heating and plumbing industry, has unveiled a new brand called Bathroom Merchants to provide trade customers with a complete bathroom and showering product range. This new brand trades from its nationwide network of 31 branches and uses the established warehouse and logistics infrastructure to offer customers an unrivalled service.

According to Shane Colleran, Managing Director of Heat Merchants Group: "With the support of our parent company Wolseley, we are delighted to be in a position to invest in the future of our business. We are currently upgrading our branch infrastructure with the renovation of our Heat Merchants branches and the introduction of displays for our new brand, Bathroom Merchants."

A key feature of the new brand is the immediate stock availability with a wide range available for collection or delivery from the local branches, and an extended range available from the central warehouse on the day after an order is placed. Specialised bathroom solutions for commercial bathrooms or accessible bathroom products are available to order with a short lead time from the established network of suppliers.

In addition to established brands such as Ideal Standard, Mira, Bristan, Triton and Flair, Bathroom Merchants has a wide range of exclusive products sourced directly from manufacturers so that customers can be assured of only the best value. This includes a wide selection of brassware and Rosery shower enclosures which are manufactured to order to exacting specifications.

Extended warranty and after-sales service mean installers and homeowners can be assured of complete support in the event of any issues arising.

The new Bathroom Merchants' logo featured on the Naas branch facade, with interior insets.

A wide range of accessible bathroom solutions are now also available to meet the growing need for bathroom solutions for those with restricted mobility or homes with older residents.

The product range provides a complete solution for bathroom installers and includes:

- Sanitaryware;
- Bathroom furniture;
- Brassware;
- Shower valves;
- Shower enclosures and wetrooms;
- Baths;
- Towel warmers, mirrors and accessories;
- Accessible bathrooms;
- Plumbing essentials and spares.

Commercial and multi-residential

Bathroom Merchants Commercial Division provides an efficient service to larger commercial projects and multi-residential developments. Support services for these commercial projects include:

- Estimation service and tender management;
- Bathroom design and specification service;
- Specialist interior design consultant;
- Value engineering with own-brand and OEM ranges;
- Dedicated account manager;
- Single point of contact for servicing project;
- Managed stock pipeline and draw-down facility;
- After sales services;
- Warranty management;
- 5-year guarantee on OEM ranges;
- Direct sourcing from manufacturers to ensure best value ranges;
- Industry-leading brands.

Investing in branch infrastructure

The process of renovating the Heat Merchants branch network is well underway with most of the 31 branches expected to be complete by the end of the year. As part of the process, three installer training centres will be opened in Naas, Cork and Athlone. These will provide customers with the opportunity to upskill and become skilled installers of renewable energy technology, including air to water heat pumps.

The Bathroom Merchants shower and bathroom product range and catalogue are available on www.bathroommerchants.ie or contact Customer Support: T: 090 6442300. ■

SABIANA
ARBONIA

Constantly innovating the air that you breathe

Sabiana, an Arbonia Climate Group family member, designs and engineers sustainable heating and cooling solutions that deliver perfect indoor environmental quality. Wellbeing and comfort are the key considerations, along with energy efficiency and carbon reduction. The expansive portfolio caters for all applications, be it residential or commercial, and is available in Ireland from Hevac, its Irish distribution partner.






Hevac

Muirfield Drive, Naas Road, Dublin 12. T: 01 419 1919

Unit 1, Furry Park Industrial Estate, Dublin 9. T: 01 842 7037.

South Ring West Business Park, Tramore Road, Cork. T: 021 432 1066.

email: tender.enquiry@hevac.ie

www.hevac.ie

Isopartner delivers Armacell's certification course

Isopartner specialises in the distribution, conversion and production of innovative solutions for technical insulation. With a focus on professional advice, standard and customised insulation solutions and excellent logistics, Isopartner is the ideal partner for a wide range of insulation applications.

In addition to an extensive product portfolio, Isopartner provides a full range of support services, including specialist training programmes. It values the professional competence and skills of its customers and the training programme is designed to help them upskill and keep abreast of all the latest innovations in insulation technology.

Isopartner provides various training courses in the fields of cellular rubber insulation, fire insulation and passive fire protection, among others, and does so using its own in-house expertise or in conjunction with its many, world-leading suppliers. It also runs regular tailored training courses for specific industry areas on request. Just recently, the company partnered with Armacel to deliver a course in cellular rubber installation for insulation installers.

Armacell has found that the additional skills gained on this course leads to efficiencies in labour costs on site for the installer, and makes for a thorough and professional installation.

The course and training is part of Armacell's ongoing certification programme and consists of both a practical and a theoretical part in a total of four levels. The course participants' work is checked and approved by the course leader and, on successful completion, a training certificate is obtained. This also includes a note on each completed and approved training course by Armacell's installation expert. The training was led by Jason Jeenes from Armacell who took a hands-on approach with each of the participants. Armacell has found that the additional skills gained on this course leads to efficiencies in labour costs on site for the installer, and makes for a thorough and professional installation. In fact, Armacell has found it can ensure standardised installation of their products across all market segments by sharing their international experience locally.

Group of participants with Armacell and Isopartner personnel at the recent training course.

Among the Armacell product types carried by Isopartner are:

HT/Armaflex tubes: Highly flexible, closed-cell insulation material based on extruded elastomeric foam with resistance to UV radiation;

Tubolit DG tubes: Tubolit DG tubes are tubes in flexible, closed-cell, extruded insulation material designed to reduce heat losses on heating and plumbing installations;

NH/Armaflex tubes: Halogen-free, flexible, closed-cell insulation material with certification for use in marine environments, rail and military sectors. Also suitable for use in clean rooms and server rooms;

Armaflex Ultima tubes: Flexible elastomeric foam on the basis of a patented synthetic rubber composition with improved fire-retardant properties, low smoke generation and a closed-cell material structure. For use in HVAC, refrigeration and process equipment applications.

Last word to Shaun Gillen, Isopartner: "We have a long-standing relationship with Armacell in offering solutions to insulation contractors with product knowledge and training, and we look forward to rolling out further training such courses in the months to come."

Contact: Isopartner Technical Insulation Solutions. T: 01 - 882 9990; E: sales@isopartner.ie ■

R290 Commercial Heat Pumps

BlueBox by Swegon

BlueBox TITAN SKY
Reversible heat pump with natural refrigerant (**R290-Propane**)
30-200 kW
Max temp 65 °C

BlueBox Omicron Zero
High efficiency **Multi-Funtional** air source heat pumps (**R290-Propane**)
50-230 kW
Max temp 70°C

BlueBox GEYSER SKY
Full inverter reversible heat pump with natural refrigerant (**R290-Propane**)
20-30 kW
Max temp 78°C

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Application: Shopping centers, office building, warehousing, health care.
Leaving water temperatures: up to 75°C

HEAT PUMP

Industrial

Residential

AIR TO WATER HEAT PUMP

Application: New builds & energy upgrades
Applicable floor areas: up to 140m²
Leaving water temperatures: up to 65°C
Tank Options: 180L/230L Integrated, up to 500L as a separate cylinder

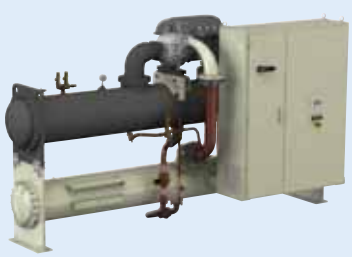
CENTRIFUGAL CHILLER

Application: Food processing, pharmaceutical, data center, health care.
Leaving water temperatures: up to 75°C

Heating the Path to Net Zero: Innovative Solutions for a Sustainable Future

Whether the project is a renovation or new build, commercial or industrial, a Daikin is the optimal choice. Daikin solutions integrate with a range of peripheral products to provide a custom solution that creates a healthy, comfortable climate year-round while also optimizing the efficiency of the heating system and reaching the overall goal of net zero.

MULTI PURPOSE HEAT PUMP (4PIPE)



OIL FREE CENTRIFUGAL

RESIDENTIAL

COMMERCIAL

INDUSTRIAL

Find out more about our products

Complying with the highest standards ...

Sabik makes for the perfect IAQ and comfort

S&P's Sabik series is the new range of domestic MVHR units with low-consumption EC motors and high-efficiency counterflow heat exchangers available in both sensible and enthalpy -E- versions (up to 92% sensible recovery, and up to 82% latent recovery).

The units ensure a continuous and balanced ventilation system by extracting moist stale air from the wet rooms and, at the same time, introducing a tempered and filtered fresh air to the habitable rooms.

Designed for single-family homes, the system guarantees the quality of indoor air in homes and ensures high standards of comfort. Compliance with the energy consumption targets set by the EU is also assured, in addition to that of Passivhaus certification.

The optimised design ensures compliance with the highest standards thanks to the very low leakage level, high thermal insulation and minimal sound level. Meanwhile, the integrated humidity sensor provides an automatic function that tracks the indoor humidity and proportionally adjusts the fan's speed.

The Sabik unit contains, as standard, ISO Coarse 65% (G4) filters in the supply while extract airflows clean the incoming air and protect the heat exchanger. For higher air quality, an optional Pm1 70% (F7) filter can be installed in the supply air channel. An integrated 100% bypass is activated either automatically or manually. This is particularly useful when the indoor temperature is higher than the outdoors and free cooling is preferable.

Installer friendly

Sabik is a versatile product with a host of installer advantages. For instance, the airflow direction paths can be adapted to allow for alternate on-site configurations of duct routing, while a range of accessories lets the end-user tailor the functions of the system to their specific requirements.

Optional accessories that can be integrated into the system include a pre-heater, VOC sensor, communication module and constant airflow module (Servoflow). It is also simple to access all components for routine service and maintenance.

The remote (wired) touch-screen display panel makes for easy control and provides access to speed settings, manual bypass, boost activation, automatic mode activation and dirty filter alarm.

Moreover, the optional SPCM module can provide access to Connectair, S&P's IoT that provides access to a new way to manage and enjoy the benefits of quality ventilation.

The Sabik range of domestic MVHR units are fitted with low consumption EC motors and high efficiency counterflow heat exchangers.

Sabik benefits

- High performance counterflow type heat exchanger (up to 92%), which provides significant energy savings;
- S&P supply and extraction filters that are certified to offer optimal operation, ensuring indoor air quality, perfect unit performance, low noise level and maximum protection against particles;
- Electronic control with filter change indicator;
- Bypass 100% automatic and/or manual;
- Energy savings through free cooling when outdoor conditions are right;
- Temperature and humidity probes.

Contact: Soler & Palau (S&P) Ventilation Ireland. T: 01 412 4020; E: sales.ie@solerpalau.com; www.solerpalau.ie ■

CONDITIONS OF OPERATION

Reduce carbon but don't forget about comfort

Directives and standards to reduce energy in commercial buildings have set challenges for building services engineers to overcome. Complex design systems and modelling tools are now used to create new super-efficient installations with impressive results but, are they comfortable? Michael Curran (right), CIBSE Ireland and Head of Building Services, Energy and Utilities at the University of Galway investigates.

Faber and Kells' *Heating and Air Conditioning of Buildings*, eleventh edition, first published in 1936, emphasises the need for satisfactory environmental conditions within a building, whether for human comfort, material storage or support processes. The main factors that influence comfort for people relate broadly to the senses ... touch, vision, smell and hearing. Thus the design of the building services systems must provide a good thermal, aural and visual environment – fresh air and warmth or cooling; no unwanted noise or odours; and good lighting.

In surveys of user satisfaction within buildings' comfort issues, particularly temperature and air freshness, are among those rated as the most important aspects. The same studies show that dissatisfaction with the internal environment, particularly the thermal environment, is widespread with complaints of overheating in winter and coldness in air conditioned buildings in summer commonplace.

Therefore, the challenge for building services engineers and the design team is to ensure comfort conditions are met on all fronts. Design for non-domestic buildings can range from refurbishment of a 100-year old church to a new office block or hospital operating theatre. All have different conditions of operation.

It is important that designers and installers achieve design comfort levels set out by clients. Clients generally do not spend much attention on the heating systems in the project briefing document as it is assumed that designers will provide the staff with places to work efficiently. Badly-designed heating and ventilation systems can cause labour issues around sickness, absenteeism and lack of productivity.

The Chartered Institution of Building Services Engineers (CIBSE) provides numerous technical guidance and other benchmark documents outlining comfort conditions in buildings for heating, cooling and ventilation. Indeed, CIBSE guidance is referenced in Ireland's Building Regulations.

The challenges engineers face in designing heating systems

Although heating is often considered to be a simple, basic system, there are many options and permutations to be considered. Fundamentally, design for comfort in buildings has not changed since the original concepts were first used – a thermal source provides heat to a space and this is distributed through a piped system and emitted through a source within a room or space.

Climate change and adaption to the EU Energy Performance of Buildings Directive (EPBD) have set new standards for designers to achieve. The Irish Government's own targets to be carbon neutral by 2050, and the electrification of heating with the phasing out of fossil fuel use in buildings, has led to a number of key design questions which building service engineers now need to address. The following are just some of the many questions that need to be considered at design stage.

Correct sizing

Correct sizing, especially at part-load operation, is vitally important for commercial spaces following changed working and occupancy patterns since Covid-19.

Given the current requirements to limit energy consumption and CO2 production, good design of heating systems is essential to ensure that systems operate efficiently and safely, and that they make effective use of energy. Historically, there have been problems with the oversizing of heating systems. This can lead to inefficient operation, most notably at part-load operation; control problems; and a reduction in plant operating life. Energy consumption for oversized plant can be 50% more than is necessary.

Incorporating low-carbon options

The industry has entered a new era of space heating and is undergoing a rapid transition from carbon-intensive oil and gas boilers to renewable-based alternatives. Large-capacity heat pumps present a viable pathway to facilitate this transition, and district heating networks fuelled by data centres or large waste heat-producing plants can assist in the transition.

The fast pace of change and advancement of system integration should not be slowed by legislation and compliance around

these new technologies. The EU and Ireland must ensure legislation is updated and enacted quickly if we are to meet 2030 targets

New design standards

New buildings are designed and built with NZEB, LEED, BREAM standards using the latest technologies, i.e. low and high temperature heat pumps; CHPs; led lighting; solar PV; and high-efficient glazing systems.

Building management systems (BMS) should be designed to realise the maximum efficiency of plant and equipment as per the conditions in the building. Overly complicated systems will be switched off and manually operated, negating any possible savings.

Retrofit and refurbishment

Currently, retrofit and refurbishment projects are installing low and high temperature air to water heat pumps, chillers, geothermal systems and biomass installations, and connecting them to large-scale buffer systems. Boilerhouses are increasing in size with new sub-circuited systems used to make buildings more flexible and user-friendly.

Heating systems' flow and returns are then connected to a number of different options, including low temperature radiators, underfloor heating, high temperature radiant panel heaters, unit heaters and fan coil systems.

Heat pump room in modern commercial building

The designer must consider the building's existing structure and fabric and base the choice of heating system on that information. It is vital the design meets or exceeds the energy performance required, and that the optimum heat load for the building is selected. The primary heating source selected can be either single source or part of a bivalent system where the designer typically combines a heat pump and biomass system.

It is essential that the designer ensures the simplicity of the system, and that the solution guarantees reduced running and maintenance costs for the client. Complicated system designs will cause an increase in the operating and carbon reporting costs.

New standards and legalisation covering fossil fuels use, whole-life carbon, embodied carbon in services, and operational carbon in buildings have brought about changes to the approach of building services design. To reflect this, CIBSE has produced *TM65 Embodied carbon in building services: A calculation methodology (2021)* and *TM66 Creating a circular economy in the lighting industry (2021)*. Both documents are ideal when calculating carbon content related to a design. Building services engineers have a unique opportunity to transition from fossil fuel-based designs to renewable technologies, bivalent heating systems or electrified heating systems, all of which can achieve the target comfort levels.

Summary

In summary, as highlighted by Faber and Kells, it is important to ensure that systems designed for occupants are comfortable and manageable. If this is not achieved, then the buildings concerned won't meet the certification levels required and will be costly on many fronts for clients. ■

Industry appointment ...

Clancy joins Enerpower as a new addition to its business development team

Paul Clancy, who is widely known and respected throughout the building services engineering community, has been appointed Business Development Manager at Enerpower, Ireland's largest leading renewable energy company.

Paul's experience and expertise spans over 33 years, encompassing diverse industries such as energy, agriculture, drinks and construction, including key roles at renowned companies like Baxi (BDR Thermea) and DeLaval International. He has a proven track record of success and his extensive experience adds a wealth of knowledge to the team at Enerpower.

Of his appointment, Dr John Carty, Project Director, Enerpower, stated: "We are thrilled to announce the appointment of Paul Clancy as our new Business Development Manager. His impressive track record in sales, manufacturing and distribution, coupled with his senior management positions both locally and internationally, showcases his exceptional leadership skills. Additionally, his educational background, including a BSc Hons in electrical engineering from Trinity College and diplomas in manufacturing management and human resource management from the Irish Management Institute, further solidify his qualifications.

"We are confident that Paul's valuable experience and dedication will greatly contribute to our continued growth and success as we navigate the dynamic business landscape of carbon reduction for businesses. We warmly welcome Paul to our team and look forward to the remarkable achievements we will accomplish together."

Founded in 2005, Enerpower is Ireland's largest leading provider of renewable energy solutions. The team is focused on bringing innovative low carbon solutions to clients such as Eli Lilly, Lidl, Tesco, Sam Dennigan & Co, BWG, Charles River Laboratories and Ardkeen Quality Food Store, as well as Glenilen Farms, Total Produce/Wexford Tomatoes, Grantstown Nurseries and many more. Some of the more recent projects include a 5.6MW solar farm at Eli Lilly, a 2MW solar array at Bulmers facility, and a 300kWp car port at a Wicklow County Council facility.

Enerpower helps companies in the commercial and industrial sectors to become self-sufficient in their energy needs. In turn, companies make significant cost savings by reducing energy costs of up to 50%, while getting the bonus of reducing their carbon footprint and securing energy supplies for the long term.

Paul Clancy stated: "I am excited to join such an innovative, forward-thinking company such as Enerpower. The team here has extensive experience in the industry with a proven track record in bringing energy savings to businesses nationwide. I am thrilled to join forces with Enerpower and work towards a shared vision of a greener future for generations to come."

Enerpower is committed to making renewable energy more accessible and affordable for all businesses to achieve. It has superior product knowledge, expertise, financial viability and resources to take customrs' energy objectives from concept through to design, construction and efficiency utilisation. ■

Paul Clancy, Business Development Manager, Enerpower.

Powerscourt Hotel saves 42% on energy with pump upgrade

Environmental, social and governance (ESG) is the framework used to assess a company's performance rating on sustainability and ethical issues. It also provides a way to deliver energy savings and carbon footprint reductions. It is against this background that the 5-star Powerscourt Hotel in Co Wicklow turned to Campion Pumps, who this year celebrate their 40th anniversary.

Campion has a long-standing relationship with Powerscourt Hotel dating back to 2007 and has provided service and maintenance on all the hotel's pumping requirements since then. During a routine service of the hotel's foul pump station, a fault was found with one of the two pumps. The pump was brought to the Campion workshop for repair and, on disassembly, it was found that a number of parts were in disrepair.

An energy analysis was carried out by Alan Campion, who is qualified in Pump System Optimisation and the ISO 14414 Standard for Energy Assessment of a Pumping System. On review of the pump selection, substantial potential savings were identified, with the new solution providing a massive 42% saving in energy usage and regular service and maintenance costs.

Right: **Martin Campion, Chief Executive Officer, Campion Pumps.**

About Campion Pumps

Campion Pumps is an Irish-owned company specialising in the design, supply, installation, service and maintenance of a full range of water and wastewater pumping solutions. It covers all applications, from municipal through to commercial, industrial, agricultural and domestic, providing full, end-to-end, bespoke solutions.

Head office is based in Gortnahoe, Co Tipperary, with a Leinster branch in Tallaght, Co Dublin, and a distribution and service depot in Limerick. This ensures comprehensive nationwide coverage and speedy response to all queries.

Campion is a dynamic and responsive business that embraces emerging technologies to provide intuitive and responsive pump systems. It employs 60 people who provide superior customer service. These include electrical, service, chemical and instrumentation engineers, IT department, a safety team, administrative staff, stores team and sales team.

Its fleet of 40 vehicles includes a lorry fitted with an 80-ton crane, vacuum tanker, six potable water tankers, and 18 service vehicles, some of which are equipped with pump-lifting cranes.

Custom booster sets

Campion have an outstanding reputation for manufacturing high-quality booster sets. All our booster sets are custom-made in Ireland, CE certified, and with custom stainless-steel manifolds and base and designed to customers' specific needs.

We offer the most energy efficient solution and can adapt pipework and valve arrangements to ensure a perfect fit at your location.

Campion design and supply a wide range of booster pump sets, including circulating and pressure boosting sets, which can include features such as variable speed controls, built-in pipe burst protection, flow control units and an insulated kiosk to house the system.

Three-pump Hydrovar booster set, complete with a PLC and HMI.

Savings of 42% achieved

Factoring in the monthly energy and maintenance costs, the massive 42% savings will deliver a speedy return on the investment cost. The long-term gains will also be sizeable.

Keith Weston, Group Property Manager, MHL Hotel Collection said: "The level of service provided by Campion was second to none. This Powerscourt project has highlighted how valuable our service and maintenance agreement with Campion is in ensuring continued water supply to our hotel. We are delighted we made the decision to switch to more energy-efficient water pumping solutions and look forward to seeing the true savings over time."

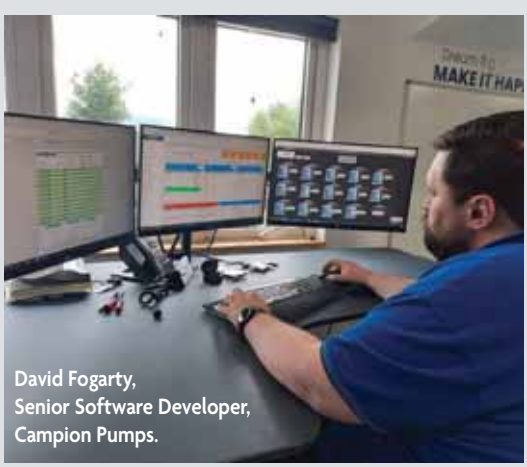
The solution

The solution involved the installation of two Flygt Concertor 7.3kW variable speed pumps in place of the existing 18.5kW pumps. This reduced the combined power to 14.6kW, from an existing 37kW generated by the original, less energy-efficient, pump system.

To accurately measure the savings post-install, a data logger was installed to monitor the power usage of the existing pumps for 30 days. This gave evidence-based information against which to measure the cost savings of the new system.

Thanks to integrated intelligence, Flygt's energy efficient Concertor pumps are self-learning and have a self-cleaning capacity. This means these smart pumps clean the station, auto reverse upon blockage, and automatically run at reduced speed as required. The result is large cost savings by way of reduced energy consumption and maintenance labour. Additionally, there is massively-improved operational efficiency across the entire Powerscourt Hotel complex.

Right: The Flygt Concertor, a fully integrated system that delivers the highest quality and reliability.



David Fogarty, Senior Software Developer, Campion Pumps.

Stay connected and in control 24/7

Powerscourt Hotel water and wastewater system is monitored 24/7 by Campion Connect, providing peace of mind and control with real-time data and alerts. This ensures that the hotel's water system runs smoothly and efficiently.

Sabiana radiant panels and FCUs from Hevac

Sabiana, an Arbonia Climate Group family member, is a long-standing Italian company that conceives, designsand manufactures building services engineering products that deliver comfort, wellbeing and energy efficiency. The portfolio is extensive and includes radiant panels, unit heaters, fan coil units, AHUs, heat recovery units, electronic filters, stainless steel flues and evaporative coolers.

Sabiana has a strong partnership with Hevac which is rolling out the new Pulsar and Duck Strip radiant panel ranges, along with the Charisma fan coil unit collection.

The Sabiana Duck Strip radiant panels are produced in eight different models, with two standard colours, and others on request. The panels feature a flat bottom, making them ideal for installations with lower ceilings, while the wide range of colours means they enhance every architectural interior.

Sabiana Pulsar radiant panels.

Sabiana Duck Strip radiant panels

Left: Sabiana fan coil unit

All models have elements measuring 4m and 6m in length, with 3m and 5m lengths available on request. Each one can be easily connected by press fittings or by welding the pipes. The first and last elements are fitted with welded headers and tested in the factory before despatch, with the hanging brackets welded a meter apart to the panels, therefore ensuring maximum flexibility.

The Pulsar ceiling-mounted radiant panels are made in four sizes with a width of 600mm, and are available in a choice of lengths between 1.2m and 3m, and in two standard colours. Other colours are available on request. The panels have an elegant design that perfectly matches false ceilings, are simple to maintain, offer long life and can be connected in series or in parallel to other panels using flexible pipes.

The unique construction features modern welding units that don't leave any visible traces and press the copper pipes into the thick electro-galvanised steel panel. This guarantees optimum heat output and a uniform temperature, making it ideal for many types of environments, especially schools and hospitals.

The Charisma fan coil hydronic system delivers thermal comfort in every season and is available in a multiple of model types, styles and configurations to cover virtually any application and complement all architectural interiors. The result is an optimal temperature that quickly achieves the desired comfort levels, low energy consumption and minimum sound power. The synthetic gases are fully contained in an external refrigerator that prevents the gas from escaping into the rooms.

Paul Devereux, Specification Sales Manager, Hevac says: "Sabiana constantly thinks about change and innovation across the entire portfolio. It invests considerable resources in research and development, and then in the tools to manufacture cutting-edge product designs that meet wellbeing criteria in an energy-efficient, carbon-reducing manner."

Contact: Paul Devereux, Specification Sales Manager, Hevac.
T: 01 - 419 1919; M: 086 173 8060;
E: paul.devereux@hevac.ie

Heat pumps – why your customers need one

A heat pump is an energy-efficient and clean way to heat, cool, purify and dehumidify a building's interior. It uses renewable energy to control a residential or commercial property's climate by distributing the heat that is already available in the air. In the winter time, it transfers ambient heat from the outside environment into a home or business premises to provide warmth and comfort. It is true that electricity is the primary energy source for heat pumps. However, it does have an excellent COP and is generally cheaper than gas.

Advantages of heat pumps

The main benefit of installing a heat pump is year-round comfort and the fact that it is an energy-efficient climate solution for both homes and businesses. Heat pumps are becoming more and more common across Ireland and should be the "go to" choice as a renewable source of energy to help move away from fossil fuels and work towards net zero. Many parts of rural Ireland use oil/kerosene for heating, and Hitachi's Yutaki system is the perfect replacement. Hitachi indoor units have a small footprint and fit easily into a kitchen or utility room. They are also easy to install and are very quiet.

Key features

- High COPs of 4.5-5 on all S-Combi and Monbloc systems (this means 4.5-5 units of heat for every unit of electricity consumed);
- Suitable for both radiators and underfloor heating;
- Provides heating and domestic hot water (DHW) up to 60°C (Yutaki S-80 provides water up to 80°C);
- Full range from 4.3kW to 16kW;
- A huge range of accessories is available, including Wi-Fi connectivity for control via an intuitive smartphone app.

There are many grants available from SEAI to help bring homes up to a good energy rating and these cover insulation, windows, doors and heating systems. Recent surveys show that a well-insulated home with a well-designed heat pump system could cost as little as €600 per year to run. This means home energy savings are high and return on investment times are low. So, where it may be a higher upfront cost compared to gas and oil, this is a green, future-proofed solution and will save homeowners money, while reducing their carbon footprint at the same time.

For all Hitachi product and heat pump training enquiries, contact Paul McGettigan, Area Sales Manager Ireland, Hitachi Air Conditioning Europe. T: 086 107 7274; E: paul.mcgettigan@jci-hitachi.com, or your usual distributor or stockist.

"With SEAI grants available, now is the perfect time for homeowners to be upgrading their heating systems to renewable energy heat pumps.

Top: The new Yutaki S80 provides hot water up to 80°C. Above: The Yutaki M monobloc heat pump features all-in-one heating and cooling.

Bronz-Glow®

Saving the planet … one coil at a time

Many companies view corrosion protection for HVACR equipment as a questionable expense, yet the reality is that corrosion is a major problem that impacts the operation, maintenance, performance and lifespan of equipment. Studies have shown that within the first two years of operation, the operating efficiency loss of an HVACR system can be as much as 55%. Bronz-Glow's protective coating process prevents these problems and considerably reduces the damaging impact.

For instance, in salt-laden environments, the corrosion process on aluminium fin stock begins almost immediately. Aluminium salts begin to appear as a greyish powder in as little as 30 days. This causes fin embrittlement that then leads to poor heat transfer and increased running costs. It also means the compressor is overworked, the excessive operation very often leading to compressor failure.

Cost is a factor in any business but the upfront expenditure of the Bronz-Glow treatment process should be seen as an investment, not an expense. The payback begins immediately and results in increased energy efficiencies, less maintenance, longer-lasting equipment, minimised downtime and fewer repair bills.

Bronz-Glow advisory service

Bronz-Glow's treatment protects all coil types from harmful airborne chemicals, be it in the city or in coastal regions. In addition, the special Bronz-Glow casing coat (SPC) is designed to withstand Class 5 offshore environments and therefore provides total protection for the condenser housing.

Even if the worst happens, Bronz-Glow can re-work both the coil and casing to extend the life of the unit.

However, it is obviously far better to take preventative action. Every project is unique and has its own particular requirements. Consequently, Bronz-Glow's team of engineering experts conduct a comprehensive site review before advising on the appropriate solution.

Roy Darragh, Sales, with Frank Frayling, Managing Director, and Robin Hannaway, Applications Engineer.

Aqua Aero coating

Bronz-Glow is also the appointed distributor for Aqua Aero coil coating, pan coating and multicoat siloxane panel and casing coating. These high-quality coatings are manufactured to comply with the exacting environmental standards applicable to the HVACR sector and can be applied in an OEM plant, any coating workshop or in the field.

- Aqua Aero coil coatings are developed for heat exchangers, RTPF and MCHE coils, and are well documented and tested;
- The multicoat siloxane coating for panels and components is an extreme chemical-resistant coating system for long-term protection against corrosive environments, and specifically for powder-coated, galvanised, copper and steel substrates;
- The pan coating is designed for drain and water boxes to promote hygienic and anti-corrosive surfaces.

Bronz-Glow features and benefits

The key components in virtually all HVACR equipment are made up of copper and aluminium. Copper is used for electrical components and heat transfer coils in air conditioners, while aluminium is widely used because of its corrosion resistance and is second only to steel in the amount used.

Bronz-Glow's corrosion-protective treatment comprises a poly-elastomer coating, impregnated with metallic pigment to prevent loss of heat conductivity. In fact, the coil fins of any base alloy construction can have a protective coating applied after construction to achieve total coverage. The coating does not block fin perforations and can be repaired and maintained on site.

Bronz-Glow®

Bronz-Glow (Ireland)

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Heating, cooling and DHW solution

Mitsubishi Electric hybrid multi-split PXZ

Many modern Irish homes now experience overheating during certain times of the year and cooling homes is now a major issue for some. Mitsubishi Electric devised a solution to this issue, the PXZ Multisplit. This solution provides heating and cooling as well as DHW.

This new series of hybrid air to air, air to water heat pumps combines the advantages of a hydronic heat pump and the benefits of a multi-split system. Applications include new-build and retrofit, be it individual houses or apartments.

The fully electric "hybrid" models are capable of combining the typical comfort of water-based solutions, with maximum energy efficiency and the reduced consumption of air conditioning, in a single machine.

Compatible with multiple indoor units – be they floor mounted, wall mounted or ducted – they are available in capacities ranging from 1.5kW to 7.1kW (cooling capacity). Maximum individual unit pipe run is 30m with the maximum total pipe run being 60m.

The new series models are available in two sizes – the 7.5 kW PXZ-4F75VG model which allows for connection to up to four Mitsubishi Electric indoor units (one hydronic plus three direct expansion), and the 8.5 kW PXZ-5F85VG model which allows for a maximum of five indoor units (one hydronic plus four direct expansion).

A key advantage is that householders need to purchase just a single outdoor unit as PXZ is connectable to both RAC and Ecodan. Then when it comes to future home extensions or further refurbishment, additional units can be easily installed and incorporated into the main system.

Comfort, silence and functionality are guaranteed down to -20 °C and the water delivery temperature up to 55°C allows adaptation to any system configuration.

The system can be controlled both locally and remotely via the MelCloud platform. By using a mobile device (smartphone, tablet, etc) users can easily adjust the temperature in each individual room, control the domestic hot water and monitor the energy consumption. Controls cover both single and multi-zone heating systems, heating controls for both underfloor heating and radiators, and auto-adaptive control.

Ease of installation is another key benefit. Flexible options include using an integrated cylinder or hydrobox; using integrated cylinder for hot water; utilising an existing cylinder in retrofit installations (depending on individual cylinder or coil size); and using hydrobox for heating, or heating and cooling only, applications.

Features and benefits

- Utilises R32 refrigerant with low GWP – 675;
- Small gas charge of 2.4kg;
- Provides for heating, cooling and DHW with a single outdoor unit;
- Sound level under 50 dB(A) in cooling mode (SPL);
- Compact chassis making it perfect for apartments and small homes;
- Compatible with multiple indoor unit types;
- In-built scale trap and strainer;
- Heat exchanger for faster DHW;
- SD card and energy monitoring as standard;
- In-built heating expansion vessel;
- Three cylinder volumes – 170lt, 200lt and 300lt.

Contact: Mitsubishi Electric.
T: 01 419 8800; E: sales.info@meir.mee;
w: mitsubishielectric.ie

RACGS President's Day at Powerscourt

RACGS members and their guests enjoyed a wonderful day in Powerscourt for Martin Baneham's President's Day outing. It was sponsored by Burlington Engineering with an excellent array of prizes on offer, along with packed "goody bags". Details of the winners were as follows:.

Overall Winner: Stuart Gaffney, H17, 42pts.

Class 1 – First: Brendan Sharkey, H16, 36pts; Second: Paddy Dwan, H11, 35pts.

Class 2 – First: James Darcy, H23, 36pts (won on Back 9);
Second: Johnny Lynagh, H18, 36pts.

Front Nine: Martin Baneham, 18pts.

Back Nine: Kevin McGourty, 21pts.

Nearest the Pin: Brian Kennedy.

Longest Drive: Mick Clancy.

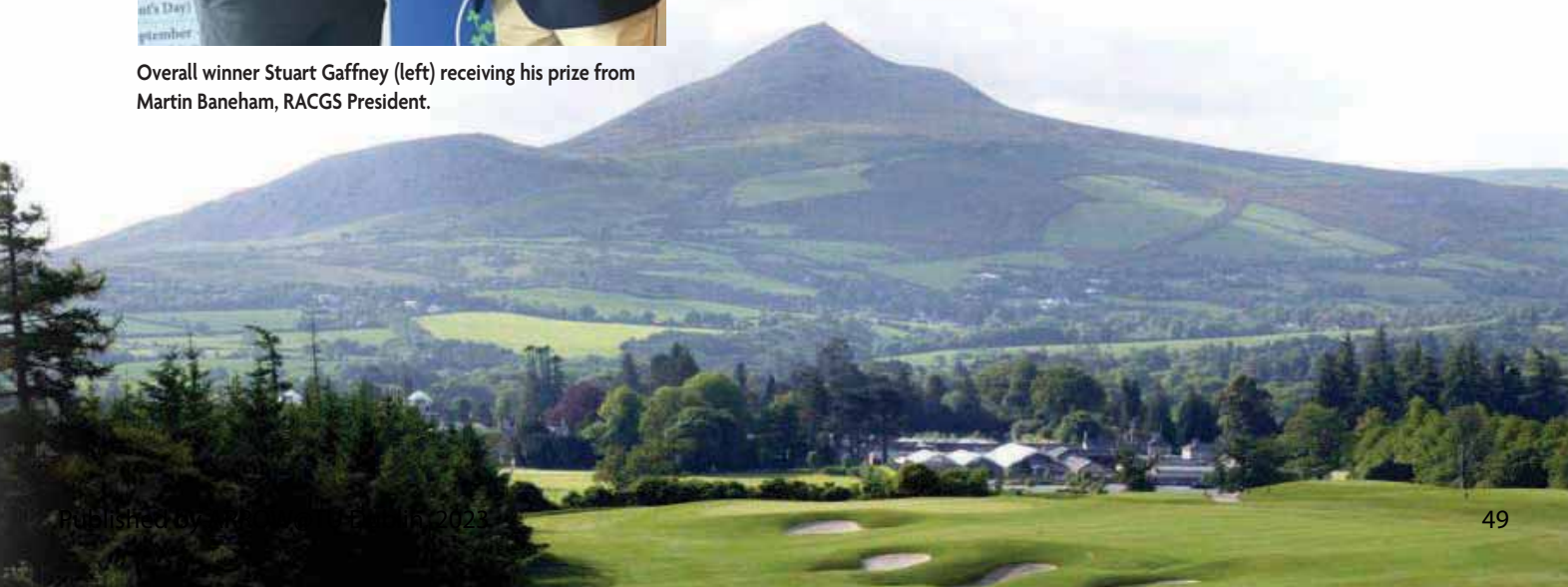
Visitor – First: JJ Quinn, H17, 47pts; Second: Alan Darcy, H10, 40pts; Third: John Fennell, H32, 33pts.

Ger Queally with John Queally, Ger Darcy and Liam Carroll.

Brendan Sharkey with Roland Bradley, Dave Killalea and Neil Murtagh.

Johnny Lynagh with Robin Marks, Mick Curran and Kevin McGourty.

Overall winner Stuart Gaffney (left) receiving his prize from Martin Baneham, RACGS President.



PROJECT PROFILE

Architect specifies Panasonic for own building project

The larger, 4-bed house covers a floor area of 2600 sq ft and has an office on the upper level.

Having specified Panasonic air source heat pumps on many other projects, architect Emmet Murray designed two unique homes on the coast in Waterford for himself and a family member. Working with Tom Breathnach Construction and Heat Merchants, both houses are now benefiting from 16kW Panasonic Aquarea Monobloc T-Cap units that supply the heating and domestic hot water system.

The project consisted of a three and a four-bed detached home with a combined floor space of 3,800 sq ft. They are designed to harness natural solar gains through their large windows but, ensuring all day and year-round comfort required a high-quality and energy efficient heating system. While the setting is breath-taking, the units also needed to deal with the harsh coastal environment.

New Aquarea T-Cap features include auto mode, holiday mode, displays power consumption, new de-ice control, concrete dry mode, lock cooling mode and pump speed control.

Tom Breathnach, building contractor, of Tom Breathnach Construction commented: "We started using Panasonic units some time ago and, when every customer for whom you have installed a product is completely happy, you stick to that product. In my experience, we don't get call backs with the Panasonic Aquarea units".

Many factors were considered as Brian Power, Business Development Manager at Heat Merchants explains: "To ensure the correct size of unit is specified, our technical service department provides an SR50 calculation to tell us which heat pump is optimum for each specific project. Thanks to Panasonic's wide range of options, we can easily overcome most challenges. This project also specified the Panasonic Smart Cloud control

for the properties, where we can then monitor the units and their functionality remotely".

Key Account Manager at Panasonic, Walter Stephens, added: "For such a personal project, attention to detail is key. We offered help from start to finish for this project, especially considering the location, making sure the units could withstand the sea air over time and not corrode. We therefore treated the units with a bronze glow to ensure they are fully protected from both direct salt spray and salt from the air. Wherever you can see the sea, or feel the sea air, we make a point of making sure the units is treated."

The Monobloc Aquarea T-cap is a single outdoor unit that supplies water for heating and domestic hot water. This low-energy system provides ideal temperatures and hot water, keeping its total capacity, even with extreme outdoor temperatures. With constant capacity and operation range down to -20°C/65°C water outlet temperature, there is no need for a water immersion for sterilisation ... the heat pump can do this from its compressor.


The smaller three-bed house covers 1200 sq ft.

Meanwhile. the Panasonic Comfort Cloud app provides a convenient centralised control and access to all features remotely, anytime and from anywhere. The Panasonic Service Cloud app can also provide installers with real-time status up-dates, anticipate maintenance needs, and monitor breakdowns. This saves the installer valuable time and money, and keeps the end-user in comfort.

Walter Stephens concludes: "The Panasonic units deliver a highly energy efficient and sustainable solution. The fact that Panasonic ends up in so many architects and builders' homes is a testament to the quality and capability of the units."

For more information visit www.aircon.panasonic.eu; See the full case study at https://youtu.be/B8qgAFG1BzM ■


The heat pump units are treated to protect them from direct salt spray and salt from the air.

Indoor Air Quality (IAQ) Standards

IAQ design – shift towards harm-based metrics

Historically, building standards have been founded on established air quality metrics mainly based on concentrations of contaminants. However, there is a potential change on the horizon, as articulated in the recent report from the ASHRAE Standing Standard Project Committee on Ventilation and Acceptable Indoor Air Quality in Residential Buildings (62.2). *Simon Jones (above), founder, Air Quality Matters*, analyses its implications.

Understanding the new addendum

The core development introduced by ASHRAE 62.2 is the potential addendum proposing a "harm-based indoor air quality procedure" as an alternative method of compliance. In layman's terms, rather than solely measuring and managing the concentration of indoor air pollutants, this addendum would incorporate the actual harm these pollutants may cause.

To the traditional engineer, this marks a shift in understanding and addressing indoor air quality. Where once the challenge was primarily measuring quantities (how much of a pollutant is present?), it now spans into understanding and mitigating qualitative impacts (how harmful is the pollutant to the building occupants?).

Harm-based v. level-based metrics

To truly grasp the implications of this new proposal, it is essential to understand the difference between harm-based and traditional level-based metrics of IAQ.

Airborne contaminants have various origins – from internal sources like building materials and furnishings to external sources brought in by ventilation. Exposure to these contaminants depends on their concentration and the time a person spends in that environment. Notably, every individual reacts differently to these exposures based on their metabolic rate, physiology, age and sex.

Historically, indoor air quality standards have also revolved around occupant perception, using human senses as a primary measurement tool. But human senses have their limitation. This is evident where harmful gases like carbon monoxide – which is odourless – go undetected.

Exposure limit values (ELVs) serve as benchmarks in the professional environment, setting maximum acceptable concentrations for contaminants. But, there are discrepancies between different organisations. The World Health Organisation and the US Environmental Protection Agency, for instance, have varied ELVs for the same contaminants.

Disability-Adjusted-Life-Years (DALY), which measures the potential years of healthy life lost and premature death due to exposure, considers the direct health effects and broader impacts on quality of life. This metric offers a more holistic view of the harm caused by indoor air pollutants.

The Lawrence Berkeley National Laboratory used DALY to estimate the chronic harm from exposure to airborne contaminants in dwellings, around a decade ago[1].

The University of Nottingham and International Energy Agency Annex 86 has revisited Logue's analysis to consider energy efficient indoor air quality management in residential buildings. They have updated the epidemiological and toxicological models and created a database of supporting information compiled from new research carried out over the past decade to rank the chronic harm caused by contaminants[2].

Taking contaminant concentrations from over 800 data sets and combining them with harm intensities, it identified those contaminants that cause the greatest harm. "This approach is the first to consider harm as a basis for regulating contaminants. This is a much more efficient approach because it will have the greatest effect on the greatest number of people for the least cost," says Dr Benjamin Jones, Associate Professor, University of Nottingham.

The top six are: PM2.5 (~66% of all harm); the course fraction of PM10 (~13%); formaldehyde (~9%); nitrogen dioxide (~8%); radon (~2%) and ozone (~1%).

Future of IAQ regulation

Drawing on the Nottingham research, the ASHRAE 62.2 Committee has identified three core contaminants of concern – PM2.5, formaldehyde and nitrogen dioxide. Together, these pollutants account for over 83% of the total harm caused by indoor pollutants in residential settings.

Yet, how will these insights influence actual engineering practices? The complexities of the DALY metric mean they won't become an everyday tool. Instead, harm intensities from this research can be used to establish harm budgets, allowing engineers to ensure that the cumulative harm from multiple contaminants remains below a threshold.

The proposed addendum to ASHRAE 62.2 represents a significant shift in the engineering world's approach to indoor air quality. The conversation is no longer just about quantities … now it is also about understanding the qualitative harm of these contaminants.

For those engineers committed to creating safe, healthy indoor environments, this new direction promises a future where building designs are even more closely aligned with human health and wellbeing.

The focus of this work to date has been on residential settings, but it is understood that similar work is considering workplace research.

Interesting conclusions

This work points to some interesting conclusions. Most of the harm in a residential setting is caused by particulate matter. The sources of this and NO2 can often be combustion, principally from cooking. Therefore much tighter control on providing adequate exhaust of cooking pollution should be the focus of future standards.

While formaldehyde in the home is mostly a source-control issue, adequate background ventilation is an area we know needs far more attention, which could also be a significant area of focus.

Interestingly, harm from bio-aerosols – which includes mould – is just behind ozone, which might be a surprise for some considering the press it has received in the last year. Also, while this index is a population-level metric and harm intensities will change within a given sector, it should still be noted that you would have to reduce the harm of particulate matter by many orders of magnitude to equate the level of harm caused by exposure to mould. It does not consider harm to the building, which brings its own cost, of course.

All of these things – ventilation, filtration and managing air in buildings – are subjects engineers are well placed to handle. This work helps to draw a straight line from air quality to health and, by extension, may increase the value placed in this critical pillar of the built environment. ■

"For the engineers committed to creating safe, healthy indoor environments, this new direction promises a future where building designs are even more closely aligned with human health and wellbeing.

Reference

1. Logue, J.M., P.N. Price, M.H. Sherman, B.C. Singer. 2012. "A Method to Estimate the Chronic Health Impact of Air Pollutants in U.S. Residences." Environmental Health Perspectives 120(2):216 – 222.

2. IEA. Energy in Buildings and Communities Programme. Annex 86 – Energy Efficient Indoor Air Quality Management in Residential Buildings. www.annex86.iea-ebc.org

Why choose building services engineering?

Early experience validates career path choice

Engineering encompasses a wide range of disciplines and offers a unique blend of theoretical knowledge and practical applications. This article delves into the personal journey of young mechanical engineer, Finn Quinlan (below), who is currently working on an internship in Arup but is due to return to UCD this coming term to complete his masters. He outlines here why he seleected engineering, sheds light on the factors that contributed to its appeal, and explains how the course experience, including internships and work experience, validate his career choice.

The decision to pursue mechanical engineering is often driven by an innate curiosity about how things work and a passion for problem-solving. The field's vast potential for innovation, its influence on various industries, and the diverse career paths it offers make it an attractive choice for many people. I discovered my love of mechanical engineering through exposure to it in secondary school and an inherent fascination with mathematics and physics. Through various internships and college placements, I have gained some experience in the interesting

field of building services engineering and, more specifically, mechanical design.

Awareness is lacking

Building services engineering, a specialised branch of engineering, focuses on the design and operation of mechanical and electrical systems in buildings. I believe that there is little awareness of building services engineering among the first year engineering students and that it is essential for universities to provide more comprehensive information and exposure to this discipline.

The awareness and exposure of first-year engineering students to building services engineering often falls short of what is needed to fully appreciate its significance. Building services engineering plays a critical role in designing both efficient and sustainable mechanical and electrical systems for buildings, contributing to energy conservation and environmental sustainability.

By applying first principles of engineering, such as thermodynamics, fluid mechanics and heat transfer, building services engineers can optimise energy usage, improve indoor air quality, and integrate renewable energy sources.

Prioritise sustainability

Sustainability concerns, including reducing carbon emissions and achieving energy efficiency, have become increasingly important in the built environment. Therefore, it is essential for universities and educational institutions to prioritise the inclusion of building services engineering in the curriculum to equip students with the knowledge and skills necessary to address these pressing sustainability challenges.

In the context of engineering education, the learning process is often demanding and complex. It requires students to grapple with intricate concepts and problem-solving techniques. As I engaged on this journey, I encountered some difficulties that certainly tested my determination and dedication. Engineering courses are renowned for their rigorous curriculum, and this compels students to commit significant time to their studies each semester. Despite the difficulty of the course, I have found it to be incredibly interesting and fulfilling.

There were many moments, while taking certain modules, that I thought this course isn't for me. Looking back, I realise this is all part of the course experience, and that the curriculum is so vast that it must cover topics which you won't enjoy. It is important to learn from these experiences and to utilise the university's options within the course to help shape your own experience. ■

> *"There is little awareness of building services engineering among first year engineering students. It is essential for universities to provide more comprehensive information and exposure to this discipline.*

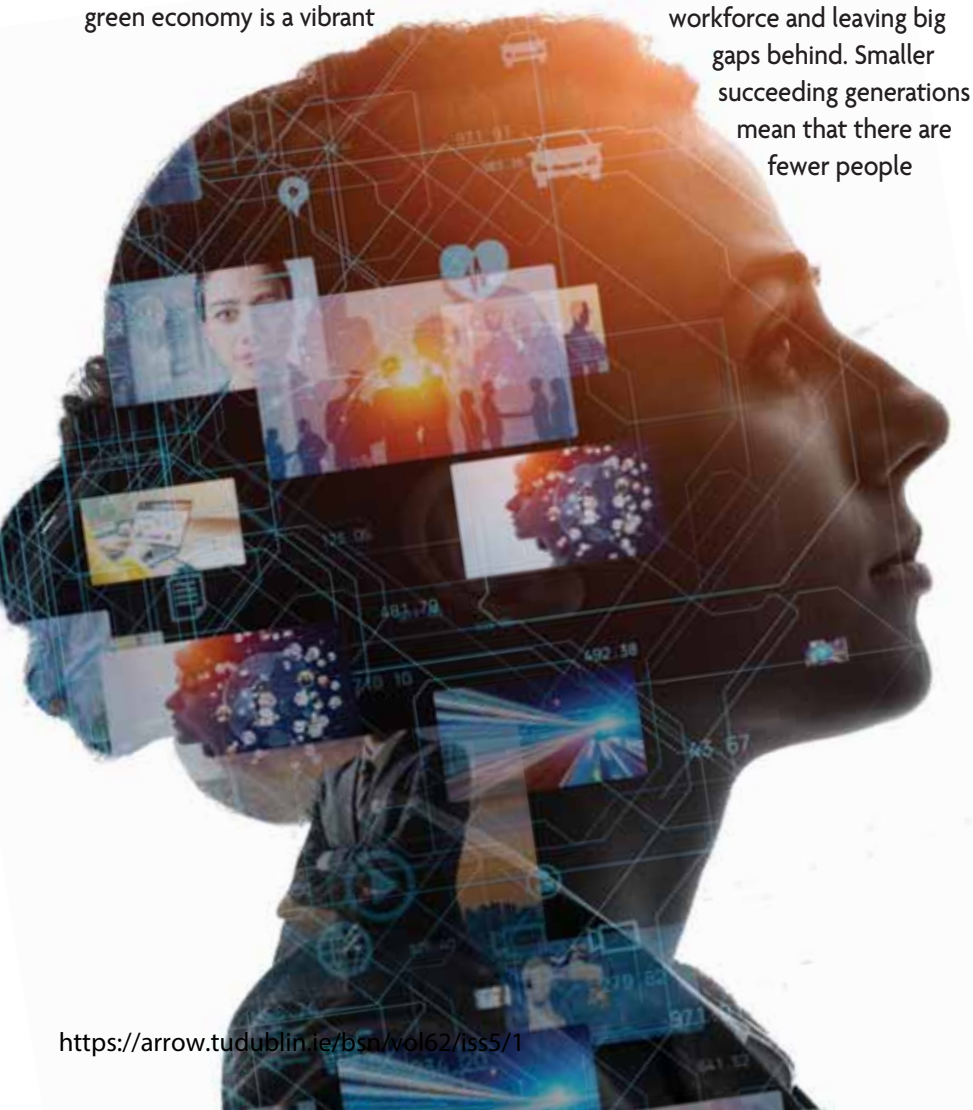
Change is the new normal

Skills possessed don't match the skills needed

This is the first in a series of six articles examining the skills shortages in the construction sector, the energy efficiency gaps widening as a result of the lack of skills, and how digital transformation can help address these by changing the system. The author is Paul McCormack (right), Innovation Manager, Belfast Metropolitan College.

The green economy is defined as one in which value and growth are maximised across the whole economy, while natural assets are managed sustainably. Such an economy is supported and enabled by a thriving low-carbon, environmental goods and services sector. Central to this new green economy is a vibrant green construction sector that would help contribute increased resource efficiency and resilience to climate change. So, how does that mpact those in the built environment?

In many countries across Europe the generational baby boom of the 1950s and 1960s is now retiring from the workforce and leaving big gaps behind. Smaller succeeding generations mean that there are fewer people available to fill these newly-vacant roles. This generational gap – allied with the negative stereotype about construction work – has led to a mis-match of skills needed versus skills possessed. Further compounding the problem is the increasing "university pathway" pressure on young adults and an accompanying drop *in lieu* of those taking up trades.



Unless we radically overhaul our skills and training systems this scenario is guaranteed to continue. However, if we take full advantage of technological innovation, especially digitalisation in the skills process, then we can help solve the problem. New digital technologies are now enabling people with the necessary skills and training to do jobs they previously could not.

Nonetheless, bridging the skills gaps in construction is a complex challenge for everyone involved that requires a comprehensive, cohesive strategy with all partners, including relevant government departments. In addition, we must invest to ensure that training and upskilling is properly resourced and delivered in a fashion that is commensurate with industry needs.

To begin with, we must fully embrace digitalisation and use the digital tools and technologies to enhance training and upskilling efforts, including through e-learning platforms and virtual reality simulations. Digitalisation must also be

A ventilation system installation and repair service technician at work.

used for delivery, support, certification and measurements of success.

We must also encourage a more diverse and inclusive workforce to help attract new talent, and ensure that the skills and perspectives of all workers are valued and fully utilised. Providing opportunities for career development will also help workers stay engaged and committed to the industry.

Innovation in skills delivery

Innovation in skills delivery is essential to increase the effectiveness and efficiency of the workforce. Projects such as ARISE are making maximum use of digital training platforms, enabling workers to access training materials and resources from anywhere, at any time, using a computer, tablet or smartphone. This makes it easier for workers to fit training into their busy schedules and can lead to more consistent and effective learning outcomes.

Eqally, BIMcert uses microlearning modules, breaking training materials down into small, easily-digestible modules that can be completed quickly. This approach also helps create a work/life/learning balance.

Additional digital tools include virtual reality (VR) training. This technology can be used to create immersive training experiences and to practice skills in a safe, controlled environment.

This can be especially useful for hazardous or complex tasks that are difficult to replicate in a traditional training setting.

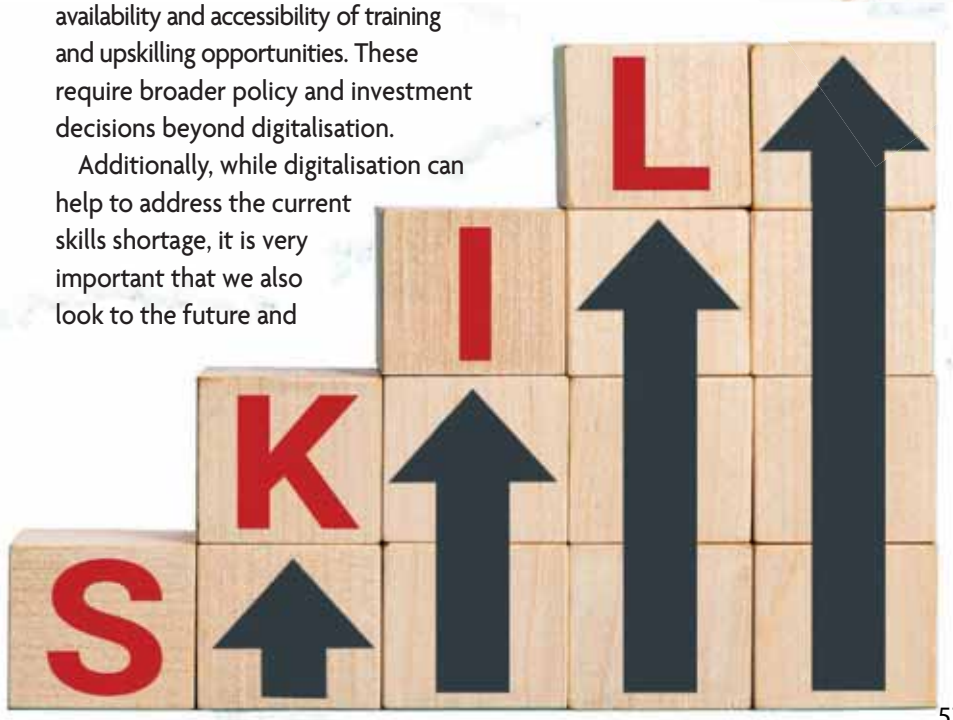
Other factors

However, digitalisation is not a one-size-all panacea. There are other factors that need to be addressed. For example, there may be cultural and social barriers that prevent certain groups from entering the construction workforce. There may also be issues related to the availability and accessibility of training and upskilling opportunities. These require broader policy and investment decisions beyond digitalisation.

Additionally, while digitalisation can help to address the current skills shortage, it is very important that we also look to the future and anticipate the changing needs of the industry. The skills and knowledge required today are likely to evolve and change over time, and it is likely that digitalisation alone may not be enough to keep up with these changes.

In a rapidly-changing world, it is essential for research, innovation and skills to keep pace with technological and market developments to support the realisation of societal goals such as sustainable development, net zero buildings, a circular economy and resilience.

However, the solution is not just about adopting new technologies, but about changing the mindset, behaviours and values of organisations, professionals and individuals. Industry leaders need to create a culture of innovation that encourages creativity, collaboration and experimentation. In the second article of this series, we will explore some of the key elements that can help bring that about. ■



Easy, accurate and cost-efficient pressure-testing

Wavin press-fit system with acoustic alert

Leading plumbing and drainage manufacturer, Wavin, has introduced the Tigris K5/M5, a new range of 16mm to 40mm press-fit fittings. Designed to effectively detect faults in unpressed fittings, it builds on the success and reliability already delivered by its predecessor, Tigris K1/M1.

The fitting's unique design with the Acoustic Alert* feature is the first to enable testing with air as well as water. The range comes with a variety of market-leading benefits to streamline the overall pressure-testing process, while also ensuring accuracy and maintaining a hygienic pipe system.

The 80-decibel whistle is an acoustic alert designed to easily identify unpressed fittings using an air pressure test. This feature ensures that installers can reliably and efficiently detect unpressed fittings in the loudest of environments.

K5 fittings incorporate a new transparent section as part of the body to give installers a quick visual check of the pipe insertion. This In4Sure 360° feature is a key benefit to ensuring a secure and leak-free installation.

Additionally, the Optiflow feature ensures a 50% greater flow rate when compared with K1/M1. Designed to deliver optimal flow performance through the fittings, this is especially relevant for smaller pipe diameters and will insure a higher total system performance.

Tigris K5/M5 fittings have a multi-press profile feature and are compatible with U, Up, H, TH and B profiles. The multi-press profile feature also ensures installers do not require investment in any additional tooling.

Michael O'Donohoe, Wavin Country Director, Ireland, commented: "The development of the new Tigris K5/M5 fittings with the Acoustic Alert and the In4Sure 360° features is set to optimise the installation and pressure-testing of this system across the industry and provide a variety of real-time benefits for installers. The wider diameter and increased flow rate make the fittings more beneficial for high-rise projects and larger developments, where there is increased demand on the pumping system to supply water to upper levels.

"Using air in pressure testing is widely considered the most hygienic option and this should be as accessible as possible to the industry. Designed to focus on the needs of installers, these market-leading features are set to ensure that the pressure-testing process is as easy, accurate and cost-efficient as possible."

The Tigris K5/M5 plumbing system, manufactured in accordance with ISO 21003 and WRAS approved, is suitable for hot and cold-water installations and heating systems. Whatever the application, Wavin Tigris K5/M5 offers the fittings and multi-layer pipes in diameters from 16mm to 40mm needed for a great job, every time. The Tigris K5 fittings comprise a PPSU body and the Tigris M5 comprises a brass body.

For more information visit wavin.ie or email projects.ie@wavin.com ■

*The Acoustic Alert feature does NOT replace the pressure test.

efca
European Engineering Consultancies

Only solution is digital ...

EFCA supports further and more rapid digitalisation

The pace of innovation in digital technology can often leave you breathless. Only a year ago, few of us had heard of ChatGPT, let alone tried it. Today, it is sometimes hard to tell the difference between text created by a person and text generated by a machine. This new development is creating fresh challenges for all of us. However, this new tool is only one of a plethora of emerging technologies which are changing the building and engineering sectors, but not – according to consulting engineers – in a way that poses an existential threat.

Digitalisation has been on the EU policy agenda for decades, starting with measures to handle e-commerce in the 1990s, passing through the validity of e-signatures and other wide-impact modern policy solutions. More specifically in the construction world, we have seen policy makers tackle BIM technology and digital twins, progressing more recently to policies related to data sharing, the liability of machines and how to legislate for the ethical challenge posed by AI. In this month's column, Sue Arundale, Director General, EFCA, puts the Association's work on digitalisation under the spotlight.

Digitalisation and BIM Committee

Chaired by a civil engineer from one of the world's largest firms with extensive expertise in energy, water and infrastructure projects, the Digitalisation and BIM Committee is made up of specialists in both engineering and digital applications. Its broader mission is to share information on recent developments, promote digitalisation and monitor its impact on the engineering industry.

Among its policy tasks, it is sharing relevant expertise with the European Commission on a number of EU initiatives, including Digital Building Logbooks and the development of standard clauses for cloud computing contracts. As EFCA's Director General, I play an active role on this Committee, bringing my many years of experience in dealing with digitalisation in construction in the Brussels policy-making environment to the debate. I have also spoken at various webinars on subjects such as BIM in public procurement, and contributed to an ongoing study on a European dataspace.

Sue Arundale, Director General, EFCA.

The Chair, Vice-Chair and other members of the Committee have helped to answer technical questions in other studies. Together, they have actively supported initiatives such as GAIA-X, DigiPLACE and buildingSMART International. The first of these was a project with 20 partners, funded by the European Commission, to design a Reference Architecture Framework for a digital platform for the construction industry at EU level. The latter is known for its work on open, international standards for infrastructure and buildings. EFCA and buildingSMART International have recently formed a strategic partnership aimed at advancing the adoption of open standards and digital technologies in the construction value chain – see https://www.efcanet.org/sites/default/files/2023-06/2023-06-29_bSI-EFCA-Joint%20Statement.pdf

The Committee also published *BIM and ISO 19650 from a project*

> ***"The need for greater sustainability and resilience of the built environment can only be managed responsibly through increased digitalisation of the whole sector.***

management perspective. This is a guide for engineering consultants using ISO19650 that also contains advice on BIM-related aspects not mentioned in ISO 19650. The document highlighted the necessity of further actions to be taken regarding the risks that have come along with the digital era.

What's next?

As well as continuing to share its expertise and undertake actions with other EFCA members and European engineering companies in order to help them find their way in the digitalisation ecosystem, the Committee wants to spread its vision. It believes that, with the challenges the whole construction sector is already facing with the climate emergency, the need for greater sustainability and resilience of the built environment can only be managed responsibly through increased digitalisation of the whole sector.

With that in mind, at the recent EFCA conference (co-organised with its Italian member OICE), a panel session was devoted to the role of digitalisation in structural resilience. One of the guests was Milena Feustel, Co-Chair of the EU BIM Task Group. This group is made up of public sector representatives from EU countries involved in public procurement. EFCA believes that in order to accelerate digitalisation, public contracts, in particular for infrastructure projects, need to embrace digital solutions.

Understandably, when faced with technical options – which will help deliver more advanced and resilient infrastructure in the long term, but which might be more expensive at the outset – the public sector needs to understand the value of these options. The buyers and the engineers could improve the contracting process with active dialogue and not just at the point of tendering, but more proactively. With that in mind, EFCA wants to further develop the partnership with the EU BIM Task Group – see http://www.eubim.eu/ It also intends to publish a position paper on the use of BIM in public procurement in the coming months.

Another speaker on the panel was Professor Žiga Turk from the University of Ljubljana, Faculty of Civil and Geodetic Engineering. He gave his assessment of the potential benefits, and limitations, of Artificial Intelligence in consulting engineering. One of the

"One of the roles of the Digitalisation and BIM Committee is to evaluate emerging technologies and their impact on the sector."

"Emerging technologies are changing the building and engineering sectors, but not – according to consulting engineers – in a way that poses an existential threat."

roles of the Digitalisation and BIM Committee is to evaluate emerging technologies and their impact on the sector. It was reassuring to learn from this academic, himself qualified with degrees in engineering and computer science, that AI is unlikely to present an existential threat to engineers. Instead, it might support the sector with certain tasks that are time-consuming and can be performed much more quickly by a machine, leaving engineers to spend more time on other tasks, which will continue to need a human scientific brain.

Digitalisation a cross-cutting theme

Another EFCA committee that is looking at emerging technologies is the Future Trends Committee. In its last report – see https://www.efcanet.org/index.php/publications – it considered the changing role of the traditional engineer, which in future, will require as much competence in data engineering as in, for example, civil engineering. Therefore, it is not surprising that EFCA is nurturing more collaboration between its committees. Furthermore, given that the inextricable link between digitalisation on the one hand, and sustainability and resilience on the other, has already been alluded to, both committees already mentioned will now collaborate with EFCA's European Green Deal Committee. This will help ensure that EFCA's policy work will takes a holistic and coherent approach in its engagement with the EU policy agenda on the built environment.

Looking ahead

Like many other industry federations, EFCA is working on its manifesto for the EU elections in 2024 and the corresponding appointment of new European Commissioners. One of the key themes in its recommendations will be the continuation of relevant measures at EU level to accelerate the transformation of the built environment into one that is truly digital. We are not there yet, but in EFCA we believe that this means a fully digital life-cycle, from design through to improving the user experience, the efficiency of buildings and infrastructure, and the traceability of materials. It will also lead to the easy maintenance and conversion of use, or deconstruction at the end of life, enabling the maximum recovery of precious materials for re-use or recycling.

Although EFCA's manifesto for 2024 has not yet been completed, it will call for more digitalisation, not less. It will also encourage policy makers to keep up the pace in terms of sustainability and the resilience of the built environment, so that efforts to respond to the climate emergency are maintained. ■

CIBSE Touch Rugby is the way to go!

The inaugural CIBSE Touch Rugby tournament – which replaced the five-a-side football competition and was devised to promote diversity and inclusion – proved an enormous success. There was a far greater gender balance among the participating teams and, while there was still a competitive edge to the occasion, it was a fun-filled evening with laughter, good-natured banter and teasing the order of the day.

Winning team – back row: Ryan Loney, CIBSE YEN Chair with Barry Drake, Vincent Mahony, Panasonic; David Howe; Hannah Murphy, Panasonic; and Sean Fitzsimons. Front row: Aravind Singh with Oswaldo Perez, Dina Murtazina and Sean McMahon.

Panasonic Ireland sponsored the tournament with Vincent Mahony and Hannah Murphy in attendance to cheer on the participants and present the perpetual trophy to the winners.

The venue was Coolmine RFC where the welcome was warm and facilities excellent. An added bonus was to play on the grass pitch and, despite the odd torrential shower, everyone had a wonderful time.

That said, it was still a competition and, after a round robin series of games, O'Callagahn RED emerged overall winners with Hereworks taking second place and Mitsubishi Electric third. All agreed it was an excellent occasion and are already looking forward to next year's tournament.


hireacra

ASHRAE Ireland Galway Conference

Empowering Change: report from Galway Energy Summit

Energy enthusiasts, experts and innovators recently converged on the Bailey Allen Hall, University of Galway for "The Galway Energy Summit 2023". This event was co-hosted by ASHRAE Ireland, as part of the ASHRAE Region XIV Chapter Regional Conference (CRC), and drew ASHRAE delegates from over 20 countries. The outcome was a weekend filled with rich discussions and fruitful collaborations.

Under the captivating theme "Achieving Net Zero", the summit resonated perfectly with Ireland's ambitious vision of attaining net-zero emissions by 2050. Its significance was evident by the presence of leaders from pivotal organisations within the industry, highlighting the shared commitment to achieving net zero and the urgent need for collaboration.

The Galway Energy Summit, which was founded in 2018 by a dedicated group of University of Galway Energy Society students, had seen remarkable success in its previous editions: "The Future of Energy in Ireland" (2018) and "Changing for our Climate" (2019). Despite the setbacks of the COVID-19 pandemic, this year marked the triumphant revival of the event, courtesy of the unwavering support of ASHRAE Ireland.'

Insights and discourse

The summit opened with a warm welcome from Conor Deane, original founder of the Galway Energy Summit and current YEA Chair of ASHRAE Ireland. The stage was then shared by ASHRAE Ireland President, Gary O'Sullivan, ASHRAE Global President, Ginger Scoggins, CIBSE President, Adrian Catchpole, and ASHRAE Global Vice-President, Ashish Rakheja. All echoed the theme of unity in tackling the climate crisis through collaboration and a healthy and sustainable built environment for all. A key take-away as stated by Gary O' Sullivan was: "In 30 years time when our children ask us why we didn't do something, we will be able to say we did, that we didn't fail them or their children. We have done our best to ensure that they too have a future. As engineers we can make a difference, we can promote change".

The road to Net Zero

The event's heart lay in its diverse and impactful panel discussions. Dr Rory Monaghan, Associate Professor of Energy Systems Engineering at the University of Galway, steered the insightful conversation during "The Road to Net Zero: An Outlook." Visionaries such as Dr Paul Deane, Catherine Joyce O'Caollai, Declan Meally, Jaap Hogeling and Ellen Costello illustrated Ireland's journey towards net zero with their honest reflections and promising insights.

Dr Paul Deane delivered a pivotal insight during the first panel session, emphasising that Ireland remains heavily reliant on fossil fuels, a fact often obscured by media portrayals. He made it clear that Ireland is poised to fall short of its carbon reduction targets because of this lingering dependence. However, a glimmer of hope emerged in the panel discussion which showcased Ireland's promising strides towards innovative and sustainable solutions and a highly-educated and motivated workforce.

Driving innovation

The subsequent panel, "Net Zero in Industry," then delved deep into the strategies of prominent corporations, both national and multinational. Siobhan McHugh of PWC moderated as industry leaders David McAuley, Peter Moran, Michael Curran, Stephen Daly and Catherine Sheridan then shared their respective companies' sustainable approaches.

Left: Road to Net Zero speakers – Declan Meally, SEAI with Jaap Hogeling, EPB Centre; Ellen Costello, MKO; Dr Rory Monaghan, University of Galway; Catherine Joyce O'Caollai, ESB; Dr Paul Deane, UCC and Gary O'Sullivan, President, ASHRAE Ireland.

Michael Curran's presentation was a stand-out moment as he provided an in-depth case study highlighting the University of Galway's remarkable efforts to reduce its carbon footprint. Particularly noteworthy was the recent installation of a ground-source heat pump, a practical and innovative solution that now efficiently heats both the university's swimming pool and its gym.

The circular economy

The importance of the circular economy and embodied carbon found its spotlight in the third panel, "Switching to a Circular Economy." Dr Hywel Davis of CIBSE moderated this crucial discussion, featuring Rachel Loughrey, Matt Paskin, Rosemarie Mac Sweeney and Samuel Boswell. The audience gained insights into materials reuse, sustainability, and the power of a circular approach in achieving net zero. Rachel, from IGBC, delivered an insightful account of their initiatives in which she highlighted the Construction Materials Exchange (CMEx), a pioneering platform that facilitates the highest value reuse of construction materials. This innovative approach not only conserves precious raw materials, but also the energy invested in their initial production.

Rachel also introduced the concept of a "Material Passport" which she likened to an identity document for materials. These passports contain comprehensive data that define unique characteristics of materials within products, thus enhancing their value for future recovery and reuse.

The way forward

The closing panel, "Measuring Net Zero", tackled the pivotal aspect of quantifying progress. Marisa Higgins of ARUP led the conversation that also featured Paul Walsh, Seán Sirr, Neil O'Leary, Robert McCarthy and Andrea Ahern. The panel underscored the importance of accurate and reliable measurement methodologies for assessing our collective journey towards net zero.

Inspiration and mentorship

The summit's finale provided a mentorship session where young and experienced engineers connected, embracing the power of mentorship in shaping the future. As Kailash Satyarthi rightly said: "The power of our youth is the common wealth for the entire world." This session fully embodied the summit's core essence – empowering the next generation to drive change. This session aligned with the ASHRAE mentorship programme which was established last year to assist young engineers in the early stages of their career and provide them with guidance, advice and tips from industry leaders.

Acknowledgments

The success of the event was down to organisers Gary O'Sullivan, Karen McNevin and Conor Deane; the ASHRAE Ireland Board; the contribution of the speakers; and the sponsors. ■

Opening speakers – Ashish Rakheja, Vice-President, ASHRAE with Adrian Catchpole, President, CIBSE; Ginger Scoggins, President, ASHRAE; Gary O'Sullivan, President, ASHRAE Ireland and Conor Deane, Chair, ASHREA YEA.

Net Zero in Industry speakers – David Mc Cauley, Bit Power with Peter Moran, AbbVie; Catherine Sheridan, Ryze Hydrogen; Stephen Daly, HSE; Michael Curran, University of Galway; Conor Deane, Chair, ASHREA YEA and Siobhán Mc Hugh, PWC.

Measuring Net Zero speakers – Neil O'Leary, Codema with Robert McCarthy, SEAI ; Senator Pauline O'Reilly, Green Party; Sean Sirr, EM3; Marrisa Higgins, ARUP; Paul Walsh, CIM; Andrea Ahern, Catagen and Samuel Boswell, LCA One Click.

THE OBTUSE ANGLE

PAT LEHANE

Gunning golden eagle

Not satisfied with winning the recent CIBSE golf outing, Team EICL did so in some style. Highlight of their round was on the 18th hole.

Christian McDermot hit a 280-yard drive down the middle of the fairway, and then an 180-yard shot onto the green where it landed 80 feet from the pin. Rising to the challenge, Stephen Gunning then made the eagle putt for a three on the par five. Any wonder then they finished with a net score of 55 while playing off a team handicap of seven.

Tender price indicator

According to the latest SCSI Tender Price Index, the annual median national rate of inflation from July 2022 to June 2023 was 6.2%, down from 11.5% in the preceding 12-month period. Even more encouraging is the fact that commercial tender prices for the first half of 2023 were 2.4%, down from the 3.7% of the previous six months..

While undoubtedly good news, it is still an inflationary trend. Relative stability in the supply chain may have returned but energy and transport costs continue to be volatile. Added to that is the inflationary impact of the skills shortage.

Of course, the overall trend is positive but let's not get complacent.

'Peter Pan' McMahon

Peter McMahon from EICL slips over for an excellent score having out-run the opposing team members during the recent CIBSE touch rugby tournament held at Coolmine RFC .

He also helped referee some of the games. Not sure what he is on but, whatever his energy source is, I'd like some of it!

Mobile NZEB training

Laois Offaly Education and Training Board and the National Construction Training Campus at Mount Lucas have developed a mobile NZEB training unit that will travel to construction sites and schools across the country.

The unit is powered by solar PV panels and includes a working heat pump and ventilation system, making it entirely self-sufficient.

It will mean greater accessibility to upskilling opportunities for workers in construction and will also promote future careers in construction by introducing senior cycle students to the innovative technologies featured.

Passive Dynamics reflects back

To mark its third year in business, Ciarán McCabe and his colleagues at Passive Dynamics have devised a novel "community give-back" scheme.

The company will fully fund a 3kW solar PV system for a lucky charity or not-for-profit organisation. It is on its own trajectory to becoming a carbon neutral company and, by offsetting its carbon emissions in this way, it will help other organisations that may be struggling to pay their energy bills.

To apply to the scheme was a simple process. Submissions are now being assessed with the winner to be announced by the end of September.

Fire Protection

Safety First! Fire protection systems, such as sprinklers etc. have to be incorporated in many modern commercial and industrial buildings and apartment blocks due to regulation, and are becoming increasingly commonplace in residential housing.

Pressure boosting
for sprinkler systems

Water consumption
& leakage detection

Digital services

xylem
Building Solutions

www.xylem.com

New Aquarea L Generation heat pump

A revolution in design, efficiency, connectivity and sustainability.

Year-round comfort
Aquarea heat pumps provide heating, cooling and hot water for the whole house.

Green future
Aquarea L Generation air to water heat pump is engineered with natural refrigerant R290 with GWP 3.

High performance
Innovative hydraulic split heat pump, with 75 °C water outlet down to -10 °C outside, and operation down to -25 °C.

Harmony at home
Compact design blends into indoor and outdoor spaces. The heat pump's quiet operation brings harmony between technology and the home.

GOOD DESIGN AWARD 2022
BEST 100

Smart control
Wi-Fi included for smart control, advanced monitoring and servicing.

heating & cooling solutions

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