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BS News September/October

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Building Services news



**Heating Regs
Drive innovation**



**Part L 2017 and
nZEB Compliance**



**CIBSE Annual
Golf Outing**



**Part B & Fire-
rated Downlights**



New focus on health and 'WELL Being'

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Tender prices to hit 2004 high?

According to the latest figures from the Society of Chartered Surveyors Ireland (SCSI), construction tender prices have risen 2.6% in first half of 2017, with a further rise of 3.6% predicted for the second half of the year. On the back of the similar annual 6.3% increase recorded in 2016, this will bring tender prices back to the level they were in 2004.

While these tender price increases relate to “non-residential” construction, it is inevitable that they will also impact on house building. The same market forces apply to both sectors. These include increased activity, skill shortages that drive up wages, and cost increases in materials. Much of the latter is driven by the Euro and Sterling exchange rate, and the uncertainty surrounding Brexit.

It is somewhat ironic, but perhaps inevitable, that the increased activity has brought with it so many difficult-to-control challenges. Now is the time for careful management and cool heads.

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NEWS AND PRODUCTS

CIBSE Lunch 2017

Bookings for this year’s CIBSE Ireland Annual Christmas Lunch are now open, though they are going fast! This is by far the biggest networking and social opportunity on the building services calendar with approximately 650 expected to attend this year.

To help accommodate the ever-growing attendance – and to make the experience more enjoyable – this year’s event will take place in The Hogan Suite at Croke Park. Main sponsor for the pre-drinks reception is John Sisk & Son. Contact: <http://www.cibseireland.org/>

Right: Paul Martin, CIBSE Ireland Chairman and Padraic O’Connor, Manager, Building Services Department, John Sisk & Son pictured at Croke Park.



Sanbra Fyffe and Herron & Son

Sanbra Fyffe and Herron & Son of Sligo have teamed-up with Hansen of New Zealand to bring a range of over 1,000 products from the New Zealand specialist manufacturer to Ireland.

Six Hansen product ranges are now available and include a new range of Easy-Fit compression fittings specifically designed and manufactured for the Irish market. An impressive feature of these fitting is that they can be hand tightened to 40bar.

Other product ranges include True Fit threaded fittings; True Fit tank fittings; Quick Connection unions and Easy Fit self-tapping saddles; and, for agri, rural, horticultural and irrigation use, the Hi-Flo trough-valve collection (Fast, Super and Maxflo).

“There are no comparable products on the Irish market that can rival Hansen in terms of quality, cost-effectiveness or ease of use”, says said Noel Conroy, Sanbra Fyffes’s Commercial Manager. “Key benefits include the fact that one fitting can be used with all pipe types, they are manufactured to withstand the harshest weather conditions, and carry a lifetime guarantee”.



Detailed catalogues and specification sheets are available from builders merchants, Co-Op stores and hardware stores throughout Ireland.

Further information from Sanbra Fyffe, Tel: 01 – 842 6255; email: sales@sanbra.ie; Heron & Son, Tel: 071- 913 3100; email: sales@herron.ie

Left: Noel Conroy Sanbra Fyffe with Colum Murphy, Herron & Son.

Lindab appoints Mulhare

Brian Mulhare, who has extensive knowledge and experience of the air handling market, has been appointed Lindab AHU Product Manager.

The new Lindab AHU range (see also page 50) is Eurovent Certified and the units already have an established

track record in most mainland Europe markets. All are available as energy efficiency ‘Class A’ and with “ErP 2018 ready” compliance. On-board, pre-wired controls are available with all established protocols for interfacing with building management systems.

Contact: Brian Mulhare, Lindab AHU Product Manager. Tel: 087 – 401 3021; email: brian.mulhare@lindab.com



Porter joins Euro Gas

James Porter has been appointed Sales Director of Euro Gas. James brings a wealth of experience of the HVAC market to the post having previously worked as Sales Director of Remeha in the UK.

Speaking of his appointment Martin Garvey, Managing Director, said: “We welcome James to the Euro Gas team and his experience and input will strengthen our offering and technical expertise in the marketplace”.

Contact: James Porter, Sales Director, Euro Gas. Tel: 01 – 286 8244; 087 – 167 2164; email: james.porter@eurogas.ie





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Wednesday October 18th All Welcome

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- Light Lunch
- **Free A+ rated new Digital Lowara circulating Pump (Worth € 120)**
- **Free Body Warmer**
- ***The Above are free to all pre-registered attendees***
- Free Draw for your chance to win one of five family passes to Tayto Park
- Free Draw for your chance to win an overnight stay in the 5 star Powerscourt hotel
- See Xylem's new Building services exhibit rig
- See Campion Pumps Water Sterilisation rig
- See Campion Pumps mobile Well Test rig
- **See Demo of the 5th Generation Hydrovar Variable speed drive**
- **See Demo of Flygt's new Concertor Integrated Intelligence Waste Water pumping Solutions.**
- See Demo of Campions Pumps online monitoring Suite

Schedule of Events

- 12:00 - 12:30
 - Welcome and premises Tour
- 12:30 – 13:30
 - CPD Session 1:
 - Packaged Pump Stations
- 13:30 – 14:30
 - Light Lunch
- 14:30-15:30
 - CPD Session 2:
 - Variable speed Cold Water Boosting
- 15:30 – 16:00
 - Presentation on Flygt Concertor
- 16:00 – 18:30
 - Open evening, all welcome

Please register for event by emailing sales@campion.ie



NEWS AND PRODUCTS

Condair Jetspray at Fujifilm

A Condair JetSpray humidification system is maintaining an ideal 40-60%RH (relative humidity) at the Fujifilm Imaging and Innovation Centre. The JetSpray has been installed to provide Fujifilm’s demonstration area, which incorporates the latest Jet Press 720s, with the optimum atmospheric conditions for paper storage and printing.



The JetSpray humidifier consists of a control panel feeding compressed air and water to rows of self-cleaning spray nozzles mounted in the area to be humidified. The compressed air atomises the water as it is released from the nozzle, creating a very fine aerosol that rapidly evaporates. The nozzle design ensures that water can only

be introduced when compressed air is flowing, guaranteeing drip-free humidification. The system has a fully modulating output and offers very close humidity control at $\pm 2\%$ RH.

Regular and automatic flush cycles ensure hygienic operation by preventing water from remaining in the system to stagnate. A PureFlo Ag+ silver ion dosing system is also incorporated on the incoming water supply. Silver has powerful antibacterial properties and provides a strong residual effect throughout the water pipe work.

The JetSpray has standard plumbing fittings and so is easy to install for any competent HVAC contractor. It can run on mains, demineralised or softened water and, due to a self-clean pin in the nozzle, requires very little maintenance.

Contact: Damien Power, Condair Area Sales Manager for Ireland.
Tel: 0912 – 597 120; 0044 - 7802 669819;
email: damien.power@condair.com

RACGS retains Ryder Cup



The annual Ryder Cup match between RACGS in Ireland and the NRGs (UK) took place in Fota Island Park, Cork. In a very close match RACGS retained the trophy, having won it last year in the UK.

Mark Kiely, RACGS Captain, is pictured with the trophy and the sponsors on the day, Pat and Derek Cummins of RDL.

Haughton & Young fundraiser success

The recent Haughton & Young golf outing at St Margaret’s Golf Club proved a great success. As a result of generous sponsorship, and the auction, a total of €8,000 was raised for the LauraLynn Foundation.

A most enjoyable day was had by all, especially Maurice Farrell who had an Albatross on the par 5, 12th hole. Congratulations Maurice, and to all prize winners, and indeed all who participated and made this such a successful fund-raising event.



The winning team at the Desy Haughton charity outing in St Margaret’s Golf Club.



Maurice Farrell, Farrell Electric, collecting his ball after scoring an Albatross during the outing.

NEWS AND PRODUCTS

Lindab/Vent-Axia golf day



The Lindab/Vent-Axia annual golf outing took place recently at Carton House. The format was a team scramble and 40 players took to the O'Meara course where they enjoyed a great day of golf, wonderful weather and good fun. A BBQ and prize-giving took place shortly afterwards.

It was a team event and overall winners were Tony Ptohopoulos, Marcus Sutcliffe, Ollie Fahy and Jim Bollard.

Second were Brian Mahon, Adam Dent and Paul Cassin, while third were Anthony O'Connell, Elaine Ward and Mick Kearney. Elaine also scored a wonderful "hole-in-one" on the second hole.

Photo shows overall winners Tony Ptohopoulos, Marcus Sutcliffe, Ollie Fahy and Jim Bollard pictured with Pat Boland, Managing Director, Lindab Ireland.

Riello returns to British Grand Prix at Silverstone

Riello customers recently enjoyed an exciting day of motorsport at the 2017 Octo British Grand Prix MotoGP at Silverstone, where Riello-sponsored Scott Redding achieved an impressive 8th place against tough competition.



The event also marked Riello's ongoing sponsorship of the Pramac Ducati team. Riello Sales & Marketing Director Paul Sharp commented: "Riello is a long-term sponsor of the Pramac Ducati team. There are clear synergies between our commitment to innovation in our products and the expertise and advanced technology that drives motorsport."

For further information visit: www.rielloburners.co.uk
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NEWS AND PRODUCTS

BPM Charity Golf Day

This year's annual Baxi Potterton Myson charity golf day took place at the City West Hotel and Golf Resort with the Alzheimer Society of Ireland being the nominated charity.

A total of 12 four-balls participated and the weather, which looked threatening early on in the day, was kind with most getting around the course without being rained on.

The winning team was PWC with Heat Merchants coming in a close second and Hevac taking third place. Sean O'Grady of New Wave won nearest the pin with Mick O'Shea Jnr getting longest drive. Mick O'Shea Snr was the highest bidder for the Tubs & Tiles voucher.

Once again this was a very successful event and, as always, raised a considerable sum for the nominated charity.



First – Team PWC: Martin Folan with Ruairi McEntee, Boyd Michau and Ryan Doherty.



Second – Team Heat Merchants: Mick O'Shea Snr with Alan Hogan, Mick O'Shea Jnr and Seamus English.

Carrick lands Dubs shirt

At the launch of the Wilo Stratos Maxo in Croke Park recently (see page 10), Karl Carrick's name was first out of the hat in the draw for the framed Dublin jersey that had been signed by the team immediately after their All-Ireland win. A delighted Karl was presented with his prize by Derek Elton, Wilo Ireland Managing Director.



Dent joins Kerrigan Mechanical

Adam Dent, B.Eng, has been appointed Project Manager at Kerrigan Mechanical, the multi-disciplined engineering contractors with a wide range of experience in commercial plumbing, heating, ventilation and extract systems. Kerrigan Mechanical evolved from Midland Heating and Plumbing, which was originally established in 1998, and has now commenced a new strategic development phase.

Adam is a DIT building services engineering graduate with broad experience across the entire building services spectrum. He has been involved in technical design and technical sales with Hevac Group, Ireland's leading heating, plumbing and renewable energy suppliers, and now brings this experience to bear on the contracting sector.

As Project Manager with Kerrigan Mechanical Adam's duties entail new client business development, negotiation of tenders, as-built design drawings and project management to include all aspects of the contract. This involves procurement of materials, overseeing installation, managing specialised sub-contractors, and all other requirements to legal completion of the project.

Contact: Adam Dent, Project Manager, Kerrigan Mechanical
Tel: 087 – 259 4066;
email: adam@kerriganmechanical.ie





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To apply Please send CV with a covering letter to sales.ie@solerpalau.com

Closing date for receipt of applications is Thursday, 30 November 2017

WILO BRINGS THE FUTURE

Wilo-Stratos MAXO Croke Park debut

Fresh from its inaugural introduction at ISH 2017, and having won the prestigious “Design Plus Award” at the show, the Wilo Stratos MAXO made its Irish debut at Croke Park recently. At the launch Derek Elton, Wilo Ireland Managing Director, and his colleagues, played host to a large cross-section of Consultants in what is the first of a series of “smart pump” events to be held throughout the country.

In addition to the technical presentation by Ralph Huysers, Wilo SE, Germany, the guests visited the Croke Park plant rooms where Wilo has fitted high efficiency pumps and booster sets, including the pitch irrigation system. In fact, Wilo has also recently commissioned Pairc Uí Caoimh, Cork to add to Thormond Park, Limerick and Pearse Stadium, Galway.

The guests also did the Croke Park tour, visited the dressing rooms, and then enjoyed a sumptuous meal and entertainment well into the late evening.

It was a fitting occasion given the significance of the innovative technology embodied in the Stratos MAXO. “We regard the smart-pump as a new category of pump that goes far beyond our high-efficiency pumps, or pumps with pump intelligence”, says Derek Elton. “It is the combination of the latest sensor technology and

innovative control functions, coupled with bidirectional connectivity, software updates and excellent usability, that make this pump a smart-pump to suit the digitalisation channels”.

From system efficiency through to connectivity, installation and configuration, the Wilo-Stratos MAXO sets standards that represent a new milestone in pump technology. Top efficiency is a basic prerequisite, while the special features afford maximum connectivity and extremely easy operation.

A smart pump means ...

- Heating and cooling energy meter;
- Independent system optimisation;
- Convenient adjustment of settings using an app;
- Thermal disinfection function for hot water return systems;
- Mobile monitoring and control;



The large attendance at the Wilo Stratos MAXO launch in Croke Park.

- Direct online access to operating notifications;
- Adjustment of operating modes (e.g. remote maintenance);
- Online configurability.

Special features

- Intuitive operation by application-guided settings with the setup guide, plus the combination of a new display and operating button using the Green Button Technology;
- Highest energy efficiency through the interaction of optimised and innovative energy saving functions (e.g. No-Flow Stop);
- Optimum system efficiency due to new, innovative, intelligent control functions like Dynamic Adapt Plus, Multi-Flow Adaptation, T-const. and ΔT -const.;
- Latest communication interfaces (e.g. Bluetooth) for connection to mobile devices (Smart Phones) and direct pump linkage via Wilo Net for multi-pump control;
- Simple electrical connections due to generous cable terminal space and Wilo plug in mains connector.

Applications include hot-water heating systems of all kinds, air-conditioning systems, closed cooling circuits and industrial circulation systems.

See www.wilo.ie for full details. ■



Michael O’Herlihy, Wilo Ireland with Ralph Huysers, Wilo SE, Germany, Damian Gernon, Derek Elton, Declan McPartlin and Daniel Carter, all Wilo Ireland.

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BOSCH



HEATRAESADIA





EURO GAS LTD

New boiler ranges to benefit consultants and contractors alike

Euro Gas Ltd is the leading supplier in the commercial HVAC sector in the Republic of Ireland and Northern Ireland. Established in 1985, Euro Gas is committed to providing customers with the highest degree of technical service and sales support. This extends not just to the production values of the system, but also to system design, application of products, and to the speed with which this all-embracing service is delivered. Euro Gas is committed to offering its customers high-performance, energy and cost-saving heating, ventilation, and air conditioning products.

Euro Gas has an extensive portfolio of market-leading brands and just recently two of its principal boiler suppliers – Remeha and Rendamax – upgraded their offerings.

Remeha has added a 160kW wall hung condensing boiler to its range as an extension to the market-leading Quinta Pro. It has also introduced a new floor standing boiler, making its range between 160kW – 300kW very compact and competitive.

Rendamax has upgraded its previous offering with the introduction of the R40 EVO and R600 EVO. Both are significant upgrades that give Euro Gas an excellent stainless-steel boiler with large ranges, both on the wall and on the floor.

Full technical details on all four new boilers follow here.

Providing our customers with the highest degree of technical service and sales support

Remeha Quinta Ace (160kW)

The Quinta Ace 160 is one of the most advanced wall hung boilers on the market. It can work as an extension of the Quinta Pro range, giving the ability to mix and match cascades to achieve the closest possible match to the required load. With plant room space at a premium, the ability to move large outputs away from the floor and onto the wall makes the overall design process easier.

Features and benefits include:

- Built on the Quinta platform – tried and tested technology;
- Class-leading power output to physical size ratio. This makes plant room space reduction and access through doors and lifts easier;
- Suitable for sealed systems and open-vent installations;
- Perfect for new or retrofit installations;
- Cascade up to eight boilers in-line or back-to-back;
- Low NOx.



Southern Cross Business Park, 38B Boghall Road, Ballymorris, Bray, Co Wicklow.

<https://arrow.tudublin.ie/bsn/vol56/iss5/1>

Tel: 01 – 286 8244 Email: sales@eurogas.ie




Remeha Gas 220 Ace (160kW – 300kW)

The new Gas 220 Ace is a free standing, gas-fired, high efficiency condensing boiler range that sets new standards.

The boiler's innovative design means it is manoeuvrable and adaptable to space-saving configurations. Features and benefits include:

- Wide range of outputs – available in 160kW, 200kW, 250kW and 300 kW models;
- Modular design for any space. All connections and pipework enter the top so the Gas 220 Ace models can be positioned side-to-side or back-to-back. This means a modular configuration enabling large outputs can be installed in difficult-to-reach areas.
- Lightweight and manoeuvrable – the lightweight unit is supplied with integral wheels so it can be delivered through a standard door and lifts. It is also easy to manoeuvre within the plant room. In addition, no boiler disassembly is required during servicing;
- Ultra Low NOx.



Rendamax R40 Evo (60kW – 140kW)

The Rendamax R40 EVO series is a completely re-engineered range of wall mounted, pre-mix modulating, high efficient condensing boilers consisting of six models with outputs from 60kW to 140kW. Features and benefits include:

- Extremely low NOx emissions of 38mb/kWh;
- Robust stainless steel heat exchanger;
- Cascade arrangements for flexible systems up to 1.1MW



Rendamax R600 Evo (150kW – 570kW)

The R600 EVO series of floor-standing, pre-mix modulating, high efficient condensing boilers represents a significant step forward in heating technology. With extremely flexible configurations, clever design and a range of seven models available, the boiler is perfect for a variety of commercial applications. Plus, extensive cascade arrangements of up to eight boilers with a combined output of 4560KW are possible. Features and benefits include:

- Impressive lifetime high-efficiency (up to 100%);
- Low emissions;
- Compact dimensions with two widths to pass through standard doors;
- Smart modular concept for easy installation, especially into buildings with restricted access.



'Super Quiet' Panasonic heat pump for domestic installations

Panasonic has introduced a new "Super Quiet" range of air to water heat pumps, called the Aquarea T-CAP SQ series, to provide contractors with a system that can be installed in closely-positioned domestic properties where quiet operation is of utmost importance.

Features of the new range include:

- Sound levels as low as 50 dB(A);
- Two sound modes – normal and whisper;
- Energy efficient COP rating of 5.03;
- Operational in outside temperatures of -20°C.

The 9kW T-CAP SQ model achieves a sound level of 61dB (A) in normal mode and as low as 50dB (A) in whisper mode. The sound reduction has been achieved with sound-absorbing materials that are commonly used in vehicles

and computer systems. Panasonic's three-blade fans also contribute to the model being particularly quiet. Thanks to its quiet operation, this heat pump can be installed in domestic properties that have been built very closely together.

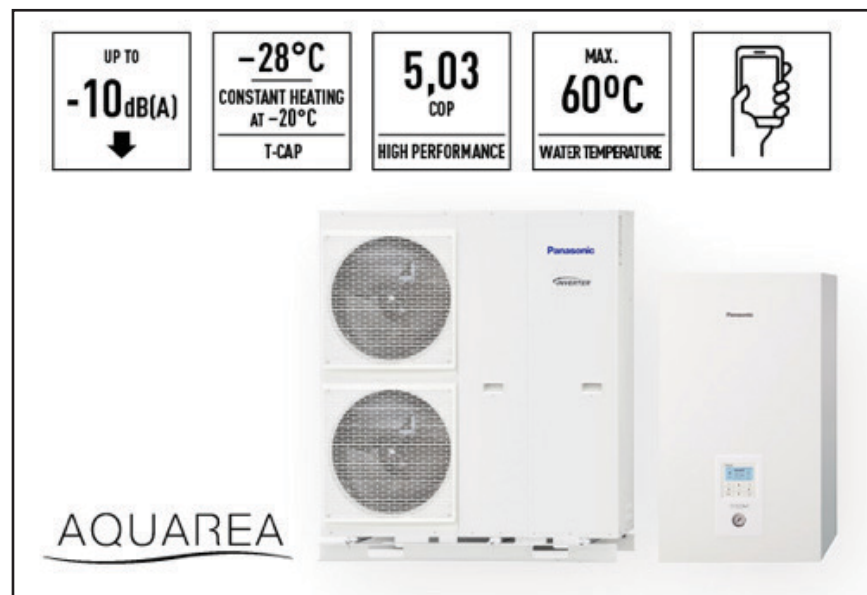
The T-CAP-SQ is available in 9kW, 12kW and 16kW (3 phase). These models provide high efficiency levels, with a COP of up to 5.03 (A7/W35).

Due to the design of the cooling circuit, the "Super Quiet" model

provides the heating power exclusively via the heat pump processor. Even when the outside temperature reaches as low as -20°C, the unit works without a power drop. This provides sufficient reserves for the optimal design of the heat pump system to the actual power requirement at the design point.

In addition, the units can be used as replacements for aging oil or gas heaters in existing buildings, and are suitable for flow temperatures of up to 60°C.

The T-CAP SQ air-to-water heat pumps are part of the Aquarea H Generation range and benefit from the latest Panasonic heat pump technology. These units are controlled via the new H-Generation controller. During operation, the controller provides time-switch



programmes for heating in winter and cooling in summer. In addition, thanks to the display of the current COP, the customer can now always see how effective the system is in real-time.

"Super Quiet" heat pumps can also be linked to the Panasonic Smart Cloud, allowing the user to control and monitor usage and energy consumption remotely via the internet, at any time.

Contact: Vincent Mahony, Ireland Sales Manager, Panasonic. Mobile: 01 – 087 – 969 4221; email: vincent.mahony@eu.panasonic.com ■

'Stainless steel only option' – Eurofluid

Today, commercial heating system design demands the most reliable, energy efficient components incorporating the latest cutting-edge technology. Heating and hot water technologies should work in harmony to ensure the smooth operation and optimum performance of the entire system. Everything from boilers, CHPs, controls, pumps, water boosting systems, calorifiers, thermal stores, pressurisation systems and conditioning systems should all work in synergy to deliver the highest operational reliability.

Against this background Eurofluid has built its reputation on quality products and systems manufactured from quality materials, and especially boiler heat exchangers made from stainless steel, not aluminium. "A key component in specifying the right boiler is the heat exchanger within the boiler, as maintenance costs, durability and product lifetime should all be considered", says Stephen Costelloe, Director, Eurofluid Handling Systems.

"Although aluminium is cheaper to manufacture, Eurofluid's boiler range – with stainless steel heat exchangers – has never been more affordable. That is why we supply only the highest-quality brands such as ACV Prestige wall hung and Adisa ADI CD floor standing condensing boiler ranges".

Contact: Stephen Costelloe,
Director, Eurofluid Handling Systems.
Tel: 01 – 460 0352;
email: info@euro-fluid.com;
www.euro-fluid.com ■



'Europak' Air and dirt separator/ hydraulic balancer

Eurofluid Handling Systems has just launched its own-brand 'Europak' combined magnetic air and dirt separator/vertical hydraulic balancer product range. This competitive product range consists of:

- Combined magnetic air and dirt separators 50-600mm flanged, available ex-stock;
- Vertical hydraulic balancer combined air and dirt separators (standard or magnetic).



Due to the advanced manufacturing technology, the inclusion of Europak combined units within heating or chilled water systems offer the designers and end-users four distinct advantages;

- Balanced hydraulic pressure in heating installations consisting of multiple circuits and pumps;
- Air removal, including micro-bubbles;
- Magnetite removal with powerful gauss neodymium magnets;
- Dirt removal to 5 micron.

Benefits

- No more overloaded pumps;
- Improved accurate regulation of the system is possible;
- Considerably-improved heat transfer;
- Higher output by the system;
- Longer system and component lifespan.

New regulations to drive product innovation in heating sector

Ecodesign and energy labelling are the EU's flagship policies to address the energy and resource-use of appliances, and there is worldwide demand for more efficient products to reduce energy and resource consumption. They are an effective tool for improving the energy efficiency of products as they help eliminate the least-performing products from the market. They also drive industrial competitiveness, and boost job creation and economic growth. In addition, they ensure a level playing field for manufacturers and drive investment and innovation by promoting better-performing and more efficient products throughout the internal market. See Figure 1.

By 2020 this framework is estimated to deliver energy savings of around 175 Mtoe per year in primary energy, more than the annual primary energy consumption of Italy. For consumers, this translates into €490 savings per household per year on energy bills. Moreover, this policy is estimated to deliver approximately €55 billion per year extra revenue for industry, wholesale and retail sectors, part of which could translate into as many as 800,000 direct additional jobs in the sectors concerned.

How ErP works?

The Eco-design (sometimes called the ErP) Directive does not set binding requirements on products by itself but rather provides a framework for setting such requirements through implementing measures. The Commission prepares implementing measures only for products that have

significant sales and trade in the EU and a significant environmental impact and potential for improvement. The preparation of implementing measures includes several stages, starting from a preparatory study for a product group and ending with the an implementation measure (a regulation or occasionally a voluntary agreement). The requirements for products defined in the regulation are exactly the same for all EU member states.

The Department of Jobs, Enterprise and Innovation is responsible for the implementation of the Ecodesign Directive and associated Regulations into Irish law. Regulations may specify requirements on the energy consumption and efficiency of specific products and may also address other topics such as requirements on functionality and product information. See Figure 2.

The formulation of regulations



For any queries in relation to the development or implementation of Ecodesign measures readers can contact Mark Sweeney of Enterprise Ireland at mark.sweeney@enterprise-ireland.com

is a transparent and open process. Ecodesign requirements are defined over a number of years and stakeholders may follow and comment on analysis and working documents throughout the whole process. Enterprise Ireland represents Ireland in the EU Consultation Forum where member states and stakeholders discuss proposals for new Ecodesign

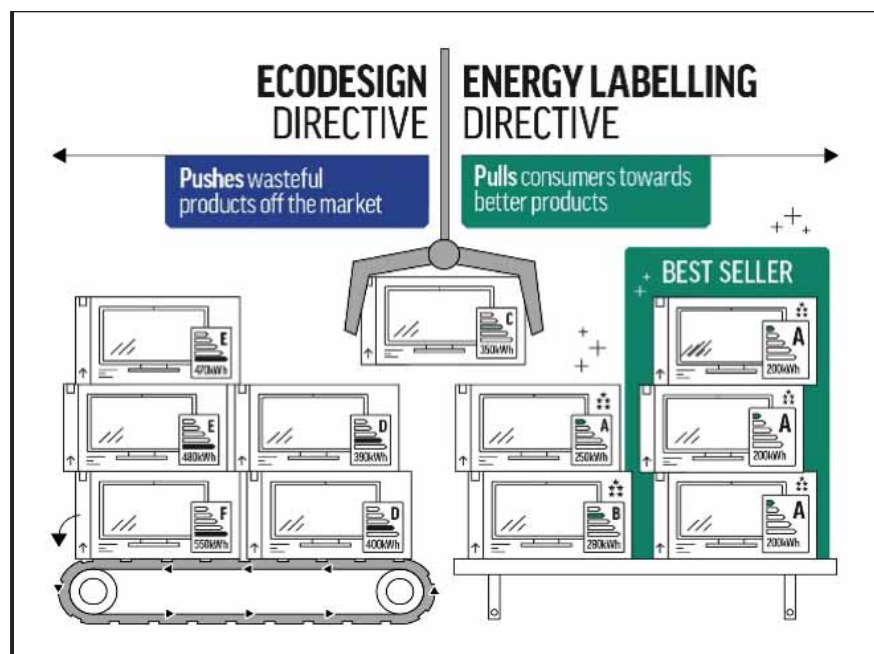


Figure 1

One choice. More options.

Solid and dependable Sirius condensing boilers are designed for maximum combustion performance and energy efficiency. With single boiler outputs from 50kW to 525kW, and offering up to 660kW in cascade, there's a Sirius boiler for virtually every application.



Sirius Two WH

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Single boiler output

50kW to 110kW

Cascade output

Up to 660kW



Sirius Two FS

Floor standing condensing boiler

Single boiler output

50kW to 110kW

Cascade output

Up to 440kW



Sirius FS

Floor standing condensing boiler

Single boiler output

400kW and 525kW



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Unit F6, Calmount Park, Calmount Road,
Ballymount, Dublin 12 Tel: 01 - 459 0870
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requirements, and on the Regulatory Committee which adopts the regulations.

Enterprise Ireland strongly encourages and indeed assists industry involvement at all stages of the regulatory process.

What is covered

As of September 2017, there are 28 regulations covering a large number of products, ranging from HVAC, ICT, lighting, household appliances, motors, pumps and fans to large distribution transformers. Several new regulations are also under development. Existing regulations contain review clauses that ensure detailed reviews of regulations with stakeholder involvement. This allows for deficiencies to be addressed and for improvements to be incorporated in updated regulations.

Heating related regulations

Regulations have entered into force for several categories of heating appliances. These regulations have staged requirements which recognise improvements in technology over time. At each stage the lowest-performing products will effectively be dropped from the market, driving investment into R&D for more efficient, better-performing products.

For example, Commission Regulation N° 813/2013 refers to space heaters that provide heat to a building's water-based central heating systems, up to a heat output of 400kW. The regulation also applies to combination heaters which provide domestic hot water, in addition to space heating.

The regulation covers both gas and oil boilers, as well as electric boilers, heat pumps and cogeneration (CHP, combined heat and power) boilers. It also applies to "packages" ... for example, space heater + supplementary space heater + solar thermal device + temperature control).

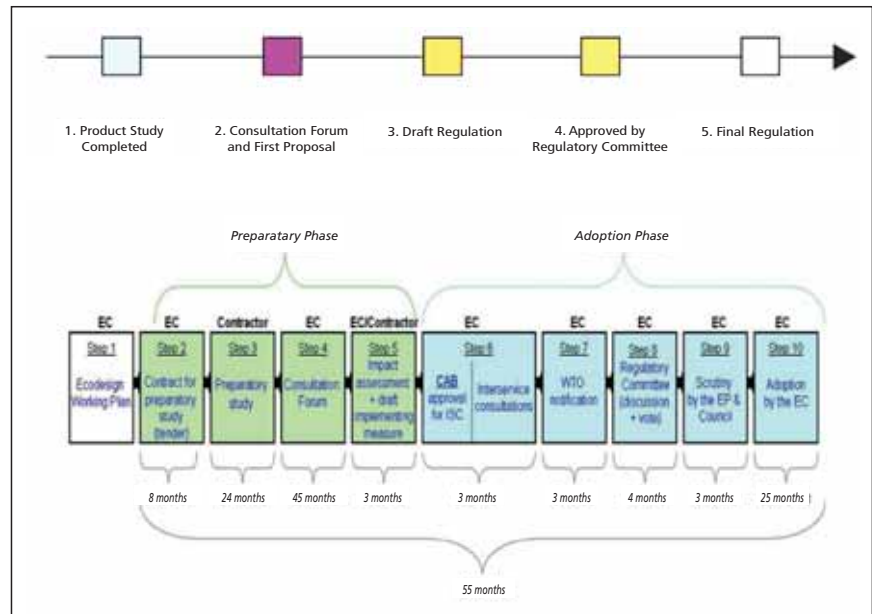


Figure 2

For gas and oil boilers, this regulation includes the following requirements:

- Minimum seasonal space heating energy efficiency for boilers and combination boilers up to 70kW;
- Minimum space heating energy efficiencies at 100 % and 30% of the declared heat output, for boilers and combination boilers between 7kW and 400kW;
- A minimum water heating energy efficiency for combination boilers according to the declared load-profile;
- Maximum nitrogen oxide emissions (Sep 2018).

In practice, Regulation N° 813/2013 effectively phases out non-condensing gas and oil boilers. The regulation also lists which data must be published in a product's technical documentation.

In addition, the regulation defines the way to assess a product's energy efficiency and nitrogen oxide emissions. All these measurement and calculation details have been, or will be, included in relevant European standards.

The Ecodesign Directive requires that manufacturers keep and make available EC declarations of conformity, and affix CE markings.

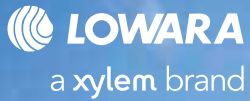
CE marking on a product implies that it conforms with the Directive. For gas and oil boilers, the implementing Regulation N° 813/2013 defines rules for the conformity assessment: space heating energy efficiency assessments have to rely on an examination by a third party (notified body); water heating energy efficiency and nitrogen oxide emissions can depend on manufacturer decisions concerning either internal design control or management systems, as described in the annexes to the Directive.

Regulation N° 813/2013 also describes the verification procedure for market surveillance by member states.

Energy Labelling Directive for gas and oil boilers, and heat pumps

The Energy Labelling Directive 2010/30/EU imposes mandatory labelling and information requirements that indicate the consumption of energy and other resources by energy-related products.

A Commission Delegated Regulation supplementing Directive 2010/30/EC has been published for space heaters up to 70kW (Commission Regulation N°811/2013). The Regulation



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defines energy efficiency classes, the contents of the label, and the product information that should to be made available to consumers.

Note that space heaters between 70kW and 400kW must fulfil Ecodesign requirements though they are not covered by the energy labelling regulation. For gas and oil boilers, the label must include the following information:

- The supplier's name or trademark;
- The appliance name (supplier's model identifier);
- The rated output;
- The seasonal space heating energy efficiency class (from G to A++);
- For combination boilers, the water heating energy efficiency class (from G to A);
- The sound power level;
- For combination boilers able to work only during off-peak hours, a pictogram showing this.

The Energy Labelling Directive requires that suppliers produce technical documentation which is sufficient to assess the accuracy of the information contained in the label. The supplementing Regulation N°811/2013 describes the verification procedures for market surveillance purposes.

Solid fuel boilers

Ecodesign requirements for solid fuel boilers with a rated heat output of 500kW or less will be mandatory from 2020 onwards for all manufacturers and suppliers wishing to sell their products in the EU. These requirements are also applicable to boilers that are part of packages consisting of a solid fuel boiler, supplementary heaters, temperature controls and solar devices. The requirements cover energy efficiency requirements, as well as emission limit values for OGC, CO, NOx and PM.

Energy labelling will only apply to solid fuel boilers with a rated heat output of 70Kw or less. Energy

Effective cross-border cooperation between market surveillance authorities in different EU countries is essential to ensure efficient, comprehensive, and consistent market surveillance.

labelling rules also apply to packages that include a combination of a solid fuel boiler, supplementary heaters, temperature controls and solar devices.

Solid fuel local space heaters

Regulations cover solid fuel local space heaters with a nominal heat output of 50kW or less. Ecodesign requirements impose energy efficiency limits, as well as ambitious emission limit values for OGC, CO, NOx and PM for preferred fuels.

Responsibilities

Manufacturers must ensure that energy-related products covered by implementing measures are placed on the market and/or put into service only if they comply with these measures, and bear the CE marking. This CE-mark will be backed up by a signed EC Declaration of Conformity document.

Ecodesign and energy labelling regulations are complemented by harmonised European standards. These technical specifications indicate that a product complies with the mandatory requirements and only then can the manufacturer affix the CE marking and sell it in the EU. If the manufacturer is not established within the Community and, in the absence of a representative, the obligation to ensure compliance with the Directive lies with the importer.

Products placed on the market before a measure enters into force can continue to be sold until existing stock is exhausted.

Market surveillance

Robust market surveillance structures are essential to enable the verification of the compliance of products

covered by the Ecodesign and Energy Labelling Directives. National market surveillance authorities verify whether products sold in the EU follow the requirements laid out in regulations and help maintain fair competition in the marketplace. In Ireland DCCAE and SEAI are responsible for the establishment and implementation of the national market surveillance programme. Effective cross-border cooperation between market surveillance authorities in different EU countries is also essential to ensure efficient, comprehensive, and consistent market surveillance. The SEAI market surveillance team has already taken effective action on non-compliant domestic circulators and is now looking to other market segments to investigate.

Driving innovation

While some parties view Ecodesign and energy labelling as yet another administrative challenge to be addressed, the reality is that it drives product innovation. This in turn ensures that more efficient products are placed on the market, thereby creating sales opportunities for manufacturers.

Enterprise Ireland works with many stakeholders at all stages of the regulatory process. Regulations often take a number of years to formulate so it is important for manufacturers to be aware of regulations under development that affect their products, and if possible to engage in and influence the process. It is also important that manufacturers and distributors keep up to date with their legal responsibilities under any implemented regulations. ■

No space? No problem Size matters ...



New condensing boilers ADI CD up to 905 kW in 1 m²

Power from 70 kW a 1800 kW

Stainless steel heat exchanger

Modulating burner (from 30%)

High seasonal performance, up to 108%

Ecological combustion NOx class 5



Minimum power consumption from 17 W

Minimum sound level

ADI-M modular, approved as a single boiler

Wide range of hydraulic accessories

Control flexibility: integral or external



Eurofluid

HANDLING SYSTEMS

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PROJECT PROFILE

BAXI POTTERTON MYSON WARMS CARE HOME RESIDENTS

St Monica's Nursing Home in Dublin was suffering from sky high energy bills, and so it invited the Baxi Potterton Myson team to recommend a suitable replacement for its ageing heating system. Paul Clancy, Managing Director at Baxi Potterton Myson, explains.

St Monica's Nursing Home was running off two 300kW brick-lined Britannia boilers that had been converted to gas. Remarkably, both were close to 100 years old. There were also two 1,000lt, poorly-insulated copper hot water calorifiers that were showing signs of wear and corrosion. In fact, the estimated efficiency of the boilers was less than 50%.

Declan Mulholland, Head of Maintenance at St Monica's, met with Richard Louth, Commercial Sales Specification Manager at Baxi Potterton Myson, and contractor Frank Daly of Glenergy. They discussed the concept of installing CHP as part of the new heating system to help reduce the nursing home's energy bills even further.

Once funding had been secured for the project, the Glenergy team removed the old boilers. In the footprint of one of them, four Potterton Commercial Sirius Two WH110 boilers on a cascade frame were installed. The space vacated by the second old boiler was room enough for a SenerTec Dachs CHP and 900lt buffer tank. The old calorifiers were replaced with two 500L quick recovery 1,000lt commercial



The SenerTec Dachs CHP.

Megaфло hot water cylinders from Heatrae Sadia.

In addition to the equipment supplied, Glenergy rewired the entire boiler room, including a new supply from the main incomer distribution board and a new control panel that was purpose-built for the project.

"The project went exceptionally well," said Declan. "It was a difficult installation, as large equipment and pipework had to be removed from a

'below-ground-level' boilerhouse with difficult access. The downtime was hardly noticeable, mainly due to the Sirius modular cascade frame that was recommended. It was easily positioned and allowed de-commissioning of the old boilers with little disruption to heating throughout the building while other work was carried out.

"The SenerTec CHP is the heart of the system, working to 97% and providing a major contribution to our electricity usage. The four Sirius Two WH110 boilers kick in quietly when required, and the two Megaфло cylinders ensure we always have plenty of hot water. The whole plant works seamlessly. We estimate the system will have paid for itself in three to four years. I would highly recommend this installation to any nursing home thinking of upgrading – it's a no brainer!"

This was a major project in a sensitive environment and it was important to ensure constant heating and hot water delivery. Frank Daly of Glenergy, Baxi Potterton Myson's SenerTec Partner in Ireland, kept Declan informed of progress at all times.

Declan added: "I even got progress calls over the weekend as the team worked tirelessly to complete this project on time. I was very happy with the level of guidance and support that I got from Glenergy and Baxi Potterton Myson. Commissioning was carried out by Damian Delaney, Baxi Potterton Myson's Technical Support Manager. Everyone was



Above: The four commercial Sirius Two WH110 boilers on a cascade frame. Right: St Monica's Nursing Home.

totally professional, from our initial meeting and right throughout the whole project."

Richard Louth of Baxi Potterton Myson said: "This was an important project for us. Declan put his trust in our recommendation. It started as a burner changeover and developed from there. It was also our first time working with our SenerTec partner, Frank Daly of Glenergy. No outside parties were involved, everything was in-house. The synergy between both companies works very well, and we now have more projects in the pipeline."

The SenerTec Dachs CHP is designed for larger residential buildings or commercial premises. It uses an internal combustion engine that can be fuelled by either natural gas or LPG to produce heat and generate up to 5.5kWh of electricity, which can be used in the building.

The Potterton Commercial Sirius Two WH is currently available in outputs of 50kW, 60kW, 70kW, 90kW and 110kW. It has a 9:1 modulation ratio making it extremely energy efficient, saving money and reducing carbon.

Megaflo commercial cylinders from Heatrae Sadia are designed to meet all current safety, performance and quality legislation. They are available as direct, indirect and solar models, and from 400 litres up to a massive 2,500 litres.

For more information on Baxi Potterton Myson visit: www.baxipottertonmyson.ie and on Glenergy visit: www.glenergy.ie ■



Right: The Heatrae Sadia Megaflo commercial cylinders.



Commercial heating and hot water solutions from Heat Merchants

Heat Merchants provides an extended commercial product portfolio that includes boilers, water heating and storage, combined heat and power technology, systematic mechanical ventilation, heat interface units, heat emitters and controls. This is accompanied by comprehensive technical design and support services to meet the needs of the light commercial mechanical services contractor.

Commercial services

Heat Merchants has a dedicated commercial team that offers a single point of contact for all commercial queries, from technical design, specification and sizing to pricing and warranty queries. Its combined knowledge and expertise across multiple sectors covers healthcare, education, retail, foodservice, hospitality and leisure. It can also specify heating and hot water solutions for multi-residential and large domestic projects.

The Technical Services Team has full professional indemnity insurance and can provide a complete design for heating,

plumbing and mechanical ventilation for both new-build or retrofit commercial projects. Systems are custom designed to ensure a high level of comfort and energy efficiency with solutions for any project or budget. The technical team also offers expertise and support in sizing and specifying for commercial projects, including gas line sizing, ventilation, flue sizing, safety valve sizing and expansion valve sizing. This ensures that all systems designed by Heat Merchants comply with all applicable building regulations and legislation.

Pat Smith, Technical Services Engineer,

Heat Merchants, oversees product commissioning and after sales service across the commercial product range. This includes warranty queries, technical advice, trouble shooting and managing service calls through an established network of service engineers across the country.

Services and benefits

- Sizing and specification
- Estimation
- Commissioning
- Ancillary certification
- After sales services
- Warranty queries
- Professional indemnity insurance

Commercial product range

Heat Merchants offers a broad range of commercial products from renowned brands including Potterton, Bosch, Firebird, Vokera, Andrews Water Heaters, Heatrae Sadia and Pichler Luft. These include:

- Commercial gas and oil boilers
- Commercial water heating and storage
- Combined heat and power (CHP)
- Mechanical ventilation
- Heat interface units
- Commercial heat emitters and controls

Branch network

Heat Merchants has 31 branches nationwide, supported by a central warehouse and established distribution network to ensure all products and spare parts are available for collection, or delivery to site, exactly when needed. Stock can be reserved and held in branches, reducing risk of damage or loss by having it on site too soon. This offers reassurance that the stock will be there when required. The branch network also provides fast and convenient access to essential spare parts and ancillary products.

Commercial enquiries:

Jason O'Flynn, BDM,
Commercial Boilers and Water Heaters.
Tel: 086 – 821 0948;
email: jason.oflynn@heatmerchants.ie;
Commercial@heatmerchants.ie.
Tel: 090 –642 4000;
www.heatmerchant.ie ■



Heat Merchants Commercial Sales & Design Team – John O'Brien with Charles Monahan, Jason O'Flynn, Conor McDonnell, Bernice Sheerin, Sean Harty, Tom McNally and James Dempsey.

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CREATING A QUALITY ENVIRONMENT



Leading the way in heating technology





Creating quality environments

C&F Quadrant is a member of the Linders of Smithfield Group of companies and is a major supplier of internationally-renowned heating and plumbing brands catering for the domestic and commercial markets. It also has an extensive portfolio of leading white goods brands that are supplied to the retail and kitchen trade. With offices and warehousing in Dublin and Belfast, plus a network of regional representatives and merchant trading partners, comprehensive all-Ireland coverage is assured.

It has a long-established pedigree ... C&F Quadrant dates back 40 years while the Linders Group celebrates 80 years in business in 2018. This history of success and experience runs to the core of C&F Quadrant and is reflected in the long-service record of its team of highly-qualified, engineering-led, personnel. This is evident across all facets of the business, from the trade counter personnel through to technical support, field sales engineers and back-up administration. It is also reflected in the longevity of relationships with its broad customer base that delivers multiple routes to market.

Moreover, this long-service feature is mirrored in the long-standing trading partnerships it enjoys with many of its suppliers, some of which date back 20, 30 and even 40 years.

C&F Quadrant ... come partner us in creating quality environments.

Emmet Duffy,
Managing Director



Training and CPD delivery

C&F Quadrant delivers an extensive programme of courses and CPD seminars on both commercial and domestic heating products at its purpose-designed Training Centre in Dublin.

In addition, it has permanent display centres at various stockists around the country and these facilitate more focused training to suit local requirements. This type of tailored course can also be presented to a company on its own premises.



Market-leading brands

C&F Quadrant's portfolio is made up of internationally-renowned, market-leading brands with a reputation for quality products and system solutions. All feature innovative technologies and pioneering concepts that not only serve, but also anticipate market requirements. This is evident through illustrious recent projects like the Titanic Hotel in Belfast and Trinity College, Dublin. Many of the brands represented are listed on the SEAI Triple E Product Register and qualify for the Accelerated Capital Allowance Scheme.



Domestic Heating – Tony Macken, Dublin with Colm Barrett, Connacht and Fintan Kennedy, Munster.

www.cfquadrant.ie

<https://arrow.tudublin.ie/bsn/vol56/iss5/1>

With offices and warehousing in Dublin and Belfast, plus a network of regional representatives and merchant trading partners, comprehensive all-Ireland coverage is assured



Commercial Heating – Donal Hartnett with Derek Duff and Michael Hemenstall.

Trade Counter and Showrooms

C&F Quadrant’s trade counter is a hive of activity with a constant stream of contractors passing through each day. The unique configuration of the carefully-planned trade counter and adjoining showroom means that many of the products being sourced can be viewed *in-situ*.

Another key strength is the engineering knowledge and experience of the trade counter personnel. Contractors very often come in search of advice and guidance on a project. This can range from problem-solving right through to product selection, application suitability and even regulation compliance.

Right: Dermot Keating with Noel Bollard and JP Barrett.



Glow-worm Club Energy App

Available to RGII installers, the Glow-worm Club Energy app gives installers instant access to:

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- An easy-to-use quote tool
- Training registration
- Free business development tools
- Service reminders
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- Brochures



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Having the right product is one thing ... getting it to the customer – precisely when and where required – is quite another matter. C&F Quadrant leaves nothing to chance and has its own fleet of delivery vehicles that cater for same day delivery throughout all of Dublin and next day countrywide”.

Creating Quality Environments



excellence
in hot water

Glow•worm  Vailant

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CIBSE Ireland's 'Florida Scramble' Fun

The CIBSE annual golf outing took place recently at Castlewarden Golf Club with 26 teams teeing off at 12 noon for the shot gun start. The four-ball Florida Scramble format is immensely popular as this event is as much about networking and socialising as it is about the golf. That said, the competition is fierce with much ribbing and jousting in the bid to emerge overall winners.

This year's primary gold sponsor was Heat Merchants, with Wilo (longest drive) and Mitsubishi Electric (nearest the pin) the two silver sponsors, and a broad cross-section of the industry sponsoring each of the individual tee boxes.

The decision to have a holiday voucher to the value of €1000 for the hole-in-one competition made for great excitement as each of the 104 golfers on the day knew that one of them was going to go home very much in the holiday mood. As it happened, Brian Harrison was the lucky winner and Alan Hogan of Heat Merchants was on hand to make the presentation.

Indeed, an additional benefit of the Florida Scramble format is that virtually everyone stays on for the meal and presentation of prizes so the atmosphere is electric right up to the departure of everyone at approximately 7pm.

Apart of their generous overall sponsorship, Heat Merchant' prize selection was also excellent and went down very well with all the winners.

Given the beautiful weather and near-perfect condition of the course, scoring was high with Winthrop Engineering emerging triumphant to claim first prize and



Longest Drive – Derek Elton, sponsor Wilo with Declan Sherlock and Adam Dent, CIBSE Ireland.



Overall winners – Alan Hogan, Heat Merchants with Team Winthrop Engineering members Michael Murray, Donal Clavin, Barry Hennesy, Darren Kavanagh and Adam Dent, CIBSE Ireland.



Second place – Alan Hogan, Heat Merchants with Team Air Movement members Ray Perry, Declan Sherlock, Tony Ptohopoulos, Joe Kenny and Adam Dent, CIBSE Ireland.



Third place – Alan Hogan, Heat Merchants with Team Unitherm members Finbarr Keenaghan, Christopher McClelland, Niall O’Dwyer and Adam Dent, CIBSE Ireland.



Declan Kissane, Unitherm with Alan Hogan, Heat Merchants, Adam Dent, CIBSE Ireland and Kerrigan Mechanical, and Pat Lehane, CIBSE Ireland and *Building Services News*.



Nearest the Pin – Ciaran Moody, sponsor, Mitsubishi Electric with Mark Fallon and Adam Dent, CIBSE Ireland.



the much-coveted PJ Doyle Perpetual Trophy. Second was the Air Movement team with Unitherm coming in third.

Longest drive was won by Declan Sherlock of the Air Movement team while Mark Fallon of the Heat Merchants A team won nearest the pin.

All credit to the CIBSE Ireland team on the day for making it such a special occasion, and particularly Declan Kissane who handled the registration and scoring, and then acted as MC for the evening.

Adam Dent of the CIBSE Ireland Committee made the presentations as Chairman Paul Martin, who was present for most of the day, unfortunately could not attend the ceremony.

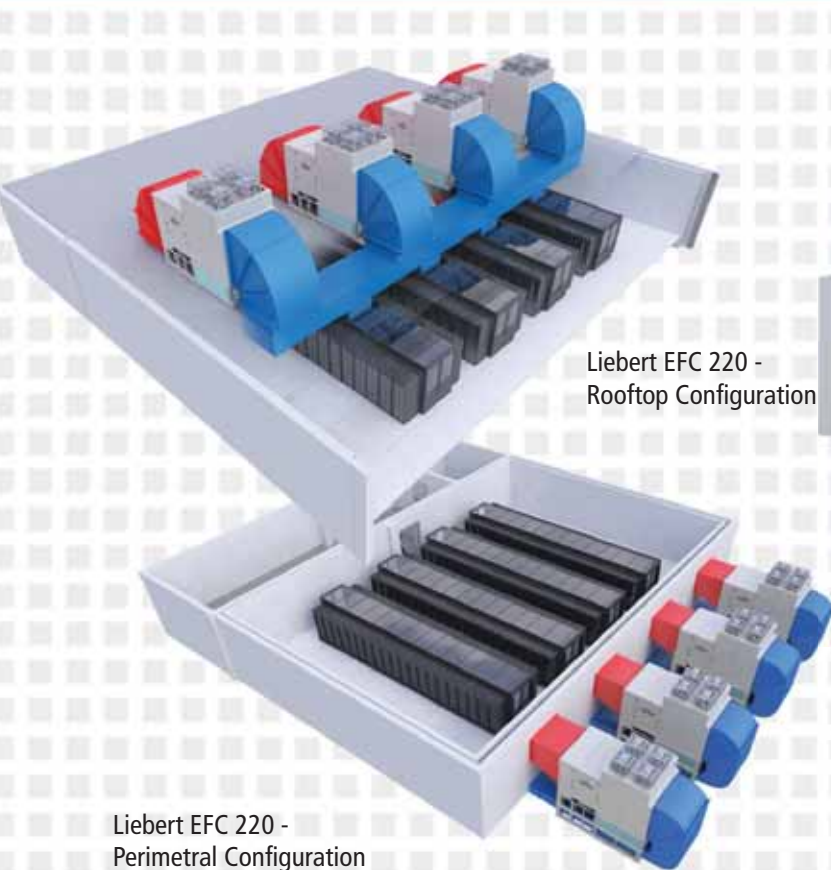


Hole-in-one raffle winner – Alan Hogan, Heat Merchants with Brian Harrison, Grundfos.



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Technical Guidance Document Part L 2017 and nZEB Compliance



The significance of *Technical Guidance Document (TGD) Part L 2017 for Non-Domestic Buildings* and the requirements surrounding nZEB (Nearly Zero Energy Buildings) cannot be overstated. Here Ciarán McCabe, Senior Sustainability Engineer at METEC Consulting Engineers (right), discusses the proposed enactment of the new document and provides a road map to its interpretation.

The current Building Regulations that specifically deal with the conservation of fuel and energy consumed by new and existing non-domestic buildings was originally published in 2008 and, by today's standards, does not reflect best industry practice. The Sustainability Team at METEC have been working to building performance standards which are a considerable improvement on the current 2008 TGD Part L of the Building Regulations for some time now and we welcomed the introduction of TGD 2017 for public consultation earlier this year. TGD Part L 2017 will apply to works that commence on or after 1 January 2019 and represents an improvement in the order of 50% to 60% over and above the 2008 Part L edition.

What's new in TGD Part L 2017?

The proposed TGD contains the following new requirements:

- Revised methodology is now outlined to assess the risk of solar overheating in all non-domestic buildings, irrespective of whether they are air-conditioned or not;
- All new non-domestic buildings must be pressure

<https://arrow.tudublin.ie/bsn/vol56/iss5/1>

Parameter	Current reference values-TGD L 2008	Proposed reference values-TGD L 2017
Total Floor Area and Building Volume	Same as actual building	Same as actual building
Opening Areas	Offices and Shops –windows and pedestrian doors are 40% of the total area of exposed walls	Offices and Shops –windows and pedestrian doors are 40% of the total area of exposed walls
Walls	$U=0.27 \text{ W/m}^2 \cdot \text{K}$	$U=0.18 \text{ W/m}^2 \cdot \text{K}$
Roofs	$U=0.16 \text{ W/m}^2 \cdot \text{K}$	$U=0.15 \text{ W/m}^2 \cdot \text{K}$
Floor	$U=0.25 \text{ W/m}^2 \cdot \text{K}$	$U=0.15 \text{ W/m}^2 \cdot \text{K}$
Thermal bridging	Add 16% to fabric heat loss	Actual Length of Key Junctions x Advanced psi value
Air Permeability	$10 \text{ m}^3/(\text{hr} \cdot \text{m}^2)$	$5 \text{ m}^3/(\text{hr} \cdot \text{m}^2)$ Floor area <250m ² $3 \text{ m}^3/(\text{hr} \cdot \text{m}^2)$ Floor area >250m ²
Window U Value Solar energy transmittance	$2.2 \text{ W/m}^2 \cdot \text{K}$ 0.72	$1.4 \text{ W/m}^2 \cdot \text{K}$ 0.40

Table 1 – Building fabric parameters



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- Compact "Plug and Play" units
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Contact
Brian Mulhare,
Lindab AHU Product Manager
Tel: 01 – 456 8200
Mobile: 087 – 401 3021
Email: brian.mulhare@lindab.com

www.lindab.com/ie

Parameter	Current reference values-TGD L 2008	Proposed reference values-TGD L 2017
Heating efficiency (heating and hot water) %	0.73 CoP	91% Gas Boiler
Cooling Seasonal Energy Efficiency Air-conditioned building Ratio (SEER)	SEER=1.67	SEER=4.5
Lighting	divide the illuminance by 100, then multiply by 3.75 W/m ² per 100 lux	65 lumens / circuit watt
Occupancy Control	Local Manual Switching	Automated
Daylight Control	Local Manual Switching	Automated
Central Ventilation SFP	2 (W/(l/s))	1.8 (W/(l/s))
Variable speed control of fans	No	Yes
Renewable Energy Ratio	None	20% Renewable Energy Ratio

Table 2 – Mechanical and electrical parameters

tested and achieve the backstop value of 5 m³/hr/m² as a minimum;

- New minimum efficiency values and controls package requirements for heating, ventilation and comfort cooling systems;
- New efficiency targets for artificial lighting systems;
- Mandatory renewable energy targets have been introduced;
- The energy performance of “major renovation” projects will now be required to meet defined cost optimal levels in so far as this is technically, functionally and economically feasible (Table 5).

Another feature of the new proposed TGD Part L 2017 is to achieve Nearly Zero Energy Buildings (nZEB) which has come about as a result of Article 9 of the EU Energy Performance of Buildings Directive Recast. Nearly Zero Energy Buildings refers to a building that has a very high energy performance, as determined in accordance with

Annex 1 of the EPBD Directive 2010/31/EU. The nearly zero or very low amount of energy required should be covered to a very significant extent by energy from renewable sources (renewable sources maybe produced on-site or nearby).

What are the key dates in relation to nZEB?

1 January 2019 – New buildings which are owned and occupied by Public Authorities must comply with the nZEB standard. Public Authorities which lease privately owned buildings are not subject to this first phase of implementation.

31 December 2020 – All new buildings must comply with the nZEB standard. The final Part L 2017 TGD is due to be published later this year. However, in the meantime an interim nZEB specification for public sector buildings has already been published to provide guidance for architects and consulting engineers.

Limitation of primary energy use and CO₂ emissions

Using an approved building compliance software tool, the actual building geometry, building envelope performance and the mechanical and electrical system efficiencies are modelled for new non-domestic buildings. As part of this calculation process a “Reference Building” is notionally developed which has the same size, i.e., same floor area and volume and with the same area of opaque fabric elements (wall, roof and floor area) as the building being assessed. The performance of this “Reference Building” represents the improvement factor in the order of 50% to 60% across all buildings when compared with the 2008 regulations. The primary energy consumption and CO₂ emissions per unit floor area, calculated for this “Reference Building”, is used to calculate the primary Energy Performance Coefficient (EPC) and Carbon Performance Coefficient (CPC) respectively for the building being assessed (actual building). These in turn are compared to the MPEPC and MPCPC in order to demonstrate compliance for the building being assessed (i.e. the actual building). The MPEPC and MPCPC to be achieved should be 1 and 1.15 respectively (Table 3).

Limitation of Primary Energy Use and CO₂ Emissions

Maximum Permitted Energy Performance Coefficient (MPEPC)	1.0
Maximum Permitted Carbon Performance Coefficient (MPCPC)	1.15

Table 3

Performance requirements to achieve compliance and comparison with the Current TGD 2008 Part L

While backstop values are included within TGD Part L 2017, to achieve overall compliance it will be necessary to use further improved building performance specification.

Tables 1 and 2 compare the current 2008 reference values to the proposed improved values that will be required in order to achieve compliance under the new TGD Part L 2017 standard.

New renewable energy requirements

Unlike the previous TGD Part L edition, under the proposed regulations a minimum level of renewable energy (Renewable Energy Ratio) must be provided in order to demonstrate regulation compliance. The Renewable Energy Ratio (RER) is the ratio of the primary energy from renewable energy sources to total primary energy as defined and calculated when using the Non-Domestic Energy Assessment Procedure.

As demonstrated in Table 4, the renewable energy ratio required will be dependent on overall building performance as calculated in the approved software.

Qualifying renewable technologies include solar energy (thermal and photovoltaic), wind, hydropower, biomass, aerothermal, geothermal, wave, tidal, landfill gas, sewage treatment plant gas and biogases.

Mandatory Renewable Energy Requirements	Renewable Energy Ratio
Where the MPEPC of 1.0 and MPCPC of 1.15 is achieved	0.2 (20%)
Where the MPEPC of 0.9 and MPCPC of 1.04 is achieved i.e. the energy performance of the building is reduced by 10% below the maximum permitted values	0.1 (10%)
As an alternative to providing a 0.2 RER (Renewable Energy Ratio) the use of a CHP system which contributes to the space and water heating would also be acceptable.	CHP Energy Savings = RER of 0.2

Table 4

Major renovations

Under the proposed TGD Part L 2017, when buildings undergo major renovation, the minimum energy performance requirement of the building or the renovated part thereof must be upgraded in order to meet the cost optimal level of energy performance in so far as this is technically, functionally and economically feasible.

The following improvements are considered to be cost optimal and will typically be economically feasible when more than 25% of the surface area of a building is being upgraded:

- Upgrading heating systems more than 15 years old;
- Upgrading cooling and ventilation systems more than 15 years old;
- Upgrading general lighting systems that have an average lamp efficacy of less than 40 lamp-lumens per circuit-watt and that serves greater than 100m².

As an alternative compliance path to the previous three

measures, a major renovation project could achieve cost optimal energy performance levels by meeting the whole building energy targets as specified in Table 5. As a guide, the energy targets shown in Table 6 are projected in order to achieve nZEB compliance across the range of non-domestic building types. The Building Energy Ratings required range from B1 to A2 (Table 6).

Whole Building Cost Optimal Level	
Building Type	Major Renovation Cost Optimal Performance (kWh/m ² / yr)
Retail (Air Conditioned)	338
Office (Naturally Ventilated)	124
Office (Air Conditioned)	180
Hotel (Air Conditioned)	342
Schools	60
Other Air-Conditioned Buildings	338
Other Naturally Ventilated Buildings	124

Table 5

Proposed Energy & Carbon Dioxide Emissions Performance for nZEB Compliant Non- Domestic Buildings				
Building Type	Primary Energy kWh/yr/m ²	CO ₂ emissions Kg/yr/m ²	Building Energy Rating	
			Indicator	BER
Office NV 2F: LMF	62.8	12.6	0.3	A2
Office AC 2F: LMF	100.1	20.7	0.5	A3
Office NV 4F: MC	60.1	12.1	0.3	A2
Office AC 4F: MC -	98.6	20.5	0.5	A3
Office NV 4F: LMF	60.1	12.1	0.3	A2
Office AC 4F: LMF	98.6	20.5	0.5	A3
Hotel AC MC	348.1	65.3	0.5	B1
Retail AC LMF	178.3	38.2	0.4	A3
Mixed Use LMF	89.3	18.2	0.3	A2
School Prim. MC	57.6	11.2	0.4	A3

MC – Masonry Cavity Wall NV – Naturally Ventilated
 LMF – Light Metal Frame AC – Air Conditioned
 2F – 2 Floors 4F – 4 Floors

Table 6. (Source – Calculations for Building Regulations Part L 2017 TGD: Buildings other than Dwellings report compiled for Dept. of Housing Community Planning and Local Government and Sustainable Energy Authority of Ireland – April 2017).

S&P Ireland Ventilation Systems Ltd



5
Year
Warranty



Lifetime
Range®



'E' rating only applicable to MEVS
(2 speed option)

MEV SPIDER

Central Extract Ventilation
with Humidity Tracking



Features/Benefits

- ✓ Fitted with Ultra Low Watt EC motor technology
- ✓ Intelligent humidity tracking
- ✓ 9 spigot connection points
- ✓ 3 Ø100mm spigots supplied
- ✓ Rapid installation
- ✓ Vertical or horizontal install
- ✓ Ease of maintenance
- ✓ Unobtrusive
- ✓ Low noise
- ✓ Cost effective
- ✓ Lowest carbon footprint
- ✓ SAP Appendix Q eligible

About the MEV Spider

The new MEV Spider from EnviroVent is a low energy, continuous mechanical extract ventilation system designed with multiple extract points to simultaneously draw moisture-laden air out of the wet rooms, whilst minimising the migration of humidity to other rooms.

How does MEV work?

The extract unit is centrally located in a cupboard or loft, with ducts running from the unit to the kitchen, bathroom, ensuite and other wet zones. Ideal for use in houses, apartments and communal residences, the unit provides high centrifugal performance with low running noise. The MEV Spider is SAP Appendix Q eligible and comes with a full five year guarantee.

Flexible Installation

Horizontal
ON THE FLOOR

Vertical
ON THE WALL



Horizontal
ON THE CEILING



Rapid Installation

The compact size of the unit and its unique spigot configuration allows easy installation into any vertical or horizontal application and is ideal for restricted spaces. With up to nine spigot connection points the unit offers optimal versatility.

The easy push button commissioning pad enables the installer to correctly set the required airflow rate quickly and effectively.



Intelligent Humidity Tracking

The system continuously operates at a low level to ensure that the home is correctly ventilated, providing all year round good indoor air quality. Incorporated within the MEV Spider is the intelligent humidity tracking controls as standard, which constantly monitor the humidity level, meaning no user intervention is required. As humidity rises and falls, the motor speed rises and falls in direct correlation. This controls condensation quietly and efficiently, reducing the periods of time when the system operates on maximum speed, saving energy.



Control Options

The MEV Spider is supplied with a remote controlled boost switch as standard offering ultimate control to the user. The unit is fully commissionable to high and low rates to ensure optimum performance and efficiency.

A hibernation sensor is available as an additional control option. This works by the system continuously monitoring the activity within the home/building and when it notices a lack of activity over a set time it switches to hibernation mode to save energy.



Central extract ancillaries also available

Humidity Wall Grilles

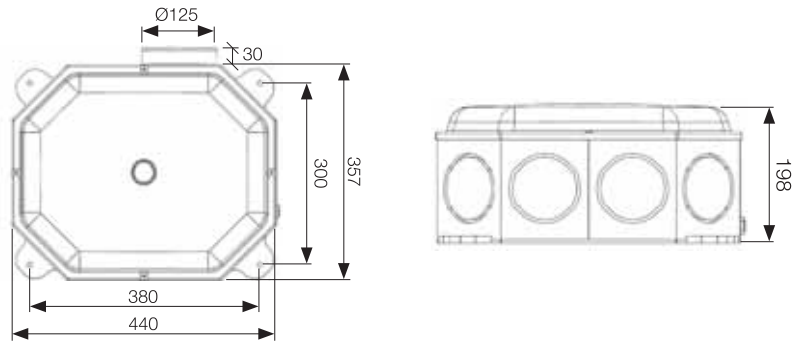


Humidity Ceiling Grilles

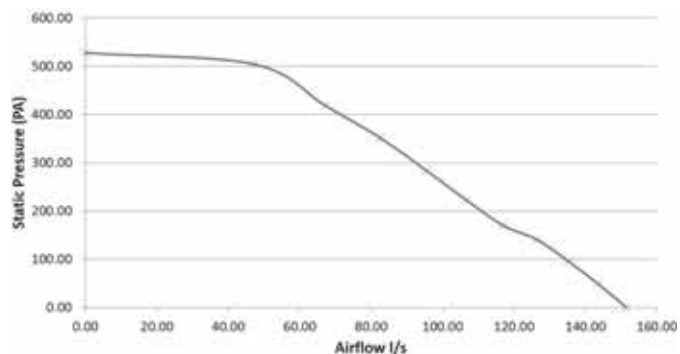


SAP Appendix Q Performance						
Exhaust Terminal Configuration	Kitchen + 1 additional wet room	Kitchen + 2 additional wet rooms	Kitchen + 3 additional wet rooms	Kitchen + 4 additional wet rooms	Kitchen + 5 additional wet rooms	Kitchen + 6 additional wet rooms
Specific Fan Power (W/l/s)	0.45	0.34	0.33	0.34	0.37	0.40
Fan Speed Setting	100% Variable	100% Variable	100% Variable	100% Variable	100% Variable	100% Variable

Dimensions



Performance Curve



Contact 01 – 4124 020 to discuss the many options available for suitable background ventilation.

For more specific information, contact:

Tel: 00 353 (01) 4124 020 www.solerpalau.ie sales.ie@solerpalau.com
Published by ARROW@TU Dublin, 2017



■ BTU GOLF NEWS



Shaun Gillen, TIDL, with overall winner Conor Lennon and Dave Daly, BTU Captain.



Shaun Gillen, TIDL with ladies winner Geraldine Hutchinson.

Ladies and gents day at Hermitage

The BTU mid-Summer outing at Hermitage Golf Club was a bit special this year. Along with the regular BTU members and guests, an invitation was extended to the wives and partners.

The lady guests played a 9-hole competition and non-playing guests joined up later for a sumptuous BBQ provided by the catering staff at the Hermitage club.

The weather also played its part and this added to the enjoyment of playing such a well-presented golf course. However, once again the speed of the greens was a hot topic.

The overall winner of the BTU section was Connor Lennon, while the ladies winner was Geraldine Hutchinson.

The event was a great success enjoyed by all in attendance, thanks in particular to the generous sponsorship of TIDL and their support on the day.

<https://arrow.tudublin.ie/bsn/vol56/iss5/1>



Shaun Gillen, TIDL with Dave Daly, BTU Captain, Geraldine Coghlan and Martin Keogh, BTU.



Shaun Gillen, TIDL with Brian Harrison and Dave Daly, BTU Captain.



INTRODUCING

Grundfos for Engineers

Imagine all the knowledge, information and tools you need to specify a highly technical pump system in one place. That's exactly what the new *Grundfos for Engineers* website gives you, while also helping you to save time on complex tasks.

The *Grundfos for Engineers* website, launched by the global pump manufacturer, addresses common, daily challenges faced by consulting engineers and system designers. For instance, a simple sizing tool allows you to enter duty points and then search for matches by application, pump design or family.

To simplify decision-making, there is also a huge range of downloadable product and application material, case stories and video insights from experts.

The site also provides access to a free, online training tool and information platform called *Grundfos Ecademy*. You can complete modules at your own pace

and they can count towards professional accreditation.

The site's dynamic format means there is always something new to see. News feeds are continually updated, while featured themes highlight a specific area of focus. These provide extensive technical knowledge and insights into applications, products and industries. "We know from conversations with engineers that time is a scarce resource and that keeping up to date within their area of expertise is key to their professional performance," says Liam McDermott, Sales Director, Grundfos Ireland. "*Grundfos for Engineers* is designed to provide quick

and easy access to relevant tools and knowledge – a site made for engineers, by engineers."

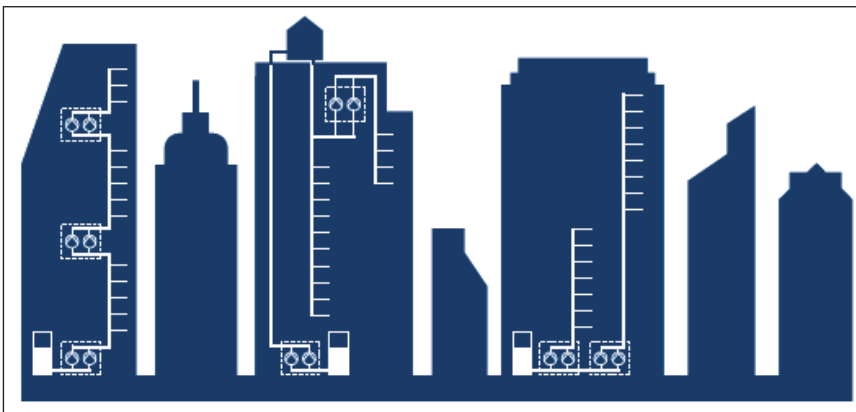
Know-how in the spotlight

One of the site's current themes is Intelligent Boosting Systems. It explores which factors you should consider when you need to deliver booster systems to tall commercial buildings. Case studies and product information show that while initial outlay is usually top-of-mind, energy consumption over the life cycle can account for as much as half the total costs.

One featured video highlights this energy focus. Application manager Jens Nørgaard explains how the ratio between the initial cost and the running cost is actually 1:20, underlining the importance of energy efficiency in the decision-making process. Furthermore, he outlines why traditional heating systems must be continually reconditioned to prevent imbalance and how intelligent products like the Grundfos Magna 3 can help avoid this. Information and answers are just a few taps away.

Grundfos for Engineers is ideal for anyone wanting to find pump systems knowledge quickly, and it delivers an opportunity for engineers to optimise specification tasks promptly.

Visit www.grundfos.com/grundfos-for-engineers.html ■



Featured theme: The site explores the pros and cons of supplying water to tall buildings via roof tanks or pressurised systems.

Published by ARROW@TU Dublin, 2017

■ LIGHTING

Building Regulations Part B and Fire Rated Downlights (Updated 31.08.17)

When is a fire-rated ceiling not a fire rated ceiling? When the installer cuts holes in the ceiling and installs non-fire-rated light fittings, writes *Mark Walshe, (right) Technical and Quality Manager, LED Group and Lighting Association Ireland Technical Committee member.*

When you consider the regular pattern of recessed luminaires that is likely to greet you when you cast your eyes up to the ceiling in many new homes, the concept of a fire barrier may lose much of its integrity. How many perforations does it take for a ceiling to lose its fire rating?

Facetiousness aside, non-fire-rated

downlights will not provide the same level of fire protection as the ceiling in the event of a fire.

Fire-stopping of any openings in a fire barrier is a serious health and safety concern, as outlined in the *Building Regulations 2017 Technical Guidance Document B – Fire Safety Volume 2 Dwelling Houses*, updated earlier this year.



The ROBUS Triumph fitting from LED Group.

<https://arrow.tudublin.ie/bsn/vol56/iss5/1>



Section 3.7 and particularly Section 3.7.5 in Volume 2 deals directly with the requirements of fires in dwelling houses.

Although you won't find downlights mentioned explicitly in the document, it is clearly spelt out that any openings in a fire barrier element must be fire-stopped to ensure that fire resistance is not impaired. This would imply that there is a requirement for recessed lighting to have integral fire protection, or for non-fire-rated recessed lighting to be installed in conjunction with a suitable fire-hood.

Technical Guidance Document B – Fire Safety Volume 1 Non-Dwelling Houses is currently under review and expected for release in 2018 so, for now, the 2006 version of *Technical Guidance Document B* remains applicable. This document again sets out the requirement for all openings in a fire barrier to be fire-stopped.

However, there is a caveat in the case of timber-frame apartment blocks. These may use a compartment floor where the ceiling is effectively a sacrificial layer and does not constitute a fire barrier.

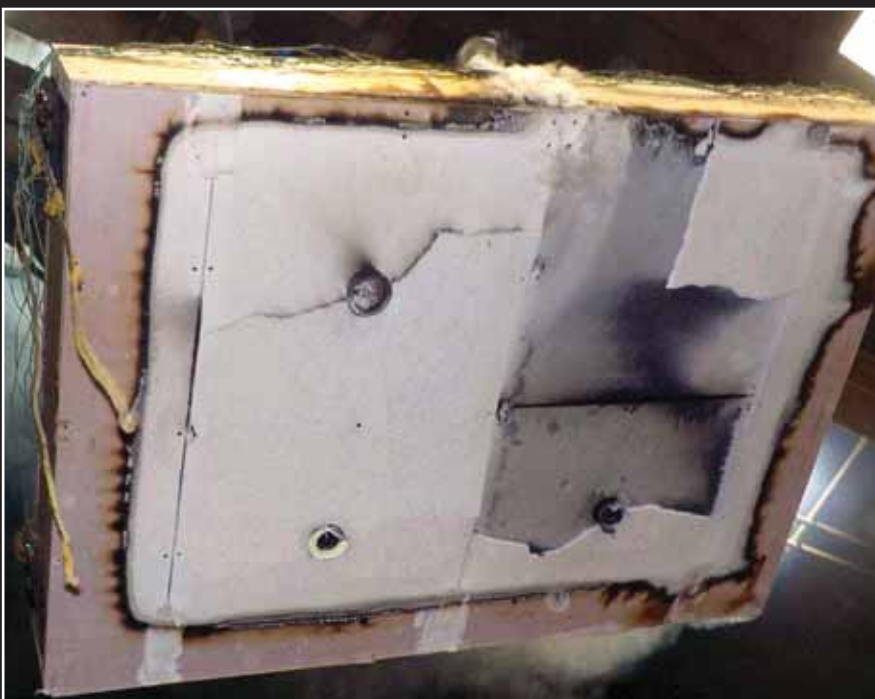
There was a time when LED fittings with integral fire protection were simply not conducive to this application due to high cost, low performance and poor reliability linked to over-heating, but that day is well and truly over. A good quality LED FRD (fire rated downlight) such



What a correct installation should look like.

as the ROBUS Triumph would be an ideal choice in this instance as it, and similar high-quality products, tick all the relevant boxes. Features of the ROBUS Triumph include:

- Rated for 30/60/90 minute fire-rated ceiling/floor constructions => fire safe;
- It is eligible for the SEAI Triple E ACA Scheme => energy and cost incentives;
- It meets the acoustic testing requirements of the Building Regulations => insulates noise;
- It meets the air tightness test requirements of the Building Regulations => minimises air leaks;
- It has a quick-fix connector and insulation spacer guard => ease of install;
- It has a 5-year warranty => reliability and peace of mind.



What happens when the installation is done incorrectly.

Fire testing of LED FRDs to the relevant standard (BS476 Part 21) is an expensive business as it involves constructing suitable ceiling box samples (complete with fittings) to be tested in a furnace at up to 1000°C for 30/60/90 minutes duration. Then there is the specialist work of analysing the test results with consideration of load bearing in order to make a judgement on the overall fire rating of the fitting. Proof of meeting these requirements should be requested as part of any fire safety certification or risk assessment.

Generally, for new builds and refurbishments with material changes, the only situations where FRDs need not be considered as essential in the case of recessed lighting installations are in bungalows or in the roof ceiling of multi-storey dwellings.

It is the responsibility of the Assigned Certifier to ensure that a building meets the requirements of the Building Control Regulations as set out in the *Building Control Act, 1990* by means of the signed Certification of Compliance on Completion. The most straightforward means to achieve this is to follow the appropriate Technical Guidance Documents, as otherwise, alternative evidence must be provided to prove that the regulations are met.

In addition, for non-dwellings the Building Control Authority must issue a Fire Safety Certificate.

All stakeholders in the installation of recessed light fittings, from installers through to building control authorities, would do well to take note of the requirements as set out in Part B in relation to installation of recessed lighting.

If your home had a hole in the roof, you wouldn't think twice about plugging it to prevent a leak. Shouldn't the same consideration be paid to the holes in our ceilings in the event of fire? ■

New focus on health and 'WELL Being' in building design

In recent years, green building design has gained traction in the Irish building market, using green building certification systems such as LEED, BREEAM or Exceed. Indeed, such certifications are now almost expected, especially for high-profile office buildings. Whereas these certification systems focus on the environmental impact of the construction, a new focus is turning towards the building occupant. With people spending an average of 90% of their time indoors, the question arises: how are buildings affecting our health and wellbeing?

Most people can correlate to scenarios where buildings or surroundings have a negative impact on our health. Why are you feeling more stressed after sitting in a meeting room with bad acoustics for several hours? Have you experienced the post-lunch coma and tried to fight against it with a large amount of coffee in the afternoon? Have you left the full-day conference in a room without access to daylight and then been blinded by the sun when leaving the building? Have you experienced back pain from sitting at your desk all day?

Then there are the not so obvious effects of the indoor environment to

your health? What is the indoor air quality that we breath for 90% of the day? What is the drinking water quality from the kitchen tap?

A large amount of research has been published to analyse these questions. This research has been transformed into a new building certification system, the WELL Building Standard, bringing the key items together.

So, what does the WELL Building Standard include and how can we, as professionals in the built environment, play a key role in enhancing the health and wellbeing of occupants? How can we contribute to tackle main lifestyle-related



Mona Holtkoetter, author of this article, graduated from Beuth Hochschule für Technik in Berlin with a degree in Building Services and Energy Technology. She joined Arup Berlin in 2010 and moved to the Arup Dublin office in 2012, working on national and international projects. Throughout the years, Mona has developed a keen interest in sustainability, especially for LEED certifications, as well as energy simulations. More recently, Mona has qualified as one of Ireland's first WELL APs and has keen interest in influencing design decisions for the wellbeing of building occupants.

health epidemics, such as stress, obesity and muscular-skeletal complaints?

The WELL Standard separates the opportunities to promote health and wellbeing in buildings into the following categories: air, water, nourishment, light, fitness, comfort and mind.

Air

We breath more than 15,000 litres of air each day but outdoor air quality is deteriorating globally due to pollution from traffic, construction, agricultural activity, combustion and particulate matter. When considering the outdoor air quality, filtration of outdoor air by air handling units becomes a critical component for the HVAC design of a building services engineer. But which of the components mentioned above is captured by the F7 filter that we usually specify? Is this sufficient or do we need to re-think?

Further important aspects of indoor air



Great innovations, such as sit-standing desks, are recommended.

<https://arrow.tudublin.ie/bsn/vol56/iss5/1>



Cleverly-presented and lit green areas help reduce stress and promote relaxation.

quality are ventilation levels, selection of combustion equipment, management of pesticides, cleaning practices to remove microbial pathogens and exposure to volatile organic compounds (VOCs) which can evoke asthma, allergies and can impact on productivity.

Water

While the objective when considering water at design stage focuses on accessibility to drinking water to promote hydration, the main emphasis should be the water quality. As building services engineers we are responsible for planning the water installation, but testing the water quality is typically not within our scope. We are purely relying on the water supplied by the city council to be the correct quality. While the Irish drinking water is tested for compliance with the EPA standards, not all contaminants dangerous for the human body are covered by these tests.

Also, any impacts on drinking water quality through pipework distribution is typically ignored. WELL requires a broad assessment of the water delivered at the site and requires the installation of adequate filtration if needed.

Nourishment

To avoid the post-lunch food coma and reduce the risk of cardiovascular diseases, diabetes and cancer, access to healthy and balanced food within a building or its surroundings is key. A healthy food offer goes hand in hand with healthy food advertising and information about ingredients, and can be advanced through the provision of gardening space. Imagine you are working late and instead of going down to the vending machine to buy a chocolate bar, you are going onto the balcony to pick an apple from the tree?

Light

The lighting codes we currently design to provide recommendations on illuminance levels to ensure sufficient light is provided for the task, to avoid eyestrains, to maintain productivity and to reduce headache. But light also influences our internal body clock that synchronises physiological function. Lighting exposure plays a key role for our sleep patterns and sleep deprivation can have a negative impact on our health and wellbeing. Do we need to go beyond code compliance to ensure our lighting design is providing a healthy environment?

Fitness

Inactivity is now one of the biggest threats to public health, directly attributable to 9.4% of all deaths worldwide. While we as building services engineers have limited influence to the design for fitness, there are great opportunities to promote fitness within the built environment. This can go from the promotion of staircases, to the provision of bicycle parking, shower and changing facilities, gym or other internal or external fitness opportunities. Or, better still, how about combining fitness and work? Great innovations, such as sit-standing desks, treadmill desks or bicycle desks are already available on the market.

Comfort

Open-plan is the office layout of choice for most companies in Ireland. While it is great for collaboration with colleagues, the provision of quiet areas to concentrate or make a phone call is important. As building services engineers, the selection of HVAC equipment has a great influence on the acoustics. Next to acoustic comfort, thermal comfort is important. While I typically sit at my desk with my jumper on, drinking a tea, my colleague next to me sits in a t-shirt and asks if we could open the windows as he feels too warm. We are a key example for different temperature preferences. Why not be innovative with our HVAC design and provide different temperature gradients within a building?

Mind

Our minds and bodies are inextricably connected and play a vital role in our health and wellbeing. Buildings can provide spaces, such as balconies or green areas to reduce stress levels and promote relaxation. Workplace policies can have a positive impact on mood, sleep and stress levels, and can positively benefit our overall health and wellbeing. The reaction to indoor plants provided in the first WELL-certified office building in the UK was employees fighting about the plant positioning – they all wanted the plants to be located close to their desks. Maybe planting is not the best strategy for stress reduction after all! ■

Data centre freecooling solution from Liebert

The new Liebert EFC indirect evaporative freecooling unit combines the capabilities of freecooling and evaporative cooling principles in one single unit. It was specifically designed to select the most appropriate operating mode based on the external environment conditions, leveraging both principles in order to deliver significant energy savings.

The use of the evaporative cooling, – using cold external air as a means of cooling – allows freecooling operation to be maximised and compressor-related cooling to be reduced to a minimum, thus optimising operating costs.

The evaporative principle uses air to absorb water that is sprayed through special nozzles onto the heat exchanger. Water evaporation thus removes heat from the air and cools the outside air temperature. Outside air consequently transitions from “dry bulb temperature” to “wet bulb temperature” as shown in Figure 1.

In order to optimise the overall system efficiency, the Liebert EFC has been designed to change its operation mode according to the external environment. When the external air is cold enough to allow freecooling, the unit works in dry operation mode (winter operation mode). When ambient temperatures are higher, external humidity also determines unit capacity and performances as the evaporative

effect is directly associated with the external air capacity to absorb water.

When the unit operates in conditions with higher temperature and lower relative humidity (summer operation mode), Liebert EFC works in evaporative (wet) mode. In climates featuring high levels of humidity, the unit may thus require the integration of a Direct Expansion (DX) system or the installation of a chilled water (CW) coil (extreme operation mode).

During the cold season (winter operation mode) return air from the data centre is cooled down, leveraging the heat exchange process with external cold air. There is no need to run the evaporative system and the fan speed is controlled by the external air temperature.

During the warm season (summer operation mode) the evaporative system must run in order to saturate the air. This enables the unit to cool the data centre air even with high external air temperatures. By

satürating the air, the dry bulb temperature can be reduced.

Control and management of the system is crucial and Liebert EFC offers constant control of the data centre air via its integrated iCOM control logic. This ensures dew point temperature is lower than heat exchanger surface temperature, thus avoiding unrequired dehumidification.

The SmartAisle control logic embedded in the iCOM optimises internal air volumes and temperatures according to specific server needs.

It also allows Liebert EFC to exactly match the servers’ airflow needs, ensuring that not even a single watt is wasted in moving or cooling unrequired air.

The user-friendly iCOM control also exploits the management of energy and water at teamwork level. The system collects information from the different units’ key parameters and operating modes (dry, wet and DX/CW) while taking into account water and electricity costs. The control predictively calculates and then implements the combination which optimises operating costs.

Contact: Austin McDermot or Steve Wood, Core Air Conditioning. Tel: 01 – 409 8912; austin@coreac.com; steve@coreac.com; www.coreac.com ■

Liebert EFC 300

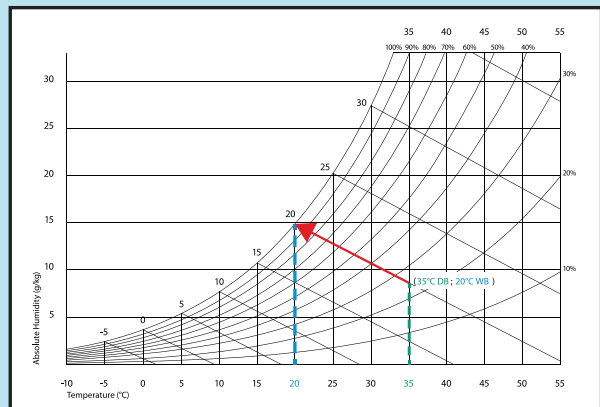


Figure 1 shows the transition from 35°C to 20°C.

<https://arrow.tudublin.ie/bsn/vol56/iss5/1>





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Captain's Prize at Powerscourt

RACGS' Captain Mark Kiely must have huge reserves with the weather gods because, despite a horrendous, non-stop 24-hour downpour leading up to the Captain's Prize at Powerscourt, miraculously the rain stopped as the first 4-ball teed off. This was just as well as the outing attracted one of the largest turnouts of the season and represented a fitting tribute to the Captain, who's DWG also sponsored the day.

While the rain had stopped, the previous 24-hour deluge impacted significantly on the course and so made for some very challenging playing conditions. That said, the scoring was surprisingly high, with

some excellent performances from quite a number of the players.

Daikin Golfer of the Year: As the RACGS programme heads in to the last outing – the charity event to be held in Carlow Golf Club on 20 October – John Ryan is in pole position with 22pts, while Joe Warren is on 19pts and John Qually on 17pts..

Powerscourt results were as follows:

Overall winner: Liam Carroll, 36pts.

Class 1 Winner: Joe Warren, 34pts;

Second: Declan Walsh, 34pts.

Class 2 Winner: John Qually, 31pts;

Second: Dave Killalea, 30pts.

Front 9: Martin O'Connor, 18pts.

Back 9: Ger Darcy, 18pts.

Longest drive: John Proctor

Nearest the pin: Brendan Sharkey ■



Captain Mark Kiely with overall winner Liam Carroll.



Captain Mark Kiely with Joe Warren, winner Class 1.



Captain Mark Kiely with John Qually, winner Class 2.



Captain Mark Kiely with Zac Keane, second placed visitor.

MHI Premium and Diamond Series

The Mitsubishi Heavy Industries (MHI) high-end ZSX Diamond Series and the ZS Premium Series have been engineered to provide significantly-improved comfort and energy savings. In addition to their sophisticated air-conditioning functions and energy-saving performance, both series feature a unique design to seamlessly blend with any interior decor. MHI has also released the ZS premium series exclusively in three different colour variations – a combination of black and white, pure white and titanium.



The design was created by Milan-based Italian industrial design studio Tensa srl, and responds to a broad spectrum of European design demands due to its rounded contours and stylish design features. To achieve a sophisticated sleek design, computational fluid dynamics (CFD) normally used in designing the shape, of jet engine blades, were adopted to optimise the layout and air duct shape of both the fan and heat exchanger. This resulted in operating noise of only 19 decibels (dB)(A)1 in "silent" mode for the new units.

The adoption of MHI's twin rotary compressor for the ZSX Series, combined with enhanced vector control enabling optimal control of the compressor motor, delivers greater efficiency throughout the range. As a result, the ZSX model achieves Europe's highest energy rating – EU Energy Label A+++ – in both cooling and heating mode. Furthermore, all models come

standard-equipped with motion sensors that detect the level of ambient human movement and automatically control the room temperature as well as the air-conditioners' on/off operations.

Both models feature a "silent" operating mode for the outdoor unit and weekly timer function for greater environmental compatibility and convenience. The models also allow connection through any commercially-available Wi-Fi adapter, enabling them to be operated via smartphones.

Features/benefits

- Stylish European design;
- High seasonal efficiency;
- Low noise level down to 19dB(A);
- Increased max piping length;
- Pre-set operation;
- Improved cool/heat auto changer;
- LED brightness adjustment;
- Optional Wi-Fi control via Smartphones, Tablets or a PC.

MHI ZSX MHI Diamond Series

Brief details of both series are as follows:

ZSX – Diamond Series

- Attractive, well-designed hi-end wall mount known as the Diamond Series model;
- Twin rotary compressor;
- Improved outdoor heat exchanger;
- High COP levels;
- Energy saving control by detecting human presence/activity;
- Unique rounded curves on each side of the unit;
- Suited to any type of environment, whether commercial, residential or industrial.

ZS – Premium Series

- Colour variation available;
- High seasonal efficiency;
- Lower noise levels;
- Optional Wi-Fi control;
- Pre-set operation setting;
- Quiet airflow using 3D Auto to achieve harmonised temperature.

Contact: Diamond Air Conditioning.

Tel: 01 – 636 3131;

Michael Clancy: 086 – 262 0701;

Graham McCann: 087 – 950 9402;

email: info@diamondair.ie;

www.diamondair.ie ■



MHI ZS Premium Series

Lindab enters AHU market with 50 years experience

Lindab is an international group that develops, manufactures, markets and distributes products and system solutions for simplified construction and improved indoor climate. The product range is defined by way of products and systems that are cost-effective, energy efficient and easy to install. Its extensive portfolio already caters for a broad cross-section of heating and ventilation products, and it has now enhanced its range with air handling units.

While new, this range of modular and compact air handling units was added with the acquisition of an established European AHU manufacturer and represents 50 years of experience. Lindab is now one of Europe's leading AHU manufacturers with 38 standard sizes and over 50 functional sections that allow immense flexibility and adaptation to individual project requirements.

Lindab's AHU portfolio is extensive, is designed for both indoor and outdoor installation, and includes the following:

Modular air handling units

The TopAir units are intended for central air treatment, allowing all basic functions

including heating, cooling, filtration, humidification, dehumidification, heat recovery and regeneration. With air flow volume rates of 1000m³/h up to 100,000m³/h, they boast excellent thermal and sound insulation, as well a custom selection of functional elements.

Covering the same air flow volume rates and application field as TopAir models, TopAir Plus air handling units boast an even better thermal bridging class (TB2), and also better thermal transmittance (T2), acc. to EN 1886.

Compact AHUs (Plug & Play)

The upgraded Lindab compact air handling unit range was developed to

ensure perfect indoor climate for different types of non-residential premises such as offices, restaurants, hotels and shops.

The Compair range boasts significantly-improved housing characteristics, premium class components, more flexible installation in limited spaces and an optimised price-performance ratio.

A new cloud-based control system allows simple interconnection with other HVAC elements and user-friendly setting of desired parameters via PC or Smartphone. All Compare Plug & Play units are equipped with an advanced integrated control system.

Hygienic AHUs

Hygienic type air handling units (HTM compliant) are designed for hospitals, the food industry, pharmaceutical industry and other cleanroom applications. Main features include:

- Construction without grooves and sharp edges;
- Easily-removable functional elements (fans, coils, heat recovery units, humidifiers) for cleaning, maintenance and service;
- All components and materials are resistant to disinfectants and corrosion resistant;
- Seals are smooth, abrasion-resistant, closed-pore.

Swimming pool AHUs

These units feature the basic functional requirements for indoor swimming pool AHUs such as an appropriate air handling system as well as suitable temperature and humidity control regimes according to water attraction operation, visitors' activity, outside air conditions and optimal energy consumption.

Explosion-proof AHUs

All elements are produced in accordance with the ATEX Directive and have all the necessary certificates.

Contact: Contact: Brian Mulhare,
Lindab AHU Product Manager.

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Office fit out in Galway.

<https://arrow.tudublin.ie/bsn/vol56/iss5/1>

Ecodan CAHV ideal for large heat pump applications

Specifically designed for large applications, the Mitsubishi Electric Ecodan CAHV air source heat pump monobloc system can operate singularly, or form part of a multiple unit system. The CAHV also comes equipped with a wide range of controller features as standard.

The multiple unit system has the ability to cascade available units on and off to meet the load from a building. As an example of this modulation, a 16-unit system allows 0.5kW increments of capacity, from 18kW up to 688kW.

This level of modulation is unprecedented within the heating industry and with cascade and rotation built in as standard, the Ecodan CAHV system is perfectly suited to a wide range of commercial applications.

The CAHV can connect directly to the Mitsubishi Electric AE-200 centralised controller. This allows full scheduling programming of CAHV units and stores any fault information.

The AE-200 Controller is also connectable to all BEMS systems without having to run multiple cables to the outdoor unit, while there is a simple two-core cable connecting units in cascade.

Features and benefits

- Multiple unit cascade control of up to 688kW capacity;

“The Ecodan CAHV system is perfectly suited to a wide range of commercial applications

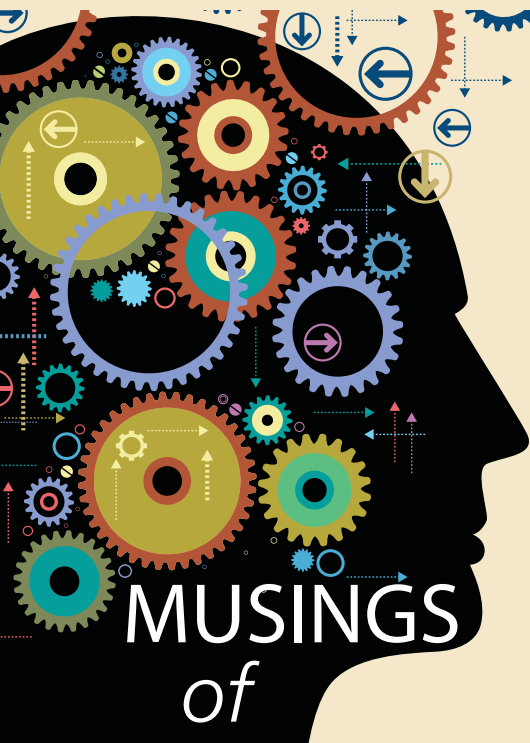
- Split refrigerant circuits within each CAHV provide 50% back up;
- Ability to rotate units based on accumulated run hours;
- Provides from 25°C to 70°C water flow temperatures without boost heaters;
- Hermetically-sealed monobloc design;
- Low on-site refrigerant volume;
- Zubadan technology delivers 43kW at -3°C with minimal drop-off down to -20°C.

Applications

- Commercial
- Residential care homes
- Apartment blocks
- Schools
- Office blocks
- Sports clubs
- Manufacturing

Contact: Dave McConnell,
Heating Products Manager,
Mitsubishi Electric Ireland.
Tel: 01 – 419 8800;
email: sales.info@meir.mee.com





Engineering Tim

Last man out

Another project, and yet another chaotic rush to finish the installation by the due date, with the scheduling of the mechanical and electrical services leaving us in the front line all the time. Last man out is typically the mechanical or electrical contractor ... "hey, we can't install the radiators until the walls are up!". Consequently, we're invariably caught in the firing line as being still on site with a toolbox long after the project was due to be handed over.

Some projects have firmly-fixed handover dates, and any program "slippage" (that's a delay, in common English) simply reduces the amount of time for mechanical and electrical install. Building services operatives need to educate their clients to this dilemma as otherwise M+E will always be seen as the bad boys.

<https://arrow.tudublin.ie/bsn/vol56/iss5/1>

Why hide the pipes?

Recessing, concealing and boxing-in have been all the rage to hide building services ducts and pipes and cables in buildings. Now, perhaps, it is time to change. Building owners need access to maintain and control the building services, so why try to hide them?



Exposed services are becoming the new fashion in building construction but The Pompidou Centre in Paris bravely led the way as far back as 1977, followed by the Lloyds Building in London in 1986. However, these buildings remained oddities for decades.

Now though building services have "come out", as many of our new offices have no false ceilings and everyone can see the ducts, pipes and cables. Of course, if everyone can see the extent of the mechanical and electrical services in a building, there might be a realisation that quality services are worth paying for. More exposure will shine a light on poor quality installations, so you better get ready to have your work in the spotlight.

Avoiding 'de-install' and alterations

So, Dublin's College Green will close to traffic to accommodate work on the LUAS cross-city route past Trinity College. Funny how I don't recall that being part of the great plan when the cross-city tram route was originally proposed.

Mind you, I suppose building services practitioners are also guilty of being economical with the truth at times. For instance, if the client knew precisely the sound off that boiler, it might never have been allowed there, and that gas meter outside the front door was certainly not part of the client's vision.

Installed services invariably come as a surprise to the client. We need to use BIM and virtual reality more to demonstrate the big picture long before we start to install on site. This might save us a lot of our costly "de-install", move and change work.

■ **Ireland to be fined** – Indications are that Ireland may have fines imposed by the EU if our 2020 carbon emission targets are not met. I reckon the Government will introduce incentives to ensure this does not happen. That means opportunities for building services practitioners.

■ **Russia new best friend?** – As Ireland's primary energy source moved from US coal to oil from the Middle East, and now to gas from Russia, so has Ireland's new best friends list changed. We are still best friends with the US but now our next best friend might be Russia, with the development of even more natural gas pipelines across Europe to Ireland.

■ **Girl power** – Now that building services is crying out for recruits, the industry needs to make a concerted effort to attract females into the sector. There are no glass ceilings in building services ... get the message out there!

Three colour options ...

... from the ZS Premium Series ac units
by Mitsubishi Heavy Industries



- Unique contoured styling
- Energy-saving performance
- Noise level down to 19dB(A)
- High seasonal efficiency
- High COP levels
- Pre-set operation
- Increased max piping length
- Optional Wi-Fi control
- Weekly timer function
- Improved cool/heat auto changer

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EP 55°C	35°C SYSTEM LABEL	DHW 55°C	-28°C CONSTANT HEATING AT -20°C T-CAP	5,00 COP HIGH PERFORMANCE	5 YEARS COMPRESSOR WARRANTY
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