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## BS News January/February

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# Building Services news



Alternative Refrigerants



Heat Pumps go Mainstream



Huge Potential for Solar



New F-Gas Regulations

## INDUSTRY TACKLES FUTURE OF THE PLANET

# Can You Hear the Eco?





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## Can you hear the Eco?

If not, then you are not listening. Contrary to what some commentators would have you believe, the building services industry is behaving in a very responsible manner when it comes to the environment, sustainability and energy saving.

This issue of *Building Services News* is awash with evidence of the sector's determination not just to help Ireland realise its EU 2020 obligations, but also to honour the spirit of its objectives.

In addition to a wealth of information on all manner of innovative product developments from individual companies, there are also articles from leading regulatory bodies and industry representative associations pointing the way forward.

System designers, contractors, installers and other key decision-makers will find a wealth of advice, guidance and informed opinion in this issue.

Hear the Eco and heed it.

# Building Services news

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## NEWS AND PRODUCTS

### €30 million Community Energy Fund for 2017

SEAI is to offer €30 million in grant supports for community energy projects throughout 2017, a figure that represents a 50% increase in funding from the 2016 grant levels. The Better Energy Communities programme supports new approaches to achieving high-quality improvements in energy efficiency and helps communities complete energy by clustering buildings under one umbrella project.

Over the past five years SEAI has provided €85 million support to 300 community energy efficiency projects. As a result €170 million has been invested in energy efficiency upgrades of over 15,000 homes and hundreds of community, private and public buildings, supporting several hundred jobs each year.

Jim Gannon, CEO of SEAI said: "For 2017 we are particularly interested to hear from smaller communities with smaller projects that may only

be starting out. We will also provide additional incentives to encourage multiple upgrades in homes that achieve very high performance."

See [www.seai.ie/bec](http://www.seai.ie/bec)



Jim Gannon, CEO of SEAI with Denis Naughton, TD, Minister for Communications, Climate Action and Environment.

### Mini VRF from Panasonic

"Panasonic's new high-capacity 2-pipe heat pump Mini VRF system is a perfect synergy between size, efficiency, capacity and piping, making it the ideal solution for light commercial applications," says Vincent Mahony, National Account Manager, Panasonic Ireland. This new line of Mini VRF systems comes with several end-user benefits, including quiet mode and full ECOi control.

The slim, compact profile with front panel maintenance access offers a solution that is perfect for sites with access and plant space issues.

It has been designed for installation in restricted sites such as small shops, offices, large residential properties and housing developments. The system is also well suited to larger commercial applications including hotels or large office buildings where outdoor units should not interfere with exterior building aesthetics.

Panasonic's new Mini VRF system is available in 8hp or 10hp and is optimised to provide energy efficient performance. It utilises the horizontal discharge and combines this with a powerful heating capacity at ambient temperatures. As a result, flexibility is altered enabling the system to operate at 100% capacity at 40°C ambient in cooling mode. The system also boasts a market-leading COP rating and high heat exchange performance.

With a maximum rated static pressure of 35Pa, the Mini VRF fan performance is of such standard that it can operate in applications with high fan resistance.

Panasonic's Mini VRF unit offers piping runs of up to 150 metres which enables a greater flexibility with system design. The unit can also connect to up to 15 indoor units, from a wide range of models. As a result, finding a space to install an outdoor VRF system which is both convenient and discreet has never been easier.

Contact: Vincent Mahony, National Account Manager, Panasonic Ireland.

Tel: 087 – 969 4221; email: [vincent.mahony@eu.panasonic.com](mailto:vincent.mahony@eu.panasonic.com)



<https://arrow.tudublin.ie/bsn/vol56/iss1/1>

### IERC Annual Conference

The sixth IERC Annual Conference will be held on Thursday, 30 March 2017, at the Fota Island Hotel, Cork. The conference theme is – "Industry-driven innovation: realising future energy system".

There will be a gala dinner the night before.



Tony Day Executive Director IERC.

This year the IERC has also launched an exciting new competition for Irish 3rd level students called 'Concept' which will coincide with the conference. More information can be found at [www.ierc.info](http://www.ierc.info) or by emailing [concept@ierc.info](mailto:concept@ierc.info)

The conference proper will address the following challenging areas in the energy sector:

- Driving energy performance;
- Developing systems that enable households and communities to access affordable and reliable electricity;
- Accelerating the exploration and discovery of new clean energy innovations.

Tickets can be booked through [www.eventbrite.ie](http://www.eventbrite.ie)

## NEWS AND PRODUCTS

### Introducing Broderick Consultancy Services

Vincent Broderick, widely known and respected within the building services sector, has now formed his own consultancy with a view to harnessing his vast experience and applying it to deliver business solutions across a broad spectrum of industry-related activities.



Trading as Broderick Consultancy Services, Vincent will engage with clients on a consultancy basis to provide sales management advice; brand overviews; strategic reviews; product reviews; value procurement and business development.

He has a particular strength in the heating sector and has already undertaken assignments for a number of international, market-leading brands.

"After almost 35 years in the business, I find that the experience, expertise and contacts I have developed over that

time place me in a unique position within the industry", says Vincent. "I'm now looking forward to harnessing this strength to deliver tailored business solutions for the many new challenges facing the sector".

Contact: Vincent Broderick, Broderick Consultancy Services. Tel: 087 784 8425; email: vincentbroderick100@gmail.com

### Society of Chartered Surveyors Ireland appoints new DG

The Society of Chartered Surveyors Ireland has appointed Áine Myler as its new Director General. Ms Myler has been a key member of the Society's executive and leadership team over the last decade and joined the management team as Director of Operations in January 2016, following many years in private practice as a company director and chartered valuation surveyor.

Ms Myler holds a masters degree in Planning and Development Economics and served as President of the Irish Auctioneers & Valuers Institute (IAVI) in 2009, prior to its merger with the SCS.



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## NEWS AND PRODUCTS

### First BIM Kitemark

**BSI, the business** standards company, has introduced a new Kitemark for BIM, helping construction businesses around the world prove their capabilities in delivering projects at the design and construction phase. Among the first organisations worldwide to achieve the Kitemark for PAS 1192-2 is BAM Ireland.



Theo Cullinane, CEO, BAM Ireland explains: "Achieving this Kitemark clearly demonstrates to our clients and greater supply chain that we have the capability and expertise to deliver projects to the

highest recognised BIM standards. Gaining this is an important and not insignificant recognition of the effort we have put into developing BAM's business model in Ireland."

The Kitemark has been developed in collaboration with industry stakeholders to ensure that they add value and address the key issues which will help the construction industry with BIM implementation.

Andy Butterfield, Product Certification Director of Built Environment at BSI said: "In a competitive marketplace, companies delivering BIM projects need to find a way to differentiate themselves, regardless of whether they are tendering for public or private sector projects. The BSI Kitemark does just that, helping companies to demonstrate their commitment to best practice".

### RACGS programme for 2017

Details of the RACGS outings for the 2017 season are as follows.

**Tuesday, 4 April**

Carton House (O'Meara). Tee: 11am;

**Thursday, 25 May**

President's Day at Druids Heath.  
Tee: 12noon;

**Thursday, 22 June**

St Margaret's. Tee: 12noon;

**Friday, 18 August**

Fota Island (RACGS v NRGs Ryder Cup). Tee: TBC;

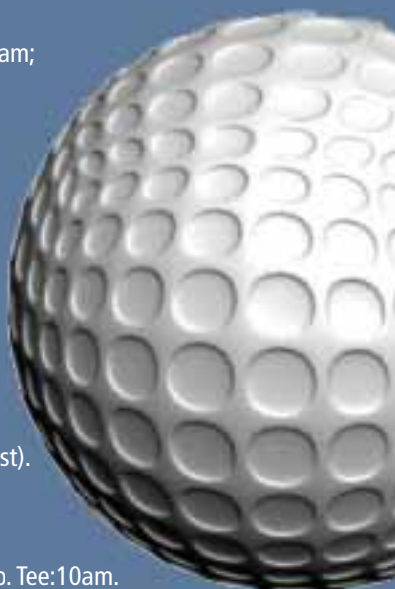
**Friday, 22 September**

Captain's Day at Powerscourt (West).  
Tee: 11am;

**Friday, 20 October**

Charity outing at Carlow Golf Club. Tee: 10am.

The RACGS Golfer of the Year will be sponsored by Daikin.



### Shay Kavanagh now trading as independent consultant

Having worked with SEAI since 2008, Shay Kavanagh has left the organisation and is now an independent consultant trading as Fuinniv Independent Consulting. Shay is a chartered engineer and has played a key role for SEAI managing development of the Energy Performance of Buildings Directive (EPBD) technical methodologies for BER and Part L, as well as having responsibility for the HARP database.

Shay has worked closely with the Heat Pump Association and consultants in redeveloping SEAI's heat pump methodology for DEAP. He also led Ireland's response to the current review of the European standards underpinning EPBD methodologies. His recent focus has been on provision of technical rigour across



a range of areas in SEAI such as Accelerated Capital Allowance, energy statistics, project proposal evaluations, energy obligations, ErP and Better Energy.

Shay previously worked as an energy engineer with RVR in Kenmare, focusing on renewable energy system design, sales and training.

As an independent energy consultant Shay will continue to provide technical expertise supporting enhancement and application of energy standards, policies and programmes. He sees this technical independent input as an essential and increasing requirement to energy developments extending from European level through to national, regional and local level.

Contact: Shay Kavanagh, Fuinniv Independent Consulting. Tel: 086 – 838 9717; email: shaykav@gmail.com; www.fuinniv.ie.

## NEWS AND PRODUCTS

### NZEB Specification for Public Sector Buildings

The *Interim NZEB Specification for Public Sector Buildings* sets out a performance specification for new buildings owned and occupied by public authorities after 31 December 2018. It is intended that this specification will form the Nearly Zero Energy Buildings (NZEB) requirement in the interim period until the new 2017 Part L for buildings other than dwellings takes effect.

The definition of NZEB and the performance specification is being led by the Department of Housing, Planning, Community and Local Government (DHPCLG) in collaboration with representatives from the Office of Public Works (OPW), the Department of Education and Skills (DES), the Health Services Executive (HSE) and the Sustainable Energy Authority of Ireland (SEAI). Government Departments and public authorities will be responsible for implementing the performance specification for new buildings in their respective sectors.

On 30 January last all the bodies concerned collectively presented the NZEB specification to an invited audience of those involved in the public sector. Examples of how to achieve this performance were also given and the intention is for this NZEB Workshop to be repeated and to make it open to the entire industry during the forthcoming SEAI Energy Show at the RDS (5 & 6 April 2017).

See also: Interim NZEB Public buildings (PDF 628KB).

### BTU 2017 calendar dates

#### Friday, 28 April

Castleknock. Tee: 1pm to 2.30pm;

#### Friday, 26 May

Lucan. Tee: 11.50am to 1pm;

#### Friday, 23 June

Clontarf (Captain's outing). Tee: 1pm to 2.30pm;

#### Friday, 25 August

Hermitage. Tee: 10am to 11.20am;

#### Friday, 29 Sept

Newlands (President's outing). Tee: 11am to 1pm;

#### Friday, 27 October

Grange. Tee: 12noon to 1.30pm;

#### Friday, 8 December

St Anne's (Christmas outing). 10.30am to 12.45pm. Dinner and music Clontarf Castle (private room) at 7.30pm

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**BAXI POTTERTON**  **MYSON**

## Job Opportunities

### Commercial Sales Advisor

Baxi Potterton Myson is looking to appoint a Commercial Sales Order Processing Advisor to promote the sales of BPM products and warranty schemes, offer after sales/technical support, and trade awareness via marketing and other related sales/trade events. The Commercial Sales Order Processing Advisor will support the field-based sales team across the entire BPM product range covering all brands and solutions offered.

Key responsibilities include:

- Sales order processing;
- Promote BPM product ranges;
- Establish new customer relations while reinforcing existing trading partnerships;
- Provide technical support and after-sales service;
- Promote the sale of BPM warranties.

Attractive salary plus a performance bonus, contributory pension and 21 days annual leave outside of bank holidays.

### Business Services Support

Baxi Potterton Myson Ireland is also looking to appoint a Business Services Support Advisor. This is a new position created to ensure the engineer workflow is managed efficiently.

The Business Services Support Advisor is a varied role, requiring an organised and confident mindset, and involving a customer interactive role.

Key responsibilities include:

- Allocation of jobs to the engineering division;
- Identifying chargeable and none-chargeable events and liaising accordingly with customers;
- Managing commissioning work;
- Order processing and account queries;
- Assisting with the purchasing and sourcing of spares/parts;
- Assisting with stock level monitoring;
- Managing training courses.

Attractive salary plus a performance bonus, contributory pension and 21 days annual leave outside of bank holidays.

To apply for either role email CV to:

**[vacancies@baxi.co.uk](mailto:vacancies@baxi.co.uk)**



## NEWS AND PRODUCTS

### ASHRAE on data centres

The **CIBSE ASHRAE Group** is hosting a technical seminar on data centres in Ireland, and the international standards used in their design, at the IERC in Cork on Wednesday, 8 March 2017. Details are as follows:

2pm – Registration;

2.30pm – David McAuley, Host in Ireland Initiative Advisor.

*What does Ireland's digital success mean for energy infrastructure;*

3.15pm – Paul Finch, KAO Data Chief Technical Officer. Data Centre.

*Design Guidance and Updates;*

4pm – Questions and answers;

4.30pm – Refreshments and networking;

5pm – Close.

Book your place at: <https://attendee.gotowebinar.com/register/735575516017004>

### ISH – Frankfurt 14/18 March

**ISH in Frankfurt** is the world's leading trade fair for the Bathroom Experience, Building Services, Energy, Air Conditioning Technology and Renewable Energies.

With everything from sustainable sanitation solutions, innovative bathroom design and energy efficient heating technologies combined with renewable energies to environmentally-friendly air conditioning, cooling and ventilation technology, the world's leading trade fair covers all aspects of future-oriented building solutions.

Over 2,400 exhibitors, including all market leaders, will unveil their latest products, technologies and solutions on to the world market. See [www.ish.messefrankfurt.com](http://www.ish.messefrankfurt.com)

### Mulvihill join PMEP



**Peter Mulvihill** has joined Penston MEP Consulting as a Senior Mechanical Engineer. Peter has 10 years experience in the building services industry, having previously worked as an M&E consultant and then, for the past eight years, with Origen Energy Ltd as Technical Manager for district heating and renewable energy systems. He also served as liason between the Heat Pump Association of Ireland and the Geothermal Association of Ireland.

PMEP Consulting specialises in project management and building services, and engineering design for mechanical and electrical projects in the commercial, retail, education, health, power and industrial sectors.

Contact: Peter Mulvihill, Penston MEP Consulting.  
Tel: 01 – 253 0710; email: [info@pmpc.ie](mailto:info@pmpc.ie)

### Core AC appoints Kohlbeck

**Dave Kohlbeck** has been appointed AHU Salesman for the Novair range by Core Air Conditioning. Dave has been part of the mechanical services and controls industry in Ireland for the past 27 years and, prior to that, he spent 18 years in the UK within the same industry.



### Public sector on 2020 target

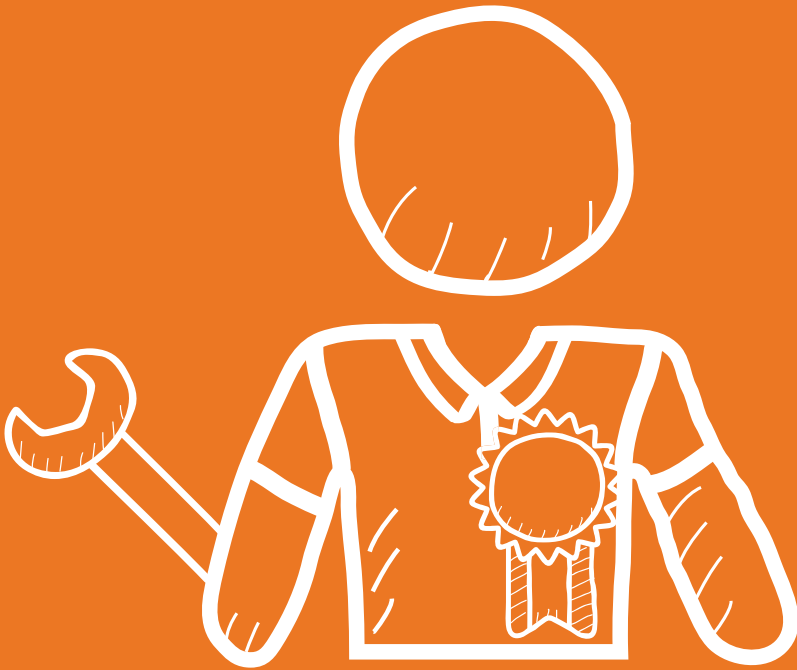
The **SEAI third annual** report on the energy efficiency performance of public bodies shows that government departments and public bodies avoided €154 million energy spend through increased energy efficiency. The sector is now 21% more energy efficient than its 2009 baseline and is on track to meet the 2020 target of becoming 33% more energy efficient.

Efficiency gains have been achieved through implementation of thousands of diverse projects, ranging from structured energy management, building and facility upgrades, retrofits, changes in transportation, better energy procurement and through behavioural change in organisations.

Public bodies are required to report annual energy efficiency data to the SEAI which manages the reporting process on behalf of the Department of Communications, Climate Action and Environment.

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\*Free gas boiler training is only available to RGII registered engineers.

# THE FUTURE IS NOW.

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**Now in its** 37th year operating in Ireland, Wilo has begun 2017 with the implementation of a major re-structuring programme that sees Derek Elton appointed Managing Director of Wilo Ireland, and the roll-out of a strategic development plan aimed at strengthening still further the range of products and services provided to the marketplace. It will include the recruitment of additional personnel over the coming months, and the introduction of innovative new products across all ranges. These will come on stream in Ireland following their unveiling at the forthcoming ISH 2017 in Frankfurt (14 to 18 March).



Derek Elton,  
Managing Director,  
Wilo Ireland

This reinforcement of the Wilo Ireland operation is part of the Wilo Group 2020 Vision worldwide expansion and development programme that has seen major investment in each of its locally-based subsidiaries. Just 12 months ago Wilo Ireland moved to new, purpose-designed headquarters in Calmount Business Park, Dublin 12. The team at Wilo Ireland has been rejuvenated by this initiative as the new premises incorporate state-of-the-art facilities including modern office layouts, a staff restaurant, service centre, specially fitted out warehousing and a dedicated CPD training theatre.

Customers in turn have experienced the benefits of this change and are set to benefit further now that all administration, logistics and technical support are concentrated in Dublin. Communication at all levels is far more streamlined and the fact that Wilo Ireland now deals directly with Wilo headquarters in Germany has also strengthened the product, technical support and service delivery process.

In addition, Wilo Ireland operates two Service Centres, one based in Dublin and the other in Limerick, with the latter providing more focused service delivery geared specifically for the needs of the Munster region.

Wilo Ireland now represents a committed team of experts that bring a wealth of experience, knowledge and expertise to bear when devising pumping solutions for its customers.

Wilo Ireland ... building on its 37-year history in Ireland – and the 145-year history of its parent – to realise the Wilo Group 2020 Vision.

**Wilo  
at ISH 2017  
14-18 March 2017  
Hall 9.1  
Booth B/C/D 46**

## Technical and after sales support

**Customer support** – including commissioning, service, fault-diagnosis and prompt response – are especially important for all Wilo’s partners in today’s marketplace. Hence the holistic approach the company takes to every project, irrespective of size.

Engineers are constantly engaged in continuous professional development, participating in training and educational courses at Wilo in Ireland, and at various Wilo centres of excellence worldwide.

The benefits of this programme are then brought to bear when delivering CPD and other training modules at its new headquarters.



## Going digital with €100 million investment

**Digitalisation has become** a key factor in Wilo’s success, and this is also true when applied to the product portfolio. It changes the entire value chain, but particularly production processes and working procedures. Wilo has identified some tough challenges, but also great opportunities in implementing digitalisation in its products and processes. Thus, everything in the Wilo Group is now firmly focused on digitalisation and technological progress.

That is why it has embarked on the largest site development programme in the company’s history at its Dortmund headquarters with a planned investment of well over €100 million. “This is an investment in the future. It will reinforce our leading position in the marketplace and secure our technological leadership in a range of areas”, says Oliver Hermes, CEO of the Wilo Group.

## History dating back to 1872

**Founded in 1872** as Kupfer-und Messingwarenfabrik in Dortmund, Wilo has evolved from being a local engineering specialist to a global market player. Today, nearly 145 years since it was established, 5th generation Oplander family members still guide the company’s continuity and independence. It employs over 7,500 people worldwide and has a turnover of €1.3 billion.

An uncompromising customer-driven mindset, coupled with a culture of innovation, has positioned it as one of the world’s leading manufacturers of high-tech pumps and pump systems.

Wilo is synonymous with first-class German engineering and the product range includes high-efficiency pumps exceeding current EU Directives on energy requirements, through to complex booster, wastewater and sewage systems.

## German Brand Award Gold

The renowned German Design Council and the German Brand Institute have presented Wilo with the German Brand Award Gold. For the first time, companies that recognise the “importance of brand management as a crucial success factor” and implement this in a particularly distinguished way are honoured with this award.

“We know about the power, effect and competitive edge of a strong brand, and thus live and breathe this at Wilo every day”, says Derek Elton, Managing Director, Wilo Ireland. “We are particularly proud of this award, as it honours our long-standing and multifarious efforts with regard to brand reinforcement, and the benefits this brings to our customers in the marketplace.”



## Supporting BIM

**Wilo is the** first pump manufacturer to provide product data in digital form for Building Information Modelling (BIM). This means Wilo products’ technical details, features and benefits can be incorporated directly into the 3D CAD planning process for a building. This is a considerable advantage for consulting engineers and other system designers as it fully streamlines the specification and product selection process.



Wilo Ireland.  
Tel: 01 – 426 0000  
email: sales@wilo.ie  
[www.wilo.ie](http://www.wilo.ie)

# DAB unveils its FK range of submersible pumps

DAB Pumps has unveiled a new submersible sewage range called the FK Series. This new range is available with an anti-clogging vortex impeller (FKV), from DN65 –DN100, or single channel impeller (FKC), from DN65-DN150.

**FK pumps** are designed to handle demanding liquids, including large quantities of surface drainage water, residential waste water, water with high fibre content and loaded industrial water. They are ideal for draining large public buildings, apartment complexes, hospitals, industrial facilities, pedestrian subways and car parks.

The FK range has been manufactured to be both efficient and reliable. The pump guarantees high performance with limited energy consumption in compliance with European regulations. Special attention has also been paid to maintenance, with innovative and fast-servicing solutions.

The pumps are fitted with premium efficiency IE3 high-efficiency motors as standard, with new hydraulics that dramatically reduce energy operating costs, offering an efficiency improvement of up to 5%. This means the potential to recover the initial investment for the purchase of the pump within two years.

As an option, this range of pumps can also comply with the ATEX and IECEx standard that certifies their safety in potentially explosive atmospheres.

Compliance with European standard EN 12050-1 guarantees correct operation with the presence of high solid content in the liquid. This compliance is in fact only granted to pumping

systems that pass the simulation tests consisting of being able to correctly pump, without compromising the lifting efficiency, six floor cloths, 40x25 cm in size, added at regular intervals.



The standard applies both to the range of anti-clogging vortex impellers that guarantee a total free passage equal to the delivery DN, and the new range of single-channel impellers.

Maintenance is made easy by the cartridge seal, an exclusive DAB patent. Due to this, the correct removal and replacement of the seal is ensured within the shortest possible time, and without the use of special tools or handmade pads. This guarantees that the factory tolerance levels of the pump will be reinstated. The pumps also benefit from a bi-component outer coating to offer greater resistance to corrosion.

Another feature is that the seals are independent from the direction of rotation and are located inside a cathaphoresis paint-coated, cast iron housing. They protect the motor compartment from possible leaks, providing an actual SIC/SIC double seal inside the oil chamber. The optional seal monitoring by a moisture sensor located in the seal chamber signals an inspection alert if there is leakage at the mechanical seals.

Contact: Neil Haigh, Export & Key Accounts Manager, DAB Pumps. Tel: 085 – 776 4836; email: [neil.haigh@dwtgroup.com](mailto:neil.haigh@dwtgroup.com) ■

**Below: DAB FK pump being lowered into position. Inset: cut-away of the new unit.**



# LET'S RETHINK THE RULES..

et al.: B News January/February



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Founded in the basement of Poul Due Jensen's house in 1945, Grundfos has since grown into a multinational group with 83 companies and over 18,500 employees worldwide, making it one of the world's largest pump companies. It has always had a strong market presence in Ireland and this was further reinforced in 1984 when the dedicated Grundfos Ireland operation was opened. Today it is led by Managing Director Gordon Barry who was Grundfos Ireland's first employee, and Sales Director Liam McDermott who joined in 1991.



Gordon Barry,  
Managing Director

As a leader in pump technology Grundfos provides innovative solutions to customers using the most advanced products designed specifically to cater for the requirements of building services applications. Looking beyond pump hydraulics, Grundfos has continuously introduced industry "firsts" and technological breakthroughs with cutting-edge products that have set benchmark industry standards. Using Grundfos Integrated Variable Speed Drives as a platform and listening to customers' needs, Grundfos R&D has integrated innovative functionality such as AUTOADAPT where pumps automatically adapt to the system's requirements, integrated heat energy meters, BMS and Ethernet connectivity, and remote internet monitoring of pumps and systems.



Liam McDermott,  
Sales Director

The Grundfos business model has evolved over the years and today it represents a combination of market-leading products and pump solutions which are delivered to the marketplace by a team of engineering experts. People are the key to Grundfos globally and this is reflected at Grundfos Ireland where teams of sales and service engineers liaise directly with customers. All are qualified and experienced engineering personnel who continuously undergo training and educational programmes to keep abreast not, just of Grundfos technology, but also of broader industry innovations and developments in related standards and regulations.

To be  
the best,  
be with  
the best

### Service Team

The Grundfos team of specially-trained service technicians and engineers provides on-site support for all its customers. They are involved in all aspects of projects from pre-commissioning right through to final commissioning, and offer system trouble-shooting services when required. The advancement in the Grundfos product range over the years means that they are not only knowledgeable and skilled in the hydraulic aspect of pumping, but also have a thorough understanding of electronics and utilise specialist proprietary tools to log and monitor the health of these advanced products.

Service Team – John Kelly with Alan Metcalfe, Eddie Byrne, Shaun Kelly, Biju John, Karl Flanagan and Paul Quinn.



## ➤ Commercial Building Services

The commercial building services team comprises Brian Harrison, Robbie Linnane and Mark O'Sullivan, all building service specialists. They interface directly with consultants and contractors, and focus on delivering engineered solutions for commercial projects of all sizes. Emphasis is not just on cost-competitiveness but also on added value and the utilisation of the advanced functionality of the product portfolio. They build partnerships with customers to deliver sustainable engineered solutions.

**Commercial Building Services**  
– Brian Harrison with Mark O'Sullivan and Robbie Linnane.



## ➤ Technical Sales Support

Jason Redmond, Jarek Pokrzewinski and Kevin McCormack make up the office-based sales team, who provide back-up to the customers and our own sales team. They are all trained in pump technology and use our advanced IT systems and web-based tools to provide first-class service. In addition, the Grundfos Product Centre provides all technical information on the products including CAD, BIM & IOM's and is available online 24/7 and linked with Grundfos extranet, giving customers the ability for easy access to technical information, check lead times and to place orders at any time.

**Technical Sales Support** –  
Jarek Pokrzewinski with Jason Redmond and Kevin McCormack



## ➤ Industry and Energy

The industry and energy team is managed by Liam Kavanagh and Stuart O'Kennedy and was set up in 2012 to promote energy awareness among customers, particularly reaching out to the end-user. Both are graduate energy engineers with specific Grundfos training that allows them identify energy saving opportunities in the existing pump stock and to recommend, where appropriate, upgrades to modern energy efficient solutions that will benefit the customer. Knowledge of control systems, BMS integration and the utilisation of the product functionality are key factors in energy optimisation. The team has delivered a considerable number of successful upgrades in commercial, industrial and public buildings and has saved end-users millions of KWh annually, not to mention the related energy costs delivering a sustainable business model in keeping with the Grundfos values.

**Industry and Energy** – Stuart O'Kennedy with Liam Kavanagh



## ➤ Domestic Building Services

Ray Broughan and Lisa Gall head up the domestic building services team and spend most of their time dealing with queries from merchants, plumbers and heating installers. Familiarity with the domestic product range, personal relationships with the customers and the time they spend on customers' premises adds a level of customer service unrivalled in the pump sector.



**Domestic Building Services** – Ray Broughan and Lisa Gall.

## ➤ Water and Utility

This team comprises Paul Allen, Ronan Shortall and Ronan Byrne. They look after the water and utility business, servicing local authorities, Irish Water and private customers providing water supply, sewage and water treatment solutions.

**Water and Utility** –  
Ronan Byrne with Paul Allen





# Xylem ... Let's solve water

Xylem Water Solutions dates back to 1901 when a Swedish businessman bought a foundry in Lindås, Sweden and developed it into a pump business. Today, the company has its main production plant in the very same Swedish community, along with plants in Asia and the Americas. Annual turnover is in the region of €3.5 billion while the portfolio comprises a comprehensive range of pumps for primary, secondary and tertiary water treatment, and associated products for treating water through biological, filtering and disinfection processes.

**With operations in** more than 150 countries – including a dedicated Ireland office – Xylem is a force to be reckoned with when it comes to providing total solutions for fluid handling and control. Its range of superior innovative products and applications know-how provides customers with enhanced functionality in addressing water and wastewater issues. Principal product areas served in Ireland are:

- Circulation
- Boosting
- Pressurisation
- Heat exchangers
- Firefighting.

The Xylem portfolio of market-leading brands presents customers with a vast and diverse choice of products suitable for



**Kevin Devine, Business Development Manager, Building Services, Xylem Water Solutions Ireland.**

virtually every conceivable application.

However, the quality and pioneering designs of the products, coupled with their

innovative features and cutting-edge technology, are only part of the story. Equally important is the manner in which these are brought to the marketplace, the design and installation support provided, and the commissioning, maintenance and after-sales service packages on offer.

To that end Xylem has a nationwide team of highly-qualified and experienced engineering experts based in three locations – the Dublin and Belfast offices and central distribution centre in Cork – who between them cover the entire country. This team of knowledgeable, professional and highly-skilled staff engage with customers at all levels, are available to discuss the needs of specific projects, and provide design and product-selection advice where applicable. All are full-time employees of the company, including the service team of six engineers.

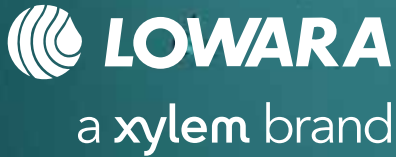
Supporting this endeavor is the Lowara CAD Centre where consultants can find 2D and 3D CAD drawings, and BIM models, for all of the company's water boosting and circulating pumps. This simplifies the work of specifiers who can now find the CAD files for most Lowara products in one place.

The CAD Centre is really user-friendly with icons for each product type that lead directly to the drawings. It also incorporates a powerful search function that quickly narrows down "hit lists", so finding what you're looking for is quick and easy. The files can be either downloaded or shared via email directly from the CAD Centre with just one click.

"As a leading global water technology company, we deal with one of the world's most urgent sustainability issues ... responsibility for our shared water resources", says Kevin Devine, Business Development Manager, Building Services, Xylem Water Solutions Ireland. "Our link to this huge, extremely urgent challenge informs how we think about sustainability, and drives us to move with speed to deliver water management solutions incorporating sustainability, long operational life, cost-effectiveness and energy efficiency at their core."

Contact: Kevin Devine, Business Development Manager, Xylem Water Solutions Ireland. Tel: 087 – 757 7411; email: kevin.devine@xyleminc.com ■





# EXACTLY WHAT YOU NEED FROM A CIRCULATOR

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This is exactly what the ecocirc XL and XLplus will offer.



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email: [kevin.devine@xylem-inc.com](mailto:kevin.devine@xylem-inc.com)  
Published by ARROW@TU Dublin, 2017

**xylem**  
Let's Solve Water

## F-GAS REGULATIONS UPDATE

# Implications of 2016 EU F-Gas Regulations



**The F-gas Regulation (EU) N 517/2014 was published in the *Official Journal* on 20 May 2014. The 2014 Regulation fully replaced the 2006 F-Gas Regulation as of January 2015. Now, two years later – and with the recent Publication by the EPA of SI 658 of 2016, the Statutory Instrument with regard to the 2016 EU FGas Regulations – Seamus Kerr\* (pictured) considers the current situation and future impact of these developments.**

**Essentially, the document** outlines the requirements of the Regulation and, for the first time, details the penalties for any breach of the Regulation.

The new Regulation introduces additional requirements compared to the 2006 Regulation. Although the new rules maintain the principles of the 2006 Regulation, they go much further as they introduce a completely new mechanism to ensure emission reductions. This mechanism is called the phase-down and will gradually reduce the consumption of HFCs.

It also massively changes the way industry can use HFCs. The Regulation also includes equipment

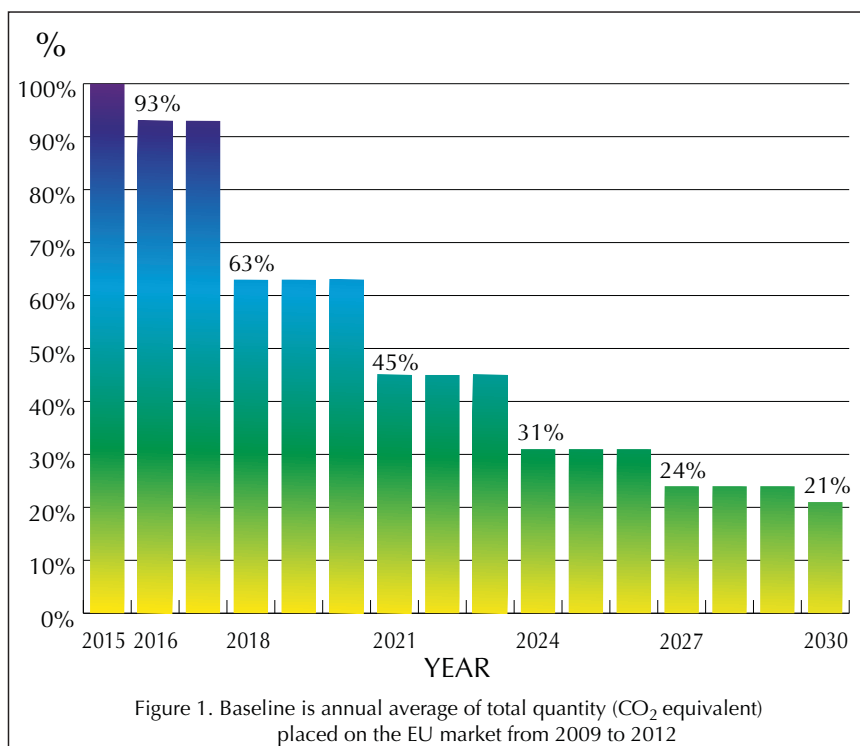
bans and service bans which will be summarised in this document. New requirements for labelling, leak detection, record keeping and training are included in the document. Please see the Institute of Refrigeration Ireland’s website for the latest FAQ document from AREA which includes all the details.

### Equipment bans

One equipment ban which comes into effect in January 2020 is for refrigeration equipment using a refrigerant with a GWP greater than 2500. This will include the very popular R404A and also R507, R422D and others. Current alternatives such as R407A will not be affected by this ban.

The second equipment ban is much more serious. This ban comes into effect in January 2022 and bans

refrigeration equipment using a refrigerant with a GWP greater than 150. It applies to multi-compressor systems only. Currently there is no practical alternative available here. The HFO refrigerants which would work here are extremely expensive because of a complicated manufacturing process. Moreover, their long-term availability is questionable due to an ever-decreasing raw material source and their environmental impact is as of yet unknown.



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### COMFORT LIKE NO OTHER



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- Whisper quiet units starting at 29 dB(A) for a 7.1kW cassette
- Energy efficient
- Won the 'Good Design award 2016' in Japan
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- Smart climate control via presence detection
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**HEAVY INDUSTRIES**

Our Technologies, Your Tomorrow

**Service bans**

The service ban will ban the use of R404a and other refrigerants with a GWP greater than 2500 from January 2020 in systems with a CO<sub>2</sub> equivalent charge of more than 40 tonnes. This would equate to a system with more than 10.2kg of R404A. Recycled R404A can be used until 2030. This is another serious ban as it will greatly impact the servicing of existing equipment.

**Phase-down**

The phase-down is a step-by-step approach where the quantities of

HFCs expressed in CO<sub>2</sub> equivalent that are placed on the market are gradually reduced through the allocation of quotas by the European Commission to producers and importers of bulk HFCs. As a result of the phase-down, HFC consumption will be reduced by 79% by 2030.

This is an unprecedented reduction and means that industry and users need to make the transition to refrigerants with a lower global warming potential. This phase-down will force high GWP refrigerants like R404A off



‘The new rules massively change the way industry can use HFCs

## Statutory Instrument SI 658 2016 EU

Statutory Instrument SI 658 2016 EU F-Gas Regulations makes provisions necessary for the purposes of full and effective implementation in Ireland of the F-gas Regulation (EU) No: 517/2014.

The main provisions of the SI 658 are:

- To designate and assign duties to the EPA as competent authority;
- To provide for the appointment of, and assignment of the duties of, and various functions of, an Authorised Officer;
- To outline a number of offences under these Regulations and to make provision for the introduction of certain fixed payment notices for the following offences:
- Carrying out certain activities without the required certification;
- Employing uncertified persons to carry out activities requiring certification;
- Collecting or transporting gases without holding the appropriate permits;
- Failing to establish records of waste gas movements;
- Failing to conduct leak checks as required;
- Failure to maintain required records of leak checks;
- Placing fluorinated greenhouse gases on the market without the required labels;
- Placing equipment charged with fluorinated greenhouse gases on the market without declaration of conformity;
- Selling fluorinated greenhouse gases to an undertaking who do not hold the relevant certificates;
- Buying fluorinated greenhouse gases without holding the relevant certificates.

The SI 658 2016 is available to download for free from [www.fgases.ie](http://www.fgases.ie).

the market and may lead to severe shortages of refrigerant. Figure 1 illustrates the severity of the phase-down. The impact of the 30% reduction by 2018 is already being felt by the industry with significant refrigerant price increases now being introduced.

**Equipment containing F-Gas**

The European Commission has also just released a document to importers of stationary and mobile refrigeration, air conditioning and heat pumps stating that they must ensure that all hydrofluorocarbons (HFCs) pre-charged into equipment are accounted for under the HFC quota system. Importers of such equipment will also need to register in the HFC Registry and draw up one or more declaration(s) of conformity at the time of import, and ensure that compliance is fully documented and verified.

Further information can be found on [instituteofrefrigerationireland.ie](http://instituteofrefrigerationireland.ie); [www.epeglobal.org](http://www.epeglobal.org); [www.ozone.ie](http://www.ozone.ie)

\*Seamus Kerr BEng, MScEng, MIEI, MIRI is a Council Member of the Institute of Refrigeration Ireland.

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E-mail: [seamus@slireland.com](mailto:seamus@slireland.com).

He also acknowledges Andrea Voight, EPEE and Eamonn Merriman, EPA for their respective inputs to this article.

# ReCooler® HP

FläktWoods

**No Chiller, No Condenser, No Boiler, No Pipework**  
Our **ReCooler® HP** is a DX heat pump unit that is optimised for indoor air temperature (Summer and Winter) located within our exceptional **eQ Air Handling Unit** range. The ReCooler gives you a compact design that delivers an easy, low cost installation.

- **Eco Design** 2016 & 2018 compliant
- Simple “**plug-and-play**” installation
- Integrated heating and cooling recovery
- In Heat recovery the unit delivers a **COP** in excess of **10**
- In Cooling recovery the unit delivers a **SEER** in excess of **7**
- Piped, charged & tested before dispatch
- No separate condenser required
- Easily accessible for servicing
- Lower energy consumption



ENVIRONMENTAL  
ECONOMICAL  
EXPERTISE

**ReCooler® HP** integrated within our eQ range of Air Handling units offers total energy recovery with integrated DX cooling and heating. With our SEMCO sorption rotary heat exchanger which offers 'Best in Class' heating and cooling recovery, and with the addition of heat pump technology, we can enhance your overall energy efficiency - Fläkt Woods, your perfect partner in ventilation and energy saving!



[www.flaktwoods.ie](http://www.flaktwoods.ie)



# Alternative refrigerants, training, certification and the right equipment

**The new F-gas regulation No 517/2014 was adopted in April 2014 and came into force on 1 January 2015. The decision to ratify the regulation was a good decision. Good for the end user, good for the RACHP business, but mostly good for the environment, writes Per Jonasson, (pictured) President of AREA, the voice of European Air-Conditioning, Refrigeration and Heat Pump Contractors.**

an increase in decentralised system designs in supermarkets using plug-in display cases instead of traditional centralized DX ones. Also, we can expect indirect systems using secondary refrigerants to become more commonplace. The very popular VRF-technology has an interesting issue to deal with in this respect.

The natural pathway will also meet challenges linked to component design. Some of these will be similar to the synthetic ones, mainly for the hydrocarbons, but also unique ones like high pressure (carbon dioxide) and toxicity (ammonia). But these conditions are well-known, though mostly within more heavy-duty applications. The issue now is to transform this knowledge down to smaller more commercial systems. The big challenge for systems with natural refrigerants will be the development of system design and how to improve energy efficiency.

Environmental friendliness comes not only by the choice of refrigerant but in a much higher degree from the overall performance of the refrigeration system. For a traditional AC chiller as much as 90-95% of the GHG impact comes from the energy used to run the chiller, and how that energy is produced.

Therefore, nothing can be achieved by placing a chiller on the market with low GWP refrigerant but poor performance. Much has already been done in this area but I am totally convinced that there is a great deal more to come by way of clever system designs introducing new technologies, both within traditional refrigeration techniques as well as for controls, heat transfer and system integration.

The new regulation will, however, have a great influence on the whole RACHP industry for many years to come. As it is formulated, it actually will have a bigger impact on common people than was the case when phasing out CFCs in the 1980's and 1990's. This time anyone dealing with heat pump technology will also be affected. Well known best practices, refrigerants and system solutions will be challenged and will have to change or develop.

The timeframe for the transition from high GWP to low or zero GWP refrigerants is extremely tight. This calls for urgent actions in order to meet and fulfil the targets of the regulation, namely:

- Dissemination;
- Component and system development;
- Training and certification of competence.

## Dissemination

Dissemination of the F-gas regulation and its consequences is definitely the most important, but at the same time the most difficult, issue. The need for information is enormous and so are the number of stakeholders. In order to get the transition from high to low GWP refrigerants moving in the speed needed, everyone concerned must have knowledge of the regulation and the impact it will have on his/her specific business. This concerns everyone from design engineers through to manufacturers, contractors and end users, in addition to the involvement of national regulatory and standards bodies.

However, what we have seen so far is a somewhat laid-back attitude from agencies

in many countries. The necessary human and/or financial resources are not being allocated and you almost get the feeling that many have been taken by surprise at the overwhelming resources required. This, of course, is very unsatisfactory as it jeopardises our chance of meeting set goals, resulting in a failure that might backfire on the whole industry.

## Component and system development

The route away from high GWP refrigerants has two pathways – one synthetic and one natural. Challenges for the synthetic pathway will be similar to what have been experienced during previous refrigerant conversions. Namely, how to predict reliable and efficient running conditions, preserved lifetime on components, and tight and safe systems. Once again lubricant viscosity and miscibility, gasket tightness and hot gas temperatures will be checked and evaluated.

A new element though, compared to earlier conversions, is the fact that all low or zero GWP refrigerants are flammable. This will call for special efforts mainly on keeping the systems tight and by doing so keeping them safe. Low refrigerant charges will minimise the risk of leakage. We have already seen

The table below shows the respective properties of the low GWP refrigerants under consideration

Refrigerant	HFC	Natural	Natural		HFO
		HCs	Ammonia	CO <sub>2</sub>	1234yf
GWP (100 years)	XXXX R134a 1300 – R410A 1900	✓	✓✓ 0	✓✓ 1	✓ 4
Toxicity	✓✓	✓✓	XX	✓	✓✓
Flammability	✓✓	XX	X	✓✓	X
Materials	✓	✓	X	✓	✓
Pressure	✓	✓	✓	XX <sup>1</sup>	✓
Availability	✓✓	✓	✓	✓	XX
Familiarity	✓✓	✓	✓	X	X

Very poor XX Poor X Good ✓ Very Good ✓✓  
Source: F-gas support information Sheet - A/C alternatives  
Table taken from the guidelines showing respective properties of different low GWP refrigerants.



# The highest peak in chiller technology



The new Daikin water cooled chiller delivers the highest efficiency in its range. With its small footprint, low noise level and wide operation range, the VZ chiller can be used for a variety of applications. In addition to this, the VZ chiller is future ready, using the best refrigerant today and ready for the new refrigerants of tomorrow.



Find out more on [www.daikin.eu](http://www.daikin.eu)

Published by ARROW@TU Dublin, 2017

EWWD-VZ chiller series



**Training and certification of competence**

No targets set in the F-gas Regulation will be met if we do not have skilled people who know what they are doing. Therefore, all means and ways that secure and confirm correct skills in handling alternative refrigerants are crucial. So far no uniform certification scheme has been set on a European level. Instead, it is up to the individual member states, or their national business associations, to set their own rules.

The consequence is, as one could expect, that requirements vary greatly between individual countries. For instance, Germany and the Netherlands have detailed schemes for all types of natural refrigerants in place. However, in Sweden no requirements at all exist when it comes to personal certificates for working with ammonia, hydro carbons or carbon dioxide. Same goes for HFOs which are not included in the F-gas Regulation. This is totally unacceptable, both from a European market point of view, but even more from a personal technician safety point of view. The feeling is that it will take a long time before any clear structure is in place.

**What is AREA doing?**

Ever since the new F-gas Regulation was first discussed, AREA has been very active in the process of formulating a realistic, usable and understandable regulation. We have actively participated in hearings and stakeholder meetings, and we have supported and encouraged our national association members in their work. Considering the circumstances, I would say we have been rather successful in that work.

Members of AREA are RACHP contractors who design, install, service and maintain all types of refrigeration and heat pump systems. With the new regulation in place a great number of new or new/old refrigerants will enter the market. These include new A2L refrigerants, new/old carbon dioxide and ammonia and hydro carbons. None of these refrigerants are included in the Regulation 517/2014 and therefore are not regulated with regard to required skill, competence or safety.

As a consequence, in order to ensure the highest level of safety, reliability and energy efficiency when handling these new refrigerants, AREA has initiated, and is participating in, several activities related to personal competence and safety, as well as system efficiency and safety. A clear standpoint <https://arrow.tudublin.ie/bsn/vol56/iss1/1>

	HC	NH <sub>3</sub>	CO <sub>2</sub>
<b>BASIC THERMODYNAMICS AND PHYSICS</b>			
Thermodynamic properties of low GWP refrigerant: temperature, pressure, density, thermal capacity, p/h diagram	T	T	T
Differences between low GWP refrigerants and HFCs	T	T	T
Toxicity characteristics, grades and limits for the human body	-----	T	T
Characteristic of flammability of the substances, velocity of propagation, LFL, UFL, occupancy	T	T	-----
Specific components for that refrigerant in the refrigeration cycle	T	T	T
Material compatibility	-----	T	T <sup>3</sup>
Oil compatibility, requirements and oil return	T	T	T
<b>REGULATIONS AND STANDARDS</b>			
Knowledge of European and national regulations and standards	T	T	T
Storage of the refrigerant	T	T	T
Transport of the refrigerant	T	T	T
Describe the process for handing over system to customer, completing and passing on appropriate commissioning documentation <sup>6</sup>	P	P	P

*Part of table showing minimum requirements for listed modules on natural refrigerants.*

from AREA has always been neutrality towards different types of refrigerants. As long as a refrigerant is legal to use, high efficient and environmental friendly, we do not object to it being used. But, the use should always be done in a safe way. Safe for the technician who handles the gas, and safe for the surroundings where the equipment is placed.

As said earlier, dissemination is the most important issue. If people don't know, how can you expect them to act in a correct way?

To support our national member associations AREA has issued a number of position papers and guidelines. All can be found on our website <http://area-eur.be/publications>.

In this respect I would like to point out two guidelines specially relating to requirements linked to A2L and A3 refrigerants. First is our *Guidance on minimum requirements for contractors' training and certification*.

- This guideline has two main objectives:
- Set the general position of AREA on the use of low GWP refrigerants in RAC installations;
  - Set basic competence requirements for RACHP contractors dealing with low GWP refrigerants.

In the guideline you will find, for example, a technical comparison between different low GWP refrigerants. You will also find minimum requirements for training, as well as training recommendations for the same.

Secondly I want to mention a guideline released in April 2016 named *Equipment for refrigerants with lower (A2L) and higher (A3) flammability*. This is a hands-on guide for those working with flammable refrigerants giving

them a tool to understand the equipment that should be used when installing, commissioning and servicing refrigeration plants. The guide covers everything from tools and equipment to leak detection and evacuation, and safety procedures when doing service or recovery.

Last, but not least, I want to mention the REAL Alternative programme (part of the EU Leonardo life-long learning programme), a very successful blended learning programme now fully in place. REAL Alternatives is built on the REAL Skills Europe and REAL Zero containment approaches. (Refrigerants, Emissions and Leakage – Zero). The free multilingual learning materials were launched in 2015 and are now available for individual development or use as classroom training materials. They include e-learning content, electronic tools, and a comprehensive library gathered from existing resources. The e-library contains over 100 useful industry resources.

**Find out more**

*AREA (Air-conditioning and Refrigeration European Association) voices the interest of 22 national associations from 19 European countries, representing more than 13,000 companies, employing some 110,000 people and with an annual turnover approaching €23 billion. Find out more on <http://www.realalternatives.eu/AREA>.*

**Footnote**

This article first appeared in the international special issue 2016-2017 of Centro Studi Galileo, entitled: *"The Road to Competence in Future Green Technologies"*. ■

# Panasonic ECOi-EX Series sets new benchmark

Panasonic's latest line of VRF systems – the ECOi EX Series – provides a new benchmark for heating and cooling, surpassing other models in terms of environmental performance, quality and comfort.

**Features of the** new ECOi EX Series include:

- New design for top-class efficiency and extreme operation;
- High efficiency of 9.33 ESEER, and also excellent SCOP and SEER;
- Extreme operation from -25°C up to 52°C, and 100% at 43°C;
- New generation of high-performance twin rotary inverter compressors;
- More flexibility in design.

The Panasonic ECOi EX 7 Series ME2 VRF 2-pipe heat pump range includes three sizes of single outdoor units ranging from 8HP to 20HP. Boasting a flexible combination design, installers can combine units stepped to 80HP. The wide range of sizes means a comprehensive heating and cooling solution for almost any application, from small-scale commercial developments to large industrial facilities.

The innovative design of the Panasonic ECOi EX range makes it one of the most efficient performers of any inverter on the market, and features three joined surfaces that increase the capacity and efficiency of the heat exchanger. The redesigned fan bell mouth also contributes to the increased efficiency of the unit.

The new curved shape and

integrated top and bottom components ensure a smooth exhaust flow and greater air volume at the same sound level, with less power input required for the same air volume. Lower sound levels are important for all applications but particularly so in commercial and urban environments. The layout of piping inside the unit has also been optimised to ensure peak efficiency, increasing heat exchange performance by 5%.

The efficiency of the new ECOi EX Series means that the outdoor units can achieve market-leading performance in more extreme climate conditions. The units can operate at 100% cooling capacity at temperatures of 43°C, reaching cooling operation up to 52°C and, in heating, -25°C, while providing consistent indoor temperatures regardless of climate.

The extended piping length and design has helped increase the market applications available to the ECOi EX Series. Indoor units can be positioned

up to 200m from the outdoor unit which is a considerable increase on previous models. The indoor unit can now also be placed up to 50m below the outdoor unit.

The total piping length from one outdoor unit can now be up to 1,000m, offering complete flexibility to installers faced with a challenging or large-scale installation. The piping length has increased significantly from previous models, enabling Panasonic to provide their market-leading heating and cooling solution to a much wider range of applications, including larger commercial buildings.

There is also a unique 2-step "Intelligent Oil Management System" whereby sensors are installed on each compressor to monitor the precise oil levels, allowing oil recovery of up to 90%.

With regard to the indoor unit, Panasonic's advanced ECONAVI sensor detects human presence and adjusts the unit's output so that energy is not wasted heating or cooling the area when it is unoccupied. The Panasonic AC Smart Cloud allows businesses to centralise control of heating and cooling installations and, using a tablet, smart phone or computer, manage and schedule heating and cooling activities across entire networks of commercial buildings at unit level.

Part of Panasonic's core strategy is reducing the environmental impact of heating and cooling solutions. The ECOi EX Series is leading the way in this respect with an exceptionally high SCOP and EER value – even during part-load operation – and an ESEER rating of 9.33.

Contact: Vincent Mahony, National Account Manager, Panasonic Ireland. Tel: 087 – 969 4221; email: [vincent.mahony@eu-panasonic.com](mailto:vincent.mahony@eu-panasonic.com) ■



# Our products ...





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(for everything else, speak to our staff)

# Flakt Woods ReCooler HP – innovative ventilation, heating and cooling

The new and innovative ReCooler HP from Flakt Woods is the combination of a reversible heat pump unit and an energy recovery wheel in one unit.

Energy optimisation is an important aspect of ventilation solutions and Flakt Woods is committed to providing energy efficient air climate solutions to combine the best indoor climate with the best cost and energy efficiency, thus reducing the environmental impact.

**“Our research and** long experience has helped us identify the key parameters to designing optimal cooling and heating systems in buildings. These are energy efficiency, reliability and a small environmental footprint”, says Gavin Power, Sales Manager, Flakt Woods (Irl). “As a result of this knowledge and as a natural step in our e3 strategy, we have developed the new ReCooler HP (heat pump) as an integrated part of our eQ air handling unit range”.

The new and innovative ReCooler HP is the combination of a reversible heat pump unit and an energy recovery wheel in one unit ... bringing true benefits from design to operations. eQ with ReCooler HP is a complete plug-and-play air handling unit for ventilation, heating and cooling. Everything is included and factory-tested for a simple and reliable installation.

A traditional installation would include a condensing unit or a chiller and both of those solutions require



many hours of preparation and construction work on site (piping, concrete slab, etc). Often, a refrigeration specialist is required and, with multiple suppliers with differing responsibilities, more potential sources of failure are introduced. With the innovative ReCooler HP this is avoided.

Since the ReCooler HP is designed from the outset to be fitted as an integral part in eQ AHUs, the installation is very quick with no need for any plumbing work. The overall footprint is also very small with no need for a chiller or heater.

Compared with a standard unit with rotary heat exchanger, the ReCooler HP adds just 900mm –1100mm to the length of the eQ air handling unit since the rotor is already integrated within the ReCooler. For ease of installation it can be delivered in a split version.

Being part of the eQ range of air handling units, the ReCooler HP offers total energy recovery with integrated DX cooling and heating. The unit comprises a RegAsorption rotary heat exchanger offering “best-in-class” energy recovery.

During summer, the rotor recovers both sensible and latent energy in order

to minimise the cost of the additional cooling required to meet specified comfort conditions. During the winter, the rotor offers excellent heat and humidity recovery to ensure maximum energy efficiency and comfort. The unique design of the RegAsorp rotor makes it much less susceptible to freezing compared to traditional rotors.

While the rotary heat exchanger recovers much of the energy required, depending on weather conditions additional heating can be needed during the winter. To provide that heating the ReCooler HP uniquely has a built-in heat pump to take full advantage of energy efficient heating and to reduce the carbon footprint.

“Our new ReCooler HP is a unique ventilation and heating solution”, concludes Gavin Power”, presented in an innovative, energy efficient unit that has a small footprint and delivers reliable performance excellence. It is the future now”.

Contact: Gavin Power,  
Sales Manager, Flakt Woods.  
Tel: 01 – 463 4600; 086 – 826 3058;  
gavin.power@flaktwoods.com ■

# Mitsubishi Electric Hybrid VRF Systems

## *Making a world of difference*

Today's buildings face tough legislation which means that traditional HVAC technologies may not always be the best solution. That is why Mitsubishi Electric developed the Hybrid VRF, a unique way of combining the best elements of VRF technology and chiller systems to offer a truly integrated solution for both now and into the future.

**Hybrid VRF** is the latest addition to the City Multi family, Mitsubishi Electric's VRF range of air conditioning units for large scale applications. Built and assembled in the same factory as its VRF units, it carries the distinctive VRF DNA in terms of technology, efficiency and reliability.

Hybrid VRF is a 2-pipe heat recovery VRF with water between the Hybrid

Branch Controller (HBC) and indoor units. It can be installed and operated as a VRF while enjoying the features of a chiller system. It provides a complete modern solution for office buildings, hotels, medical centres, schools, high rise buildings, shopping centres and other commercial premises.

Hybrid VRF is quick, easy and flexible to design and install using

the same control and network as VRF systems. Furthermore, the decentralised system means phased installation is possible with the same high levels of seasonal efficiency expected with VRF.

With water at the indoor units, Hybrid VRF provides comfortable and stable air temperature control with no refrigerant in occupied spaces, meaning simple compliance to BS EN378. It also removes the need for leak detection.

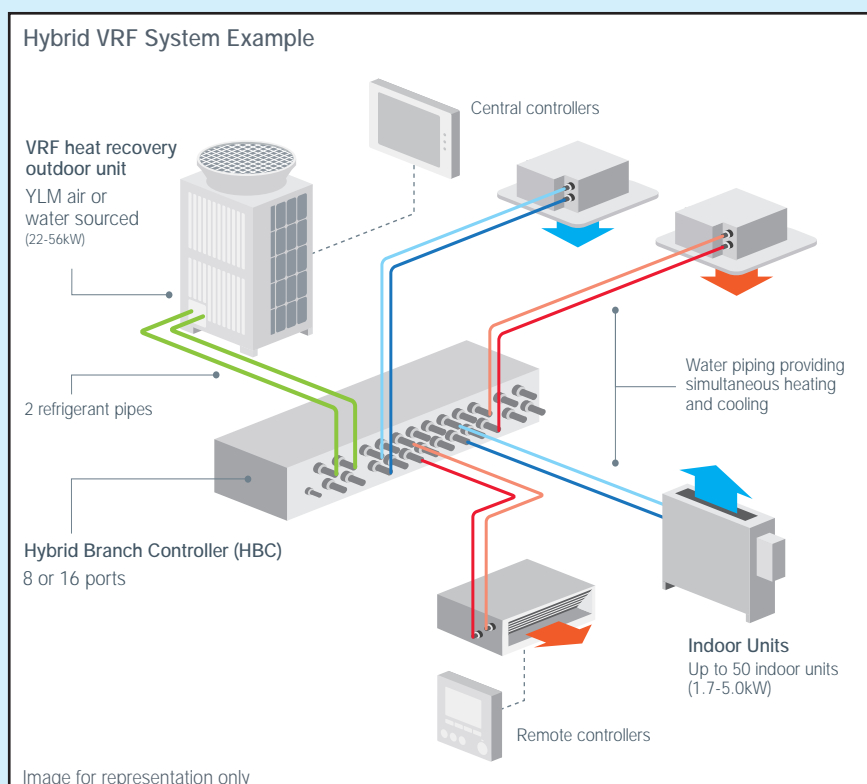
The Hybrid Branch Controller (HBC) lies at the heart of the Hybrid VRF and incorporates three key elements – plate heat exchangers, pumps and valve block. Details are as follows:

**Plate heat exchangers** – This is the point where the refrigerant circuit transfers its energy to the sealed water system. There are two sets of plate heat exchangers, both placed at opposite ends in the HBC box. Both sets provide hot water in heating mode or cold water in cooling mode. During mixed mode, one set provides hot water while the other provides cold water to its respective flow header.

**Pumps** – Each set of plate heat exchangers has a DC inverter-driven water pump. This circulates the closed loop water system between the HBC and indoor units. The discharge flow rate from the pump is controlled by the valve block.

**Valve block** – A valve block is connected between each flow and return port of the HBC. This valve block has two features. Firstly, it has the choice of selecting between the two flow headers, and secondly, it controls the flow of the water sent to the indoor unit, defining the capacity.

Contact: Mitsubishi Electric.  
Tel: 01 – 419 8800;  
email:sales.info@meir.mee.com;  
www.mitsubishielectric.ie ■





# S&P Ireland for the complete range of fans and grilles

S&P Ireland Ventilation Systems Ltd is the Irish subsidiary of the Soler & Palau Group of companies, one of the world's market leaders in ventilation solutions.

Established in 1972, S&P Ireland brings the vast product portfolio and technical expertise of its parent group to bear when devising ventilation solutions for the Irish marketplace. Applications covered are comprehensive and include domestic, commercial, industrial and process ventilation equipment.

The team at Soler and Palau has over 40 year's experience in the ventilation business and provides professional and technical advice on choosing the optimum ventilation solution for all project applications.

S&P ... combining R&D, technology and design to deliver ventilation excellence.

Inline fans with matching filters and electric heater batteries



Kitchen extract fans up to 400drgr C



Polypropylene plastic fans where corrosive fumes are an issue



Electric heater battery and filter

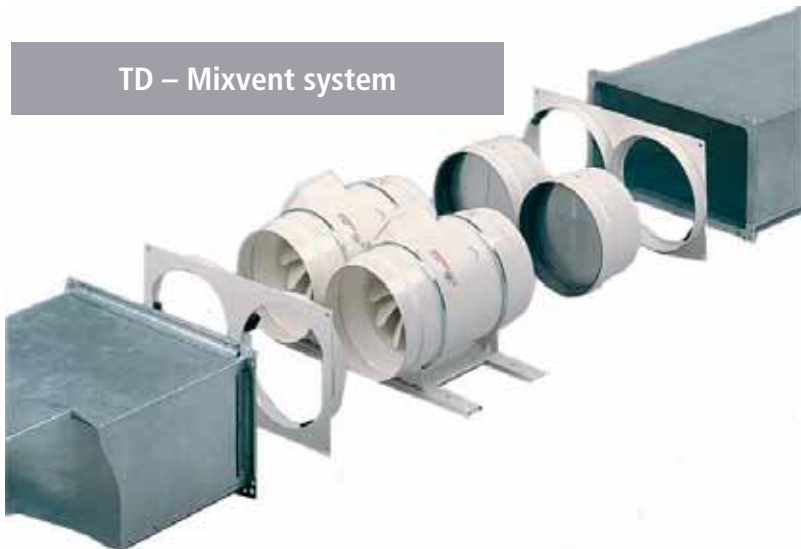
Madel air diffusion



ATEX explosion-proof fans



TD – Mixvent system



Waterloo Aircell Grilles



Madel grilles swirls and play diffuser and chilled beams



S&P flexible ducting and fire rated toilet valves





# Daikin achieves the highest peak in chiller technology

The new water-cooled EWWD-VZ high-efficiency chiller range from Daikin offers the highest ESEER ratings in its class, minimising running costs and CO<sub>2</sub> emissions, to make it the most efficient in the market. Its introduction is the latest range of innovative products developed by Daikin to help specifiers and end-users stay ahead of EU legislation and rising energy costs. It is future-proofed to comply with existing design and regulatory standards as well as longer-term EU energy goals.

**The extremely compact VZ** chiller series represents a 40% reduction in footprint and offers a low-noise solution with outstanding flexibility to match any specific application. The advanced design delivers perfect balance, achieving high cooling capacity with reduced power inputs. It is especially efficient while running at part load, typically 97% of the operating time. Operating up to 15% more efficiently than other systems on the market, the new chiller achieves an EER of 5.7 at full load, with an ESEER of up to 8.3 at part load.

With the EU low carbon roadmap now targeting an 80% reduction in CO<sub>2</sub> emissions by 2050 and F-Gas legislation

driving a reduction in direct emissions, there is more demand than ever for high efficiency HVAC systems that reduce consumption in use. With up to 50% of building energy usage accounted for by HVAC equipment, the new VZ can help boost the environmental credentials of buildings to achieve a high BREEAM or LEED score with lower running costs, making assets more attractive to building owners and tenants.

The new chiller's unique design uses a Daikin single-screw compressor with inverter technology and a high-efficiency flooded-type heat exchanger that offers a 60% improvement in heat transfer

compared to previous chiller series.

Capacities have also been extended with single compressor models from 450kW to 1,100kW and the larger dual compressor dual-circuit models with an output between 1,200kW to 2,100kW at nominal Eurovent conditions.

The VZ's width has been reduced to the minimum levels thanks to a unique design with new single-pass counter-flow condenser and an oil separator integrated into the condenser shell. The slimline design of the unit is also available with an optional knockdown panel, making it ideal for installations where access is through doorways.

The new chiller boasts the widest operating conditions in its range, offering not only cooling but hot water production up to 65°C. Its unique design incorporates Daikin Variable Volume Ratio (VVR) technology, which optimises unit performances by adjusting the discharge pressure of the compressor to the condensing pressure. No under or over-compression phenomena (common in traditional compressors) are experienced, thus efficiency losses are reduced to minimum.

Suitable for use even in noise-sensitive environments, a high performance sound-proof compressor cabinet option offers noise levels as low as 81 dBA at full load and 66 dBA at part load at a distance of one metre. With active harmonic filtration and an automatic transfer switch to a back-up generator, the new chiller series offers a comprehensive solution for data centre applications.

Enabled for operation via the Daikin On Site platform, the VZ can be monitored remotely, allowing the system to be accessed with one click for system optimisation and preventative maintenance.

## Return on investment

With an environmental profile that outperforms the market and delivering outstanding versatility, the new chiller also delivers on cost-effectiveness, as well as innovation. If compared to a traditional non-inverter product, the Daikin VZ can achieve a 25% reduction in running costs with return of investment in less than two years.

Contact: Daikin Ireland.

Tel: 01 – 642 3430; [www.daikin.ie](http://www.daikin.ie) ■



Daikin EWWD-VZ single compressor

# New FDT Series from MHI features unique draught prevention control



The new FDT Series of indoor ceiling-mounted units from MHI incorporates a host of innovative features and is ideal for commercial applications such as offices, retail outlets, restaurants, bars and large open-plan areas or irregular-shaped rooms. One of the most notable features is the unique flexible flap control for draught prevention. This is an industry first whereby the movable, individually-controlled flaps suppress the uncomfortable draughts typically felt when air blows directly on a person during either cooling or heating mode.

**The additional flap** can be extended and directs the air away horizontally. This reduces the feeling of draughts dramatically and increases comfort for users. There are also a number of flexible installation options available, with typical “mix and match” examples being as follows:

- If you have two cassettes on one outdoor unit, one unit can be fitted with the standard panel and the second unit with the draught prevention panel;



The “eco-touch” remote control unit is the first of its kind to feature a touch panel.

- Individual flap control on the draught prevention panel is possible. For example, three flaps can have the additional flap extended and can have the standard configuration without the additional flap.

The FDT Series units can also be equipped with a motion sensor that detects human movement and automatically controls the temperature setting. This function prevents excessive cooling or heating, automatically shuts down when no one is present, and automatically starts up again when the person returns. Together these capabilities help save on power consumption.

New changes have also been made to the “eco-touch” remote control unit, the first of its kind to feature a touch panel. The upgraded units adopt a new, brighter liquid-crystal touch panel, and a power consumption display feature has been added that enables the user to determine how much energy has been consumed, i.e. saved.

The advanced capabilities of the FDT Series have been universally acknowledged and just recently received the coveted Good Design Award, Japan’s only comprehensive design evaluation and recommendation initiative. This is not just a Japanese but a global design award with participation from companies and organisations from all over the world.

Other features and benefits of the new FDT Series include:

- 20% lift increase of condensate lift pump;
- New fan motor in FDT indoor unit to reduce indoor unit noise level;
- Easier access for maintenance;
- MHI touch-screen remote controller has also been updated with new software to facilitate new functions.

Contact: Michael Clancy (087 – 262 0701) or Graham McCann (087 – 950 9402), Diamond Air Conditioning. Tel: 01 – 636 3131; email: [info@diamondair.ie](mailto:info@diamondair.ie); [www.diamondair.ie](http://www.diamondair.ie)

# CIBSE Ireland Annual lunch is networking event of the industry

With an attendance of 550 and having had to turn away many others because of capacity limitations, the 2016 CIBSE Annual Lunch held just before Christmas proved yet again that it is by far the single most important networking occasion in the building services calendar.

Tickets sold out within days of being made available and those wishing to attend this year's event should keep a close eye on the CIBSE Ireland website over the coming months to guarantee their place.

Jones Engineering sponsored the pre-lunch drinks reception where hip three-piece band "Take 3" entertained the crowd. The formalities kicked off just after one with Chairman Brian West addressing and welcoming the attendance, followed by Nick Meed, CIBSE President (2015) who travelled from London for the occasion. Nick and Brian then presented three CIBSE Bronze Medals – one each to Bill Noone, Edward Heavey



Nick Mead, immediate Past-President, CIBSE with Frank Caul, Chairman, ASHRAE Ireland; Brian West, Chairman, CIBSE Ireland and Jim O'Sullivan, Assistant Chief Engineer, Mechanical & Electrical, OPW.



Master of Ceremonies Alan Shortt with Barry Steele, Jones Engineering.



Claire Shiels from the LauraLynn Childrens' Hospice receiving the cheque for €9320 from Brian West, Chairman, CIBSE Ireland.

<https://arrow.tudublin.ie/bsn/vol56/iss1/1>



The newly-formed Lighting Association Ireland had a table at the lunch and among the members attending were, back row: Gavin Edwards, Thorn; Mark Kelly, Philips; Stevie Young, LEDVANCE; Declan Hanratty, ECI; Pat Tully, Lidicel and Paul Noonan, Switch.

Front row: Gabriel Byrne, Fantasy Lights Group and LAI Chairman; Brian West, CIBSE Ireland Chairman; Sean Downey, CIF and EIFI President; and Nicholas Moran, General Lighting.

# C&F Quadrant presents Glow-worm and Vaillant with extended warranty

[www.cfquadrant.ie](http://www.cfquadrant.ie)



Vaillant and Glowworm domestic gas boilers now come with 5-year warranty as standard with the option to upgrade to a 10-year warranty.



Contact C&F Quadrant for further details.

## Glow•worm

The energy you need

The Glow-worm Energy System boiler from C&F Quadrant is a high-quality, high-efficiency boiler made from automotive grade aluminium that makes it very easy to handle and install.



Incorporating a high-quality aluminium heat exchanger, the Energy System boiler has a modern high-impact design suited to modern homes and comes with a bright, easy-to-read, LCD display, a smart timeless case design and super-quiet running.

Energy System boiler is ErP A rated and comes in an extensive range of outputs for various applications, including 12kW, 15kW, 18kW, 25kW and 30kW models.



The new generation Vaillant ecoTEC appliances are more efficient, and durable than ever before and are so compact that they fit in the smallest niche. They provide single and multi-family houses with central



heating and hot water at all times. Vaillant ecoTEC uses an electronic gas-air mix system and operates with optimum modulation. This reduces energy consumption and emissions, and also increases the efficiency of water heating. The integral condensation

heat exchanger and the new high-efficiency pumps provide additional energy savings. Output versions of 20/24kW, 25/30kW and 30/34kW as a mixed unit for heating and generation of domestic hot water are available, and of 16, 24kW and 38kW as a system boiler for heating only.



### C&F Quadrant Ltd.

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Cherry Orchard Industrial Estate, Dublin 10  
Tel: +353-1-630 5757 Fax: +353-1-630 5715  
Email: [sales@cfquadrant.ie](mailto:sales@cfquadrant.ie)



Edward Heavey (above left), Bill Noone (above right) and Liam Kavanagh (left) each received a CIBSE Bronze Medal for their service and contribution to CIBSE over many years. The awards were presented by Nick Mead, immediate Past-President, CIBSE and Brian West, Chairman, CIBSE Ireland.

and Liam Kavanagh – for their service and contribution to CIBSE over many years.

After the main course the audience was treated to a demonstration from “Francis Brennan” when three “volunteers” from the audience were led to the stage to demonstrate the “The Park Hotel Quilt Challenge”. In keeping with the spirit of the event the winner took home the main prize of a blender, while a wooden spoon and whisk was awarded to the runner-ups.

Apart from the networking and fun, the CIBSE Ireland lunch has traditionally raised funds for a nominated charity. Once again it was LauraLynn, the south county Dublin-based hospice for children. CIBSE Ireland contributed €2,000 to start the count with the attendance donating a further €7,320 in cash collected on the day. This made for a total donation of €9,320. Claire Sheils from LauraLynn accepted the donation. The CIBSE Ireland Committee would like to acknowledge and thank everyone for their donation. Final figure and receipt will be posted online shortly.

The event was drawn to a close when Master of Ceremonies, Alan Shortt went into the crowd looking for carol singers. While most of the crowd were out of key, he did find Paul Gough who broke into a song and was quickly supported by three others. The foursome made their way to stage and “4 in a Bar” entertained the audience before Alan brought things to a close.

As is now customary, everyone adjourned to the bar in the hotel for further networking and socialising into the early hours of the morning. ■

<https://arrow.tudublin.ie/bsn/vol56/iss1/1>

# SDAR Journal 2016 Launch

The print and online edition of the *SDAR Journal* 2016 was officially unveiled at a ceremony held recently in the new DIT Grangegorman complex in Dublin. This journal is a joint collaboration between DIT and CIBSE Ireland, the objective being to promote sustainable design and applied research in engineering in the built environment, and to publish and disseminate the findings of this research in print format and online.

Over 5,000 full-paper downloads from over 60 countries throughout the world are recorded each year on the *SDAR Journal* site, and a unique world map on the home page shows live downloads as they occur.

In addition, 2,000 copies of the journal are distributed to CIBSE Ireland members and all other building services-related professionals as an insert with *Building Services News*.

The intention of the journal is to offer a first publish opportunity to industry engineers and new researchers who are developing or applying sustainable systems in engineering and the built environment. A blind peer review process of evidence-based applied research or post-occupancy evaluations is provided free. There is no publishing fee.

Abstracts for papers for SDAR 2017 are now invited.

See also: <http://arrow.dit.ie/sdar/>



SDAR Journal 2016 authors and editorial team – Back row: Kevin Gaughan and Kevin Kelly, DIT with Daniel Coyle, Daniel Coyle Architects; Dervilla Niall, DIT; Joseph Little, Joseph Little Architects; and Pat Lehane, CIBSE Ireland and *Building Services News*. Front Row: Brian West, Chairman, CIBSE Ireland with Yvonne Desmond, DIT and Professor Brian Norton, President, DIT.

# Evaporative cooling app from Condair

**Condair, formerly JS Humidifiers, has developed a new app that accurately determines how much energy could be saved by using in-duct exhaust air evaporative cooling and a heat recovery system, rather than just traditional compressor-driven cooling.**

Using worldwide weather data from Meeonorm, the myCoolblue app calculates how much energy is needed annually to cool a building. Then, taking into account 10 years of historic weather data from over 300 regions worldwide, the app projects how much cooling each month could be delivered using exhaust air evaporative cooling and how much would still need to be delivered using traditional mechanical cooling.

Exhaust air evaporative cooling uses an adiabatic humidifier to cool the return air from a room and a heat recovery unit to transfer the cool thermal energy to the incoming fresh air stream. The technique can provide several degrees of cooling from just a few kilowatts of electricity, reducing a building's energy bills and carbon footprint.

By assessing how much of a building's cooling can be delivered with exhaust air cooling, a HVAC consultant or AHU designer can accurately calculate the viability of an in-duct evaporative cooling system and show its return on investment potential.

For instance, Condair's myCoolblue app shows that for a building in Dublin needing to maintain an internal condition of 23°C during normal office hours, with 3m x 3m AHU and airflow of 2.6m<sup>3</sup>/s, an exhaust air evaporative cooling system could deliver 67% of the required cooling. This is taking the 10-year historic weather conditions for Dublin in an average year.

The app gives energy projections for hot or average summer conditions and takes into account a comprehensive set of variables to provide an accurate calculation for any project. These variables include the type and efficiency of the heat recovery unit being employed, the location of the fans and the humidifier configuration inside the AHU, alongside the actual design conditions and operating parameters of the AHU itself.

A chart showing the monthly breakdown in kWh between mechanical and evaporative cooling is presented, along with a diagram of the system configuration and the temperature course supply/exhaust chart. Project details and calculations can be saved to the cloud and accessed later. An email option also allows reports with all the project parameters to be emailed in pdf format for future reference.

Condair's myCoolblue app can be downloaded from the App Store for free and is available for iPad only.

Contact: Damien Power, Condair Area Sales Manager for Ireland. Tel: 091 507 120; 0044 7802 669819; email: damien.power@condair.com; www.condair.co.uk. ■



# Why an air source heat pump for home heating? asks Paul Kenny



Paul Kenny, Chief Executive Officer, Tipperary Energy Agency.

**Over the course** of the last two years the Tipperary Energy Agency (a non-profit organisation) has been retrofitting houses with air source heat pumps (ASHP) with great success under the Superhomes programme funded by SEAI's better energy programme. It has been supporting homeowners and housing agencies retrofitting homes since 2004, and we had come to the conclusion on reading the data from the EU SERVE project (retrofitted 350 homes from d2 to b3) that the retrofit was not deep enough and the homes still relied on too much fossil fuel to reduce costs sufficiently for householders or allow Ireland reach our climate targets.

However, based on the heat road map for Europe that shows heat pumps are a core technology for decarbonising heat, and considering that 20% of Swedish homes are heated by heat pumps, it is clear that heat pump technology works, even in cold climates. This view is endorsed by many industry experts.

So, why should someone install an air source heat pump to heat their home, and what are the key considerations? There are three reasons – cost, comfort and the environment.

First of all, I'd like to dispel some myths:

- Heat pumps (the majority of the Irish market players use R410a) work down to minus 20°C;
- Ireland isn't that cold, with average winter temperatures of 7°C and the mean daily minimum above 2°C all year round;
- Heat pumps work really well at 7°C air temperature and 35°C flow temperature (typically COP of 4.5 in the lab, and over 4 in real world applications);
- There is no need for a back-up

immersion or boiler. We do generally ensure a high-efficiency stove is installed in our retrofitted buildings, but we find most people don't use them with cheap even heat from the heat pump;

- Radiators are not radiators, they are really convectors, and they put out heat at all temperatures above the room temperature they are located in. So, if the boiler used to run for six hours and now runs for 24 hours, the flow temperature versus room temperature can come down by 75%, eg 60°C to 30°C (room at 20°C);
- Heat pumps can heat water to 55°C, and a top-up heating cycle using an existing immersion heater for legionella control uses a few kWh per annum when required.

The methodology employed by Superhomes is to design and install ASHPs into radiators that are oversized in comparison to typical radiators, i.e. low-temperature radiators. This allows a higher heat output at lower flow and return temperature. The design of the emitters allows the heat pump run at about 31°C, 27°C return at 7°C external temperature. The heat pumps are commissioned to be "always on", thereby maintaining a steady indoor temperature at the desired set point.

Therefore, the heat pump only needs to replace the energy that is lost from the building fabric – typically 2-3 kW at 7°C. The resultant impact on the heat pump is that the required output per radiator is generally only 150-300w and minimises the flow temperature (maximising efficiency), resulting in typical heating (not hot water) performance of between 3.3 and 3.6 average co-efficient of performance throughout the heating season (see Figure 1).

Using an average delivered energy cost of 11c/kWh (40% night and 60% day rate, *bonkers.ie 14/01/17*), this delivers heat at a little over 3.1c/kWh. Compare this to natural gas (86% efficiency and standing charge €92 split of 15MWh) of

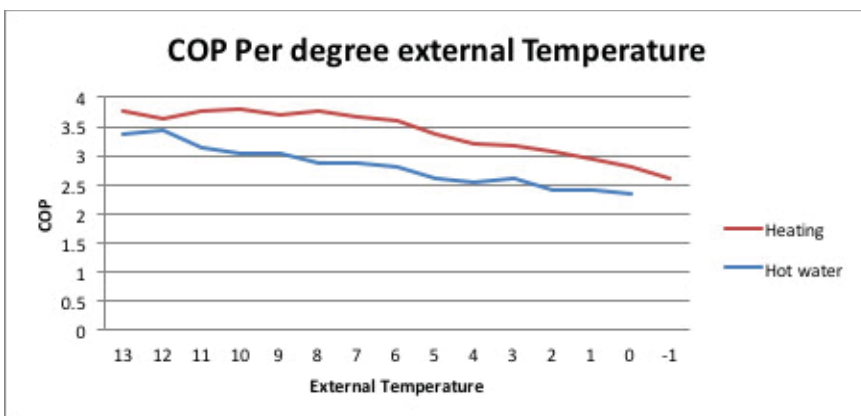


Figure 1.

6.4c/kWh, and oil (59c/l) at 9.2c/kWh delivered into the house. The ongoing heat cost is one third of oil and half that of gas. For those knowledgeable in energy price predictions, the likelihood of oil and gas rising versus electricity is likely to continue.

Hot water heating cycles typically rise from 30°C flow temperature to 58-60°C flow temperature and do have a lower co-efficient of performance than heating, typically about 2.4-2.6 over a season. This, usually completed at night for the bulk of heating (80% night (6.6c), 20% day (14c)) results in a net heat cost of 3.25c/kWh, similar to heating, and similar margins below the alternate fossil fuels.

In conjunction with the installation of an air source heat pump, and steady interior temperatures, air leakage must be reduced, ideally to an air change rate of 3-5 air changes per hour under 50 pascals of pressure, corresponding to an average rate of 0.15-0.25 air changes from infiltration in typical conditions. Once this is achieved a designed ventilation system must be used. In the case of Superhomes, demand control ventilation is employed. This designed mechanical extract system ensures a steady, low and controlled flow of fresh air into the dwelling.

The impact of this commissioning to maintain a constant temperature in the dwelling has a number of "symptoms". Steady air temperatures encourage walls to rise to a more even higher temperature, thereby lowering the radiative heat loss from people to surrounding surfaces and adding to the feeling of comfort. This also increases the interior temperature at thermal bridges, thereby increasing the dew point of condensation, and lowering the likelihood of condensation, mould and

**The carbon performance of homes utilising heat pumps versus oil and gas should be understood in the context of steadily-decreasing carbon content of electricity.**

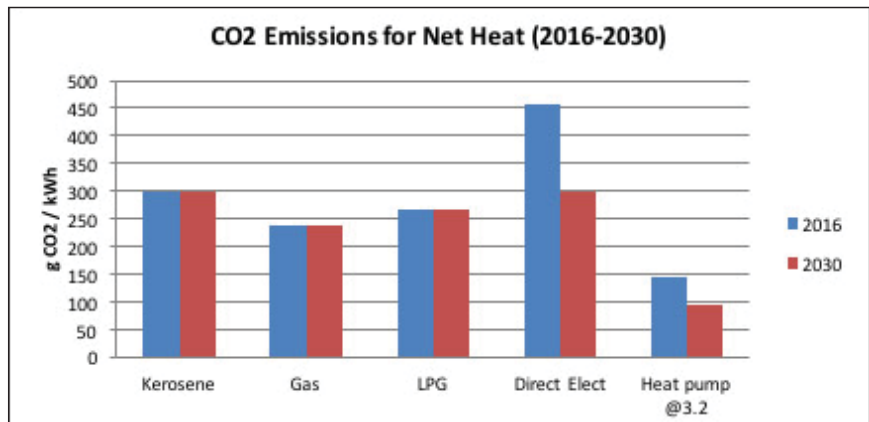


Figure 2.

ill health. Coupled with the ventilation system, almost all the surveyed participants in Superhomes report that they have noticed a significant reduction in condensation.

Finally, the carbon performance of homes utilising heat pumps versus oil and gas should be understood in the context of steadily-decreasing carbon content of electricity. It is currently 467g CO2/kWh of electricity, 205 for natural gas, 257 for kerosene, 229 for LPG. Forecasting this to 2030, it is, in the absence of peat and coal thermal plants and with increasing renewable electricity, likely to be below 300g/kWh CO2 (see Figure 2). Utilising an average heating and hot water COP of 3.2 (this is being achieved on an annual basis in Superhomes houses) we can see that the carbon per net kWh of heat from a heat pump will be 145 in 2016 and 90g/kWh in 2030, versus natural gas (86% efficient boiler) at 238, and 266 and 299 for LPG and kerosene heating oil respectively. So, this equates to a 39% and 58% cut today per net kWh and a 60-70% cut by 2030.

Without getting too technical, this also puts the carbon emissions of the individual houses into the European emissions trading scheme, which moves them from the state's carbon balance sheet and also, in theory, in

a cap and trade marketplace, pushes out higher polluting carbon-intensive electricity sources.

In a new build situation, the marginal cost of installing a heat pump, appropriate cylinder and potentially larger radiators versus gas + connection or oil + tank is likely to be similar in cost to that of the photovoltaics required with the gas or oil boiler for compliance with Part L of the Building Regulations. The savings will ensure that even outside of compliance, investment will be returned in the first three to five years at worst. The insulation or buffering from energy price increases is also worth some peace of mind.

In terms of retrofit, the economic case is slightly less generous. The catch is that the cost of a retrofit of this nature – including the airtightness measures, the ventilation system and the heat pump – is unlikely to be less than €15,000. Over the next 20 years this is about €3.75 per heating day, gobbling up about 50%-70% of the savings. If we take energy price inflation into account, using the last 15 years as an indication of the next 15, this is likely to break even in 10 to 12 years. A 35% SEAI grant, available within the Superhomes programme, will bring this to seven to ten years.

So, economically home-owners will not win or lose in the short-term, but environmentally and from a comfort point of view, they will be significantly better off, as will their children going forward. ■



# Frequently asked installer questions

The HVAC industry is ever-growing and ever-evolving and, as a result, even the most seasoned of installers find themselves with technical queries or questions surrounding changes in legislation. Paul Clancy, Managing Director at Baxi Potterton Myson (pictured), reveals the most frequently asked questions at its 15 training centres across the UK and Ireland.

## What is The Ecodesign Directive (ErP) and how does it affect me as an installer?

The Ecodesign Directive (referred to as ErP) is European legislation aimed at improving the energy savings of products that use energy, or have an indirect impact on energy consumption. ErP is split into two sections, both of which installers must take into consideration. Firstly, the Ecodesign Directive will mean space heaters that haven't met efficiency requirements can no longer be placed into the supply chain by manufacturers. Secondly, the Energy Labelling Directive will mean all affected products must come with an efficiency rating and label, from A to G. Installers now

have to provide an energy label for any boiler installed, as well as a "package label" for the system if several components are installed, but in principle it's a simple task that should only take an extra ten minutes.

There are many resources available to support installers. At Baxi Potterton Myson, for example, we have an ErP toolkit which includes an ErP calculator for producing package labels, frequently asked questions and information packs, all of which are hosted on a dedicated section of our website. We also run a dedicated technical helpline to field ErP-specific queries.

## Using a multimeter, how can I test electrical components to discern whether or not they are faulty?

An electrical test multimeter can be used in several ways to determine whether components are faulty. Depending on the item in question, an installer can conduct tests for ohms resistance, voltage and continuity to discern any malfunctions.

If testing a working component, for example an AC fan, pump or diverter valve motor, then a resistance check can show if the component coil is functioning correctly and a voltage test will show if power is being supplied to the part.

Meanwhile, if testing a switch, e.g. air pressure switch, low-pressure switch or water flow switch, then a continuity check will show if the module is open or closed circuit.

Equally, if testing a part that communicates an electrical value such as a thermistor, hall effect sensor or pressure sensor, then a resistance check or low voltage test will show if the component is operating properly.

## How do I perform a flue integrity test using my flue gas analyser (FGA)?

In order to conduct a flue integrity test, first ensure the boiler is running at the maximum gas rate, and then allow adequate time for the combustion to equalise – this will typically take about 10 minutes. Insert the analyser probe into the air inlet test point and wait for the reading shown on the FGA to stabilise. The oxygen content within the incoming air for combustion should be at least 20.6% and the carbon dioxide content should not exceed 0.2%. If the flue integrity test fails, then all flue components should be checked for condition, assembly and installation requirements.





**There is always value in asking questions and learning something new**

### **Are there different plume kit options? Where can they be used?**

In instances where the flue gas plume trail from a condensing boiler is an issue, there are options available to resolve the situation. The simplest choice is a plume deflector which fits directly on to the flue terminal. When pushed on to the terminal, the deflector can then be pointed to direct the angle of plume away from the nuisance area. Once correctly aligned, the plume deflector is then securely screwed in position.

If a deflector does not solve the problem, then a plume displacement kit can be used. This comprises a terminal replacement section on to which a plume displacement pipe can be fitted, allowing the pipe to be run to a suitable position where the plume can be safely discharged away, avoiding any problem locations. As with all flue termination positions it should be sited in accordance with BS 5440 Part 1.

### **Conclusion**

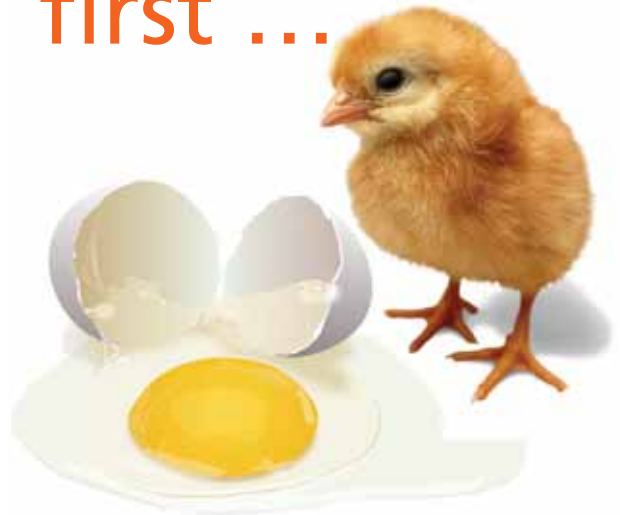
Subjects such as these are commonly discussed during our manufacturer training days, and are often combined with hands-on, practical demonstrations for attendees to really get stuck into. At Baxi Potterton Myson, our vast range of courses, from free to paid to accredited, are led by expert trainers with gas and heating backgrounds.

So whether an installer is just starting out in his/her career, or whether they have been on the tools for a number of years, there is always value in asking questions and learning something new.

Contact: <http://www.baxipottertonmyson.ie/> ■

Published by ARROW@TU Dublin, 2017

# We know what comes first ...



At *Building Services News* we know what comes first ... it is the product and/or system you have designed and developed for the building services sector. However, having done so, you now need to convey its benefits and areas of application to the key decision-makers in the marketplace. That's where *Building Services News* comes in ... whether the egg or the chicken came first is immaterial, it's what comes home to roost that matters.

*Building Services News* delivers results.

# **Building Services**news

***buildingservicesnews.com***



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Facebook

# The World of Facilities Management Training is changing!

**Early last year Pat Gaughan embarked on the next phase of his career by setting up the facilities management training and consultancy company called Advanced Workplace Solutions. Pat has been involved in the facilities management world for quite some time, with over 25 years' experience working at senior management level for such organisations as CBRE, Aviva, Eurostar, Bilfinger and Virgin Media. He has racked up this experience in nearly 30 countries from working in Red Square in Moscow, Russia to Table Mountain in Cape Town, South Africa and everywhere else in between.**



**When *Building Services News* caught up with Pat recently we put the obvious question to him as to why he embarked on such a change. The answer is an easy one, he said. "The facilities management profession in Ireland has long suffered from a lack of training in the practicalities of facilities management, where the skills learnt could be put into immediate day-to-day practice".**

Indeed, Pat's involvement in instigating change in facilities management in Ireland is not a recent one. Back in 2014 he set up the first international Region of BIFM (British Institute of Facilities Management) when he founded the Dublin Branch along with a group of like-minded professionals. The Dublin branch works closely with one based in Belfast and together they form the only facilities management organisation which operates throughout the island of Ireland.

At its inception, there were approximately 200 members. Today there are over 500 members, a number that is growing rapidly. BIFM Ireland has been responsible for two highly-successful conferences/exhibitions – the FM Summit – in 2015 and 2016 and held in the Aviva Stadium and Croke Park respectively. Pat has been the Chair of the Dublin BIFM Branch and was elected Chair of BIFM Ireland in 2015.

Here, *Building Services News* editor Pat Lehane puts a series of questions to Pat Gaughan and the answers provide some stimulating ideas and interesting views.

**PL: So, in relation to FM training, what makes advanced workplace solutions so unique?**

**PG:** Well, what we offer are short-term training courses over a one or two-day period. The great advantage of this is that it

reduces the amount of time the trainees are away from the business and enables them to start applying their new-found skills and knowledge immediately.

The courses are delivered in such a way as to actively involve the delegates in participation in the course. This is done through workshops, discussion, multimedia and tutoring. All in all, it gets the participant to be part of the course as much as the tutor, and certainly makes it more interesting and relevant.

Myself and my team of tutors draw on our wealth of experience in having delivered FM both locally and internationally to ensure that those attending the courses are able to take away practical and real-life examples of situations that attendees can easily relate to in their own circumstances.

While there are a wide range of long-term academic courses available in many third-level institutions, none offer the short and snappy practical advice that we look to deliver. This is what sets us apart from all the other educational offerings in FM.

#### **PL: So why has this type of training not been done before?**

**PG:** Good question, and really it's down to a variety of reasons. Facilities management, although it has been in existence in Ireland for at least the last 20 years, has tended to fly under the radar. More often than not it was placed under the broad heading of property management and not fully recognised in its own right until more recently.

Furthermore, in the Celtic Tiger era, FM was seen to be more of a cost savings discipline and still a Cinderella in the professional world with little inclination from organisations to invest in training for their facilities staff. Towards the end of the Celtic Tiger era we started to see development and growth within FM but the hard landing the country suffered meant that training as a whole took a severe downturn.

The third reason is that entry into facilities management has been more through default than design. FMs, heretofore, have arrived in facilities management without formal qualifications and there has been an attitude among companies that "learning on the job" was sufficient.

## **‘Ireland is now attracting the type of multi-national companies that have recognised the value of FM to their organisations**

Thankfully, all that is now beginning to change. The last few years has seen an upturn in the economy in most parts of the country. The lack of investment through severe cutbacks in facilities management and infrastructural maintenance has seen the rapid growth in demand for facilities management professionals. This growth has seen the sprouting of a number of new indigenous FM companies, coupled with the fact that Ireland is attracting the type of multi-national companies that have recognised the value of FM to their organisations.

While investigating the training market and speaking to industry leaders, we recognised that the lack of quick turnaround and frequent training in facilities management was hampering the development of FM staff and, in turn, placing pressure on organisations to deliver knowledge-based training while continuing to meet the demands of their customers. This, coupled with the recognition that FM is not merely a cost-saving tactic but an important strategic tool for organisations, led me to setting up the training arm of Advanced Workplace Solutions.

#### **PL: So what exactly is this training all about?**

Well, we started off last year in delivering a course, *Essentials of Facilities Management*, which was aimed at new entrants into the profession, as well as those in ancillary roles in the building services who wish to know more about the FM sector that they are interacting with on a more frequent basis.

#### **PL: Give us an example of what's covered?**

**PG:** As you know, FM is such a wide area

we recognised that we could not cover everything in one go. So, we concentrate on the key areas that would satisfy most delegates requirements and needs. These are sustainability and energy management, business continuity, security, health and safety, buildings and maintenance management, procurement and space planning.

#### **PL: Has the marketplace been receptive to what you're delivering?**

**PG:** Yes, absolutely. The initial uptake on course placements meant that we had to provide additional courses to meet the demand for last year, and the most satisfying part for us has been the number of referrals and recommendations from those who have already been on the course with us. I think this is a good indication that we are delivering the right content with the right methods.

#### **PL: Where to from here?**

**PG:** The consultancy side of the business has taken off as well, with short-term projects and long-term activities supporting organisations in the public and private sector already up and running.

In terms of the training, as well as continuing with the *Essentials of Facilities Management* course, we have just unveiled a new two-day course called *Advanced Facilities Management* which is aimed at the more experienced senior facilities managers. It covers areas such as change management, team building, maintenance for managers, presentation skills, and strategic procurement. We also plan to have a series of one-day and half-day courses to complement the two main courses.

**Note:** Advanced Workplace Solutions has teamed up with Leesman Index Managing Director, Chris Moriarty, who will deliver a Breakfast Seminar on The impact of Data on Workplace Strategies, which will take place on 30 March next at the Irish Management Institute.

Contact: Pat Gaughan, Advanced Workplace Solutions. Tel: 087 - 731 0635; email: pgaughan@advancedworkplacesolutions.ie; www.advancedworkplacesolutions. ■

# THE ENERGY SHOW 2017

5<sup>th</sup> APRIL, 10am – 6pm  
6<sup>th</sup> APRIL, 9am – 5pm  
RDS, DUBLIN 4

#energyshow17

The SEAI Energy Show is now firmly established as the flagship event for professionals involved in the energy sector. It comprises a unique mix of leading suppliers showcasing the latest product and system innovations, alongside an extensive programme of complementary events such as the Energy Theatre, Product of the Show, Energy Saving Best Practice demonstrations, International Markets Pavilion, and electric vehicle test drives.

**Networking opportunities** are immense, and these are further facilitated by the Association Pavilion which includes virtually all the relevant industry representative bodies grouped together in the one location.

The Energy Saving Best Practice demonstrations comprise inter-active presentations spearheaded by the National Insulation Association of Ireland (NIAI). They feature cut-away examples, along with a series of live demonstrations and voice-over presentations extolling best practice in the sector. This area is now a show highlight as it also affords the opportunity for inter-active participation with visitors, and facilitates Q&A sessions after each presentation.

**The show is now regarded as the preferred platform for most manufacturers to introduce their latest innovations**

Initially introduced as a dedicated insulation area, it has grown and expanded over the years to incorporate related industry sectors. These now include ventilation and air-tightness, solar energy/PV and heating.

Full programme and live demonstration schedule will be published shortly.

Another highlight is the Product of the Show Awards. These have championed innovative product developments, especially those incorporating smart energy solutions, for many years. Considerable investment in R&D, coupled with rapidly-changing technology, have seen a wave of pioneering products and systems featured at the Show which is now regarded as the preferred platform for most manufacturers to introduce their latest innovations. This year promises to be no exception.



All the shortlisted finalists will be featured on a dedicated display area with the winners being announced on the afternoon of the first day.

Categories are Best Energy Efficient Product Award; Best Innovative Product Award; Best Renewable Energy Product Award; Best Services Provider Award; Best Lighting Product Award; and Product of the Future Award. What better place to start your visit to the show?

See <http://www.seai.ie/EnergyShow> ■

# ACV Compact Condens high-output gas condensing boilers from C&F Quadrant

The new range of ACV Compact Condens high-output gas condensing boilers from C&F Quadrant is available in four power versions – 16kW, 210kW, 252kW and 294kW. The boilers combine a “tank-in-tank” concept with a double primary circuit to reach the high performance of a total condensation double-circuit boiler.

**All models are** equipped with a high-efficiency charging pump with an air/gas premix burner and delivers low NOx emissions. During operation, the burner starts automatically as soon as the boiler temperature gets lower than the pre-set temperature and stops as soon as the pre-set temperature is reached.

They also feature a built-in frost-protection mechanism. As soon as the flow temperature (NTC1) drops below 7°C, the central heating pumps are activated. As soon as the flow temperature is at 5°C, the burner starts up until the flow temperature rises above 15°C. The pumps continue to run for about 10 minutes. The function can be enabled or disabled through the installer menu. When the frost protection is disabled, only the pumps operate.

An anti-freeze function is also available if an outdoor temperature sensor is connected. The pumps are activated when the outside temperature drops below the threshold defined through the freeze-protection function in the installer menu. In order to enable the boiler to protect the whole system against freezing, all the

valves of the radiators and the connectors should be completely open.

The boiler can be set up in different types of systems, either high or low temperature and with or without domestic hot water tank. The boilers can also be set up

in cascade system using an external controller.

Contact: C&F Quadrant.

Tel: 01 – 630 5757;

email: sales@cfquadrant.ie;

www: cfquadrant.ie ■

## Features and benefits

- Stainless steel heat exchanger with self-cleaning flue ways;
- Can be installed in cascade;
- Single unit offers heating and DHW with single flue outlet;
- Small plantroom footprint;
- High efficiency;
- Easy servicing — all parts can be serviced from the front;
- Integrated controls;
- Built-in Modbus control;
- Rear flue outlet;
- Flue gas measuring point;
- Modulation ratio up to 1:5;
- ErP A rated for heating and cooling.



Cut-away of the new ACV Compact Condens high-output gas condensing boiler from C&F Quadrant.

# Solar offers €2 billion gross value added and €800 million tax revenue potential

**Energy policy on the island of Ireland is in need of reform if the nation is to achieve its international and European level targets to reduce carbon emissions. Currently, fossil fuels supply the lion's share of Ireland's energy needs. There is recognition by Government that this needs to change, especially if Ireland is to achieve its 40% target of energy generation from renewables by 2020, writes David Maguire (pictured), Chairman, Irish Solar Energy Association (ISEA).**

**At present, Ireland** is the only EU member state that does not provide support for the generation of energy from solar. Currently, Ireland's renewable energy policy is focused on wind generation, a source of energy that is in abundance on the island. However, while Ireland has broken records with wind generation, dependence on wind alone to achieve targets is not sufficient to guarantee a seamless transition to the low carbon economy that is desired by politicians. Critically, a growing demand for energy stemming not just from an increasing population, but a burgeoning IT sector that sees multinationals want to construct data centres in Ireland due to its ideal climatic conditions is rapidly shifting the nature of energy use.

Moreover, the nature of investment in energy is skewed towards coal and gas with €1.6 billion being invested in 2015, which is

significantly greater than investments made in wind over the last five years. Responding to this change calls for a dynamic, resilient energy supply that can only be achieved through diversification of energy sources. This must include solar.

The Irish Government has stated that it is committed to guaranteeing consumers have access to affordable energy. Presently, Irish consumers pay the third highest energy prices in the European Union as of 2015. The Public Service Obligation (PSO) Levy is the primary means through which the Government funds renewable energy generation, and it has been the view that the inclusion of solar (and to some extent other renewables) in the renewable energy mix will see a rise in the PSO Levy, and subsequently electricity prices. However, research undertaken by KPMG indicates that for every €1 invested in solar

there is a return of €3. In other words, solar has the potential to deliver €2 billion in gross value added (GVA) and €800 million in tax revenues (2017-2030).

Short-term concerns are receiving priority over the long-term benefits. The creation of a diverse mix of renewable energy sources that guarantees security of supply, a key tenet of Government policy, is therefore being sacrificed.

While there is evidence of the recognition that energy diversification is needed and should be supported, solar PV is being overlooked as a viable option for meeting the country's energy needs. A recent speech by Minister Naughten has cast a shadow on the nascent Irish solar industry. Understandably, the Minister wants to dampen excess speculation, but he also needs to strike a balance and bring the Irish public on a journey that outlines the many benefits that solar PV can bring.

We have a unique opportunity to harness Ireland's indigenous renewable energy resources in a sustainable manner. This can be done in a way that offers long-term





We have a unique opportunity to harness Ireland's indigenous renewable energy resources in a sustainable manner.

Speaking for solar developers in Ireland, the industry recognises the need "to bring the people with us". Through ISEA, key industry players have engaged people about solar and how it adds significant value to farmers' livelihoods, business owners, and citizens. Economic growth in this area will create approximately 7,300 jobs according to the recent KPMG report. There is a public acceptance of the technology. However, there is always more that can be done to engage stakeholders and to innovate new ways collectively to incorporate solar into Ireland's energy supply.

Companies in the industry operate on single digit margins. The call for support mechanisms (specifically, a contract for difference (CfD) mechanism for large-scale projects and feed-in-tariff (FIT) for rooftop and domestic projects) is not solely about asking the government to subsidise the industry. It is more far-reaching than that. It is a call for holistic policies that address the challenges faced by solar (as well as wind and other renewables).

In particular, solar PV projects are sensitive to policies pertaining to the following: grid connection, transmission and distribution of the electricity produced, planning, building regulations, agriculture, environment and heritage. Without the relevant Government departments working together, and with key stakeholders to ensure that policies align, Ireland will fail to realise its ambitions of transitioning to a low-carbon economy.

By ensuring that renewable energy policy going forward is integrated and comprehensive, the Irish Government sends a clear message. Firstly, to citizens that it recognises the importance of clean energy in providing high-quality living; secondly, to businesses and investors that Ireland is open for green investment.

In closing, it is important to note that Government represents the voice of the Irish people and thus is the force that will mobilise Ireland's transition to a low-carbon economy. Government has a responsibility to the Irish people to innovate, such that Ireland remains competitive and resilient in an ever-evolving global economy.

Contact: [info@irishsolarenergy.org](mailto:info@irishsolarenergy.org);  
[www.irishsolarenergy.org](http://www.irishsolarenergy.org) ■

opportunities for investment and for real community participation. Solar is an indigenous renewable energy source. Further, the industry is keenly aware of the need for a pragmatic approach to developing the industry, such that it is sustainable and provides the long-term benefits.

Over 40 planning permissions have been granted for solar farms in Ireland. This indicates that the vast majority of local councils have been supportive of solar PV developments. Councillors have welcomed the opportunity for, among other things, local employment, biodiversity protection and carbon emission reduction.

A limited number of councillors, however, have tried to curtail planning applications for solar PV development, looking to central government to give more direction on the issue. Minister Coveney has so far taken the view that regular planning laws are good enough for assessing solar projects, despite the fact that they pre-date any solar proposals.

In the absence of any national guidelines the Irish Solar Energy Association (ISEA) is preparing its own recommendations for best practice in planning. These recommendations will be based on best practices in other countries. The Association believes that the creation of unnecessary road blocks in the long run are harmful, not just to the industry, but to the Irish people.

For example, in relation to rooftop solar, current planning restrictions are curtailing the ease with which a home or business can install a PV array on its rooftop. Existing planning rules state that, "total panel area must not exceed 12sq m or 50% of the total roof area including

existing panels" on a domestic dwelling or, "total panel area must not exceed 50sq m or 50% of the total roof area, including existing panels" in a light industrial or business setting. This is very restrictive in allowing a home or business owner to install PV, as they will be put off by the extra expense and time of going through the planning process.

It also leads to a smaller system being deployed which, due to economies of scale, costs more per kWp to install than a larger system. A smaller system obviously produces less electricity, which in turn negatively affects how rooftop solar can assist in the transfer to a low carbon economy. It is imperative that given our current situation of not being on target for reaching our renewable commitments by 2020 that we assist commercial and domestic property owners in deploying rooftop solar with more ease.

There is a vast wealth of untapped energy resource in the rooftop sector in Ireland. The introduction of a Feed in Tariff (FIT), as has been done in countries like the UK and Germany, would help deploy a large solar resource on currently-vacant roof space. This would in turn empower home and business owners to be a part of Ireland reaching its 2020 targets, while gaining savings on their electricity bills and creating thousands of new jobs that strengthen Ireland's economy. Surely it is better to spend money now to achieve our targets rather than face fines running into the hundreds of millions of Euro? By not acting now we will not only be left with fines but also with a stagnant renewable energy portfolio in our country's energy mix.



# Hoctor Refrigeration celebrates 35th anniversary

**Hoctor Refrigeration, Tullamore, Co Offaly, is one of Ireland's longest-established and leading refrigeration and air conditioning companies. Principal Liam Hoctor set up the business in 1981 having first served his apprenticeship, and worked for five years, under the expert tutelage of Matt Butler, Butler Refrigeration, in Thurles.**

As with all refrigeration apprentices at the time, he spent 12 months in Cork at the AnCO Training Centre, staying in digs in the city and getting paid £10 a week. The class of 1975 was a talented group with many now running their own businesses in the sector, just like Liam.

Liam more or less fell in to a career in refrigeration through family connections but, having done so, he found he enjoyed it immensely, was obviously good at it, and went on to take a leading role – in partnership with Mitsubishi Electric – in the introduction of modern-day air conditioning to the Irish marketplace.

On completing his 12-month stint in Cork Liam returned to Butler Refrigeration's Thurles branch and then subsequently moved to head up the company's Limerick branch.

However, having gone straight from school to work, Liam had an urge to

travel and so resigned his position, bought a Renault 6 for £100, and headed off across Europe. While the car died and was abandoned in Cologne, Liam went on to have a great many adventures travelling all over Europe.

He then considered going to America but, given the border stamps on his passport – including Turkey and Greece – the American authorities considered him a risk and so his visa was refused.

Liam then returned to Ireland and considered his options, before setting up Hoctor Refrigeration. As with most similar operations he started out trading from home, specialising in refrigeration for local shops, small supermarkets, local factories, etc.

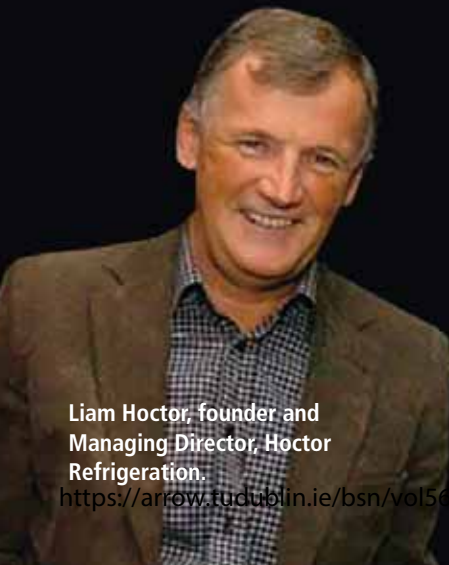
In the early 1980s the nature of the refrigeration market changed significantly with the more established companies gaining "preferred supplier status" with the larger companies, thus making it difficult for smaller operations to get work.

Coincidentally, air conditioning was coming more to the fore. Technological developments, coupled with a demand for greater comfort in offices and retail outlets, created a demand for competent installers. Mitsubishi Electric was at the vanguard of this development and, recognising that refrigeration specialists were the ideal partners, it set about appointing a nationwide dealer network. Hoctor Refrigeration was appointed to cover the Midlands.

Working closely together for the past 35 years, Hoctor Refrigeration and Mitsubishi Electric have grown and strengthened that partnership. In the early days in particular Mitsubishi provided the training and marketing support to help Hoctor Refrigeration develop the air conditioning side of the business, and that close working relationship continues to this day.

The marketplace of 2017 is unrecognisable when compared with that of 35 years ago when Liam Hoctor first set up in business. However, the fundamentals are still the same. Today's Hoctor Refrigeration is as renowned as ever for the quality of the service it provides and the technical excellence of its engineers.

Congratulations to Liam and all the team at Hoctor Refrigeration. ■



Liam Hoctor, founder and Managing Director, Hoctor Refrigeration.

<https://arrow.tudublin.ie/bsn/vol56/iss1/1>



The Hoctor Refrigeration team of engineers pictured outside the company's headquarters in Tullamore.

# GreenTherm HIUs – a boiler without a flame

GreenTherm is a professional provider of different types of cost-effective renewable energy solutions for both domestic and commercial buildings. It provides a defined warranty on all its products and also runs a consultancy service on how to reduce domestic and commercial energy costs. Products within the portfolio include solar panels, heat pumps, underfloor heating, wood gasification boilers, condensing gas and oil boilers and heat recovery ventilation systems.

**GreenTherm's engineers** have a deep technical understanding of renewable technology, and its integration into buildings, and are at the forefront in delivering customised, project-specific renewable energy solutions.

One of the latest additions to the GreenTherm portfolio is the Hiper range of high-performance heat interface units (HIUs). The HIU principle is quite simple ... a central boiler house generates heat which is distributed through a network of pipes to the different homes or apartments in the building. Each one has its own Hiper HIU which converts heat from the network and delivers it as heating and hot water for the home.

This technology offers significant advantages to all stakeholders, from

the building occupiers through to building owners, system designers, developers, architects and installers.

## RPM Hiper Benefits

- Instantaneous hot water production;
- Integrated DHW legionella sterilisation;
- Optimised heating temperature control as standard;
- Standby mode temperature control;
- Lower return temperatures to the network;
- Integrated flow proportioning valve;
- Swappable heat exchangers;
- Low energy pump;
- Radiators or underfloor heating;
- Minimal maintenance;
- Reduced running costs.



The Hiper HIU has been independently tested and conforms to BS EN132-01.

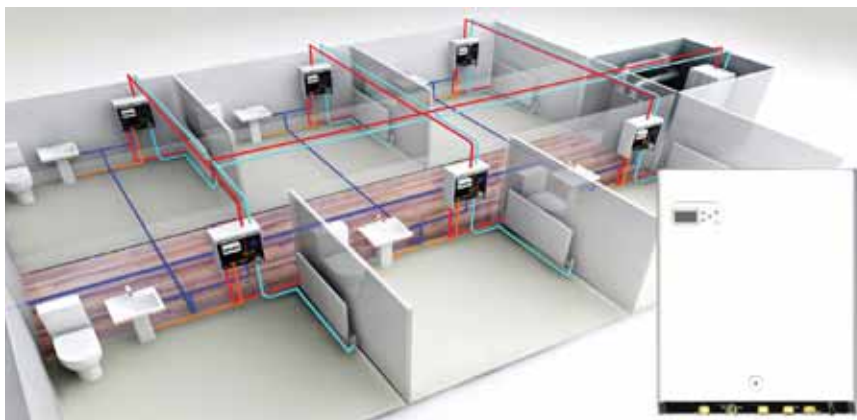
For instance, occupiers benefit from shared maintenance costs, an efficiently-controlled heating and hot water supply, and accurate billing.

Developers and system designers benefit from the fact that no gas supply is required; there is no need for a flue to evacuate exhaust combustion; it requires no storage cylinder and meets all low emission and efficiency targets.

For installers, the Hiper HIU system from GreenTherm is easy to install, requiring only a programmable room thermostat; it is compact and lightweight; requires minimal pipework; and is simple to maintain because of easy access to all components.

Building owners and landlords benefit from reduced service and maintenance costs, can provide more accurate and fairer tenant billing, and have no flues to maintain. In addition, the risk of legionella contamination is eliminated while the heating system can be upgraded if required without the need to replace the whole unit.

Contact: Enda Ruxton,  
GreenTherm. Tel: 01 – 531 4781;  
email: [enda.ruxton@greentherm.ie](mailto:enda.ruxton@greentherm.ie);  
[www.greentherm.ie](http://www.greentherm.ie) ■



The Hiper HIU is compact and is easy to install.  
Published by ARROW@TU Dublin, 2017

## ANOTHER SIDE OF ...

**Tony Pinkster, renowned refrigeration specialist whose analytical and trouble-shooting expertise is much sought after by all industry sectors, is not just a classic car enthusiast ... he is a dedicated classic Porsche enthusiast.**



**Like many of his generation** Tony became a refrigeration engineer almost by default, serving his apprenticeship and a good 20 years of his life working on refrigerated ships which were part of the family business. Throughout this period he also worked for a time in another arm of the family business which specialised in heating, plumbing and refrigeration but then, in the early 1990's, he gave up seafaring for good and joined Tech Refrigeration before moving to Reconair and eventually going out on his own.



Throughout this time he always had an interest in cars and motor sport, and did a great deal of rallying when on dry land. His car of choice was the Hillman Imp and if anyone knows of an Imp Stiletto lying about in some garden or garage give him a call ... he will give anything to acquire one.

That said, classic Porsche models are his abiding passion, and the Porsche Carrera in particular. His first venture into classic cars was a 1978 Porsche 911 turbo which he refurbished and used for a number of years before trading it in against his first Carrera in 1984. Since then it has been nothing but Carreras.

While undoubtedly an admirer of the history and styling associated with the Carrera, Tony's abiding passion is what's under the bonnet. It is all about the engine, especially the pre 1995 air-cooled ones. The bodywork and painting he farms out.

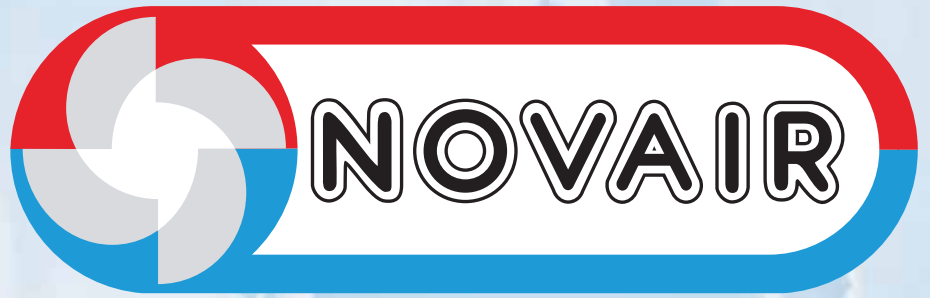
**While undoubtedly an admirer of the history and styling associated with the Carrera, Tony's abiding passion is what's under the bonnet.**

On acquisition of a "new" model he totally strips down the engine, does all the necessary refurbishment work – including the gearbox and electrics – and then enjoys driving it until such time as he moves it on.

While admiring their beauty and classic lines, he is not sentimental about the cars. Nor is he a collector. The pleasure for Tony lies in sourcing a unique model in reasonable working order with an engine that presents a challenge to restore and refurbish.

Once done he will drive it – mostly as his "weekend car" – until he can identify a new opportunity to do it all over again.

With Tony it is a Porsche Carrera or nothing ... unless of course it is an Imp Stiletto. ■



Standard CTA units suit air flow 1,500 m<sup>3</sup>/hr to 100,000 m<sup>3</sup>/hr



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Tel: 01 - 409 8912; Fax: 01 - 409 8916;  
email: info@coreac.com

**Panasonic**  
Homes & Living



AQUAREA

### For real savings at home, choose the Aquarea H Generation

Panasonic's Aquarea H Generation range of heat pumps deliver major energy savings thanks to its incredible efficiency even at -20°C. This innovative new low-energy system, designed to help you enjoy ideal temperatures and hot water in your home, is far cleaner, safer, cheaper and environmentally friendly than alternatives using gas, oil and other electrical systems. It is the most innovative option for low energy homes and achieve an impressive COP of 5 (on the 3,2 kW). Maximize the energy savings in heating and hot water for your home with Panasonic Aquarea H Generation.

