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BS News September/October

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bs news

building services news

September/October 2012

GAS AND WIND MATTER ... BUT SO DOES OIL!



*David Taylor, Chairman Energy Institute,
Republic of Ireland*

Gilroy
on boiler
technology

Management
development
network

ASHRAE
winter
conference

RACGS retain
'Ryder Cup' in
Blackpool

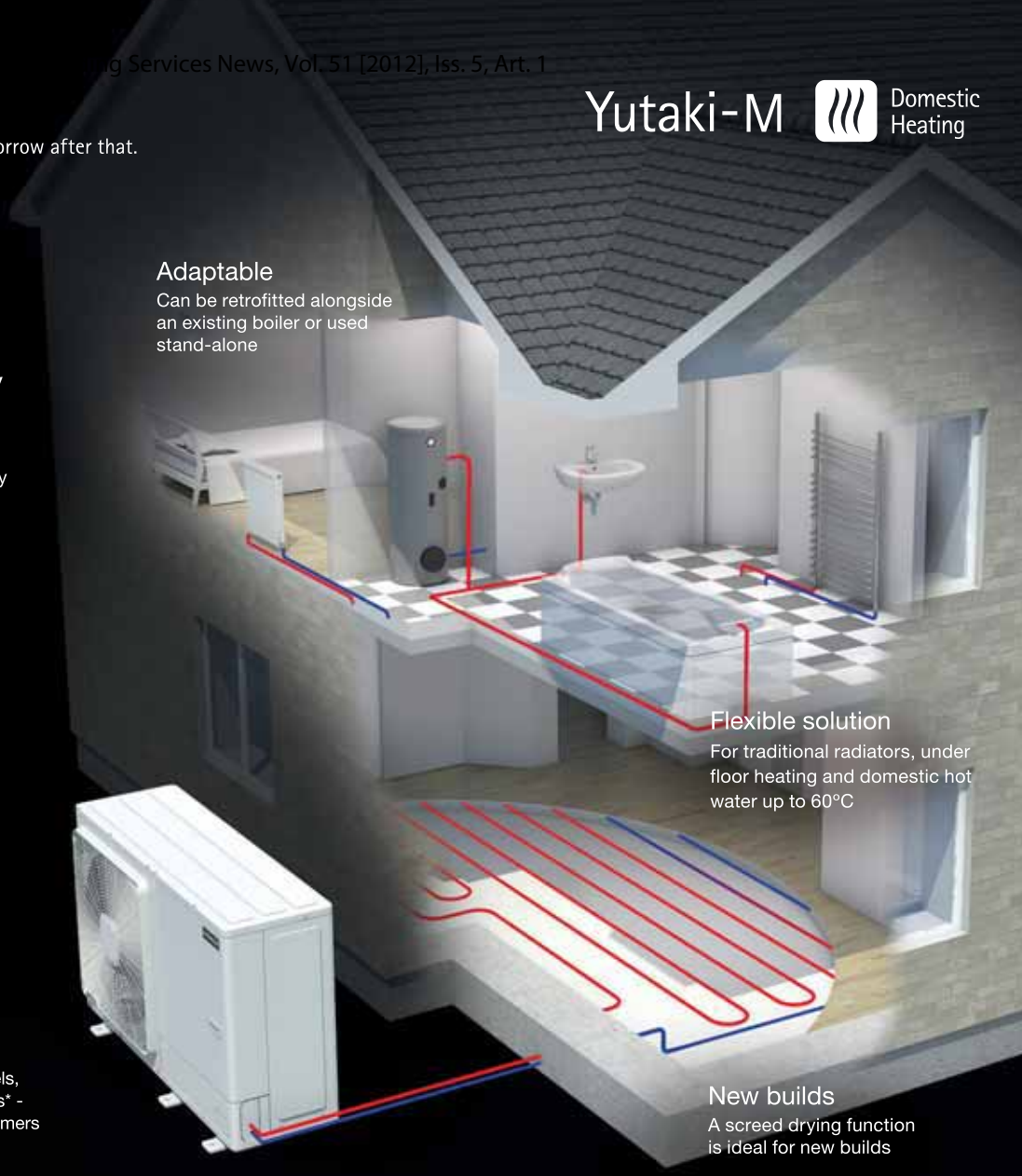
Hitachi Heat Pumps

Engineering for tomorrow. And the tomorrow after that.

Yutaki-M



Domestic Heating



Renewable energy
EU recognition of heat pumps as a renewable energy source presents a major sales opportunity

Adaptable
Can be retrofitted alongside an existing boiler or used stand-alone

Compact height
Available from only 800mm high

Easy to install
Preset engineer configurations make installation and commissioning simple

Low running costs
Our heat pumps use less fossil fuels, saving up to 60% on running costs* - which is good news for your customers

Flexible solution
For traditional radiators, under floor heating and domestic hot water up to 60°C

New builds
A screed drying function is ideal for new builds

Introducing the Yutaki-M air source heat pump with 400% efficiency as standard

Cheaper to install than ground-source heat pumps, Yutaki-M converts 1kW consumption into an impressive 4kW output making it economical for heating and domestic hot water. Not to mention reducing CO₂ emissions by up to 40%*.

	<p>Heating Manufacturer of the Year "The judges felt Hitachi provided an excellent submission, a great product and the way forward." <i>Hitachi's Yutaki M Heat Pump</i></p>
--	---

A space-saving, outside heat pump communicates with an intuitive, wireless remote control to adjust room temperatures efficiently. And in the spirit of keeping things simple, there's even a 'One-Touch' holiday button which your customers will love. And if all that's not enough, we're throwing in a five year warranty too.

Apparently you can please all the people all the time.

*compared to traditional boiler-led systems

To find out more call Hitachi on **+353 1216 4406**
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<https://arrow.tudublin.ie/bsn/vol51/iss5/1>

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opinion

Don't say you were not asked ...

How often have you yourself complained, or heard an industry colleague complain, that new standards and/or changes to existing standards were introduced without notice or consultation? At *bs news* we hear it all the time.

Well, the truth of the matter is that all bodies responsible for building services-related regulations and standard in Ireland have a very transparent process of notification and consultation. Just this month alone NSAI invited comments on two Standard revisions – one in relation to domestic gas installations and the other covering plastic piping standards (see News inside).

The drafts of both can be accessed and downloaded on the NSAI site – www.nsaie.ie – while the NSAI *Your Standards, You Say* link makes it simple to give your comments and views on the new proposals.

To make it easier still the NSAI points would-be reviewers of the new Standards in the direction of the major changes which have been introduced.

Now is the time to have your say. Of the thousands of installers in the country affected by these Standards, it will be interesting to see just how many take responsibility for themselves and avail for the opportunity provided by the NSAI *Yours Standards, You Say* link.

... or told

In a similar vein RGII has taken an equally-proactive approach when it comes to domestic gas installations, including LPG systems. It has just published a new Technical Guidance Document that will prove an invaluable aid to all gas installers. Every installer should get his/her own personal copy. ■

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News and Products

Ex-stock availability key to DWG service

Further to the amalgamation of Gasco Ireland and Dean & Woods (under the banner of parent G&L Beijer), the new operation will trade as DWG and will operate from the former Gasco premises in Broomhill Road, Dublin 24.

The building has been substantially refurbished to incorporate additional office space, a more streamlined trade counter service, and a larger open-

plan reception area with tea/coffee station.

The warehouse has also undergone a major transformation and is now



equipped to hold twice as much stock as before.

“While it has been challenging at times to put the structures in place to service the operational needs of the

new, much larger business DWG represents, that process has now been completed”, says Managing Director Mark Kiely.

“Critical to that service is ex-stock availability and to that end we now hold more than twice as much stock as before across the entire product portfolio. This means we can instantly provide everything an air conditioning or refrigeration contractor needs, from the largest mainstream appliances through to the smallest nuts and bolts ... and everything in between.”

Market-leading brands predominate the portfolio and among the ex-stock product lines carried by DWG are Big Foot Systems, KD Scroll, Yellow Jacket Tools, LG, Mitsubishi Electric, Carel, Danfoss, Industrial Gasses, and many more.

Contact: Mark Kiely, DWG. Tel: 01 – 462 7311.

Shouton Executive Director of PM Group

PM Group has appointed Allan Schouten Executive Director of the company. Allan is the Managing



Director for the Asia operations based in Singapore where he has been central to growing PM Group’s business in the region through a network of offices in Singapore, India and China. He has worked on a variety of complex food, pharmaceutical and chemical projects in Ireland, the US, Singapore, the UK, the Netherlands, China and India for clients including Genzyme, GlaxoSmithKline, Dr Reddys, Wyeth and Schering Plough.

Allan brings over 20 years international business experience in the project management, design, construction, commissioning and qualification of biopharmaceutical industry facilities.

Allan joined PM Group in 1998. He is a Chartered Chemical Engineer with key expertise in the delivery of complex biopharmaceutical projects involving multiple client and contractor organisations across the world. Allan is a Director of the Irish Chamber of Commerce in Singapore.



John Bilton, Managing Director Dean & Woods and Director of DWG with Per Bertland, CEO, G&L Beijer and Mark Kiely, Managing Director, DWG.

Davies trade counter service expanded

Davies trade counter has been a cornerstone of the company’s success over the last 20 years and, now that the facility has been greatly expanded, it has improved still further the quality of service provided to its customers at its headquarters complex in Raheny, Dublin 5.



Davies trade counter provides all the accessories and equipment needed by the busy professional, acting as a one-stop-shop for all their requirements.

From world-leading brands and power tools to safety gear and equipment, the large premises allow Davies trade counter to stock all materials for the plumbing and heating sector as well as being specialists

in drainage systems, and also cater for the needs of the ever-demanding home improvement sector.

In addition, Davies experienced staff are on call to deal with any queries, from difficult technical enquiries to more basic home improvement tasks.

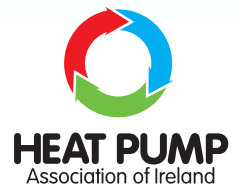
PERFECT PARTNERS



Open Your Eyes to Perfect Service

As a world-wide leader in electronics Toshiba not only develops new technologies but provides products and systems that improve health and comfort. Toshiba designs and manufactures state-of-the-art air conditioning and heating, with innovative technologies in all areas. From superior performance to reduced power consumption, from air treatment to expert technical support.

- ✓ Full stock of heat pumps and spares available off-the-shelf
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- ✓ Equipment returns policy (re-stocking charge may apply)
- ✓ Technical support available in Ireland by calling an Irish mobile and speaking with an Irish technician
- ✓ 24/7 tech support
- ✓ Text back service (0044 7624 803 017)
- ✓ Fully resourced up-to-date website for all sales and technical manuals



Service as it should be

For further information contact:

GT Phelan

Tel: 01 286 4377

Email: info@gtphelan.ie

Published by GT Phelan, TU Dublin, 2012

TOSHIBA AIRCONDITIONING

Advancing the **eco**-evolution

News and Products

Europe's first hydro-powered bus/tram interchange

The Rochdale bus and metrolink interchange, currently under construction, will become the first building of its kind in Europe to be powered by hydropower generation when it opens next year.

The £11.5 million interchange is next to the River Roch and a hydroelectric turbine has been installed which converts energy from the river as it flows rapidly through a weir. The weight of the water turns the screw-

shaped turbine, generating electricity.

The turbine produces up to 86,000kWh of electricity every year, which will help to reduce the interchange's carbon footprint by over a quarter. It is driven by an Archimedean screw which was supplied by Spaans Babcock, a specialist contractor with a local base in Heywood.

There is also a fish pass which helps fish swim upstream past the turbine to migrate and spawn.



Excellence in FM and workplace servicing

The British Institute of Facilities Management Ireland Region has established an awards scheme to recognise an organisation and an individual who has made an outstanding contribution to the facilities and property management industry in Ireland.

The winners will be revealed at the 16th annual BIFM Ireland Region conference and exhibition which will take place at Belfast Waterfront on Friday 16 November 2012. The winner of the individual award will receive free membership of BIFM for one year and the winner of the organisation award will receive £150 off their next annual BIFM corporate membership.



British Institute of Facilities Management (BIFM) Ireland Region Chairman Stephen Welch with committee member Jacqueline Byrne.

NSAI Plastic Piping Standards

The NSAI Consultative Committee, Gas Technical Standards Committee (GTSC) has prepared the Nationally Defined Parameters (NDP) for Polyethylene (PE) Plastics piping systems for the supply of gaseous fuels within the scope of nationally adopted European Standards I.S.EN 1555-1:2010 and I.S.EN 1555-2:2010. These NDPs will be published with the Irish Standard following the public comment period.

The following National Annex have been circulated by NSAI for public comment:

- Irish National Annex to IS EN 1555-1:2010 – Plastics piping systems for the supply of gaseous fuels – Polyethylene (PE) – Part 1: General;
- Irish National Annex to IS EN 1555-2:2010 – Plastics piping systems for the supply of gaseous fuels – Polyethylene (PE) – Part 2: Pipes.

The draft National Annex are available for review and comment on NSAI *Your Standards, You Say* on www.nsaie.ie

Uponor appoints Brown

Uponor has appointed Kevin Brown National Sales Manager UK and Ireland. He will assume responsibility for 12 area sales managers and will also head up the growth strategies with the company's independent distributor partners.



mark[®]

International Leader in Climate Control

Mark Group has been manufacturing climate control equipment since 1945 with a large percentage of the vast product range being manufactured in Coolea, Co Cork by its Irish subsidiary, Mark Eire BV, since 1987. In addition to serving the Irish marketplace, Mark Eire exports products to all corners of the world.

Mark Eire has developed a new website to best portray the extent and scope of the product range. It also details the design and technical support services provided. To find out more simply log on to:

www.markeire.com

Product categories featured include

- Air Heating and Heat Pumps
- Ventilation/Recirculation
- Air Conditioning
- Supply Air Systems
- Thermostats and Time Switches
- Controllers and Switches
- Control Panels
- Pipe-bending Equipment



mark
CLIMATE TECHNOLOGY
FEELS BETTER, WORKS BETTER.

Mark Eire BV

Coolea, Macroom, Co Cork

Tel: 026 – 45334 Fax: 026 – 45383

email: sales@markeire.com web: www.markeire.com

Fresh approach to AC and refrigeration contracting

Michael Clancy needs no introduction to the air conditioning and refrigeration sector in Ireland as he has been synonymous with the supply and distribution of some of the industry's premier brands for 25 years. However, with the formation of XL Air, Michael has changed tack and is now emerging as a leading contractor providing design advice, installation, service and maintenance. Where appropriate product selection and supply is also provided.

XL Air provides clients with a complete design and build solution at the most competitive price while, at the same time, delivering the highest quality installation. To that end it has an in-house team of fully-qualified refrigeration engineers.

They in turn work very closely with a network of appointed installers who are strategically located to ensure comprehensive nationwide coverage. All have F-Gas certification and are supported by an experienced back-office team, including an RGI registered heating specialist.

All in-house and network-appointed personnel participate in a continuous programme of product updates and educational seminars to ensure that they are fully *au fait* with the latest technology and product updates coming from the leading-brand manufacturers. This guarantees that the client always gets the best-performing, most cost-effective, eco-friendly solution available in the marketplace.

XL Air's engineering expertise covers the entire building services spectrum and includes fully-qualified mechanical, electrical, building management and building safety systems. They deliver comfortable and safe environments for the people who use clients' buildings.



Planned preventive maintenance

XL Air planned preventive maintenance (PPM) contracts are designed to keep equipment in perfect working condition, to optimise its efficiency, and to prolong the life of the equipment. It reduces the risk of equipment failure and preserves and enhances equipment reliability by replacing worn components before they actually fail.

While the maintenance frequency suggested in the manufacturer's manual can be used as a guide, XL Air conducts its own survey of the actual usage of the equipment and determines the maintenance procedure required on that basis.

XL Air supports all air conditioning maintenance contract customers with a comprehensive 2-hour/365-day emergency call-out service, as well as technical telephone support.

Emergency call-out (x-head)

XL Air PPM contracts keep breakdowns to a minimum. However should one occur, clients are assured that it will be repaired promptly. Service engineers are available to provide nationwide after-sales service 24 hours a day, 7 days a week, 365 days of the year.

The service vehicles are equipped with a large supply of commonly-used spare parts and are supported by a fully-stocked spares department at head office. All service engineers carry hand-held palm pc units that allow them order more uncommon spare parts, and submit reports, without ever having to return to base.



XL Air provides

- New installations
- Retrofit and fit-out
- Design advice
- Equipment Supply
- Planned preventive maintenance
- Emergency breakdown service
- Portable air conditioning

XL AIR

XL Air Ltd.

Unit 21, Western Industrial Estate, Naas Road, Dublin 12.

t: 353 1 4050 222 m: +353 87 262 0701 e: info@xlair.ie w: www.xlair.ie



Major projects for blue-chip clients

XL Air has XL Air has a massive client list of blue-chip companies with locations all over Ireland. Many of them are multi-branch outlets and XL Air is responsible for everything from planned preventive maintenance through to emergency call-outs and replacement/new installations.

A typical example is **Odeon Cinemas**. Just recently XL Air completed the replacement of 16 rooftop units at the Odeon in Coolock in Dublin with 11 new 90kW units. Nine splits were also provided. Everything was designed and calibrated so that it interfaced seamlessly with the existing BMS system.

All the old units were degassed, decommissioned and fully scrapped in compliance with all regulatory and statutory requirements. It was a design and build project with XL Air responsible for equipment supply, installation, mechanical and electrical

services, ductwork, etc.

In the restaurant sector XL Air has completed the AC fit out of 28 Costa Coffee outlets throughout Ireland.

At **Champion Sports** in the Jervis Centre in Dublin four VRFs were replaced with like-for-like units while an additional six 25kW twin systems were added. A new dedicated controls network was also installed to allow flexible and comprehensive management and monitoring.

Meanwhile various and extensive works have been carried at the **Acheson & Glover** Group Headquarters in Fivemiletown, Co Tyrone. In a total retrofit at the complex XL Air replaced existing equipment with a VRF system comprising 16 indoor units and one outdoor unit. In addition, a number of spits were installed in Fivemiletown, and also in the company's Ballygally IT Centre and



Acheson & Glover Group Headquarters

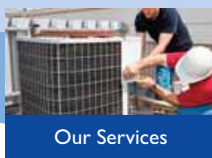
Dungannon Showroom.



Champion Sports, Jervis Centre

Portable air conditioning

XL Air offers a wide and flexible choice of portable air conditioning models for hire. This can be the perfect reactive response to an unexpected need to provide comfort cooling for people or manufacturing processes. XL Air can also provide large portable cooling and ventilation fans.



News and Products

Toshiba expands ducted unit range

Toshiba has introduced a large-capacity ducted unit to cater for applications requiring higher outputs that is now available through distributors for Ireland GT Phelan.

The new Toshiba large-capacity ducted unit from GT Phelan.



The new model, RAVSM1606BT, is a soft-start (1A) single phase model (also available in 3-phase) which will produce between 1.5kW and 16kW of cooling and between 1.5kW and 18kW heating.

The system can cater for a separation of up to 70M (pre-charged for 30M).

All Toshiba split system ducted units have been re-manufactured to allow installation into smaller ceiling voids. The latest generation indoor units are now 275mm high, reduced from 310mm. Toshiba ducted units are not supplied with insulated spigot outlets – these are now available as an optional extra.

The rear air-return can be configured to underside return very simply.

All Toshiba equipment is covered by a full three-year warranty covering parts with a labour allowance.

Contact: Ciaran McCarthy, GT Phelan.

Tel: 01 – 286 4377; email: ciaran@gtphelan.ie

Ocean Energy Conference

The 4th International Conference on Ocean Energy takes place at the Convention Centre in Dublin from Wednesday, 17 October to Friday, 19 October next. It will focus on growing opportunities within the marine renewable energy industry and showcase the latest technologies in harnessing renewable energy from the sea.



Around 600 international experts and up to 70 world-leading companies will be in Dublin for the three day event. Key speakers will include Eddie O'Connor, CEO

Mainstream Renewable Power and Dengwen XIA, State Oceanic Administration, People's Republic of China

The speaker line-up will also include personnel from indigenous Irish companies providing the components for wave energy devices and servicing the offshore wind industry.

Harry Koler of IBM – who are developing a novel approach to managing the noise levels emitted by ocean energy devices and its potential impact on marine life – will also address the conference.

To register log on to events.conferencepartners.ie

RGII technical guidance document

The Register of Gas Installers of Ireland (RGII) has published a comprehensive 80-page technical guidance document that will prove an invaluable aid to all gas installers.

The guidelines cover domestic gas installations and the installation of LPG systems for habitation purposes in leisure accommodation vehicles and accommodation purposes in other vehicles.

There are 12 separate sections in all, covering everything from safety, certification and getting the customer connected to pipework within the building, permitted flue termination points and ventilation requirements. Copies are available direct from RGII.

Contact: Willie Wilson, RGII Inspections Manager. Tel: 01 – 499 7998; email: info@rgii.ie; www.rgii.ie



prl.S. 813:2012 – Domestic Gas Installation (Edition 3)

The draft revision of prl.S. 813:2012 is available for review and comment on NSAI *Your Standards, Your Say* on www.nsaie.ie and comments must be submitted online using this link. The closing date for comment is 30 December 2012

Background

IS 813:1996 was first published by NSAI in 1996 having been developed by the NSAI Consultative Committee Gas Technical Standards Committee (GTSC). It replaced and superseded ICP3:1989 (Domestic installations for manufactured and natural gas) and IS 327: (Domestic installations using Liquefied Petroleum Gas).

ICP 3 was first published in 1984. IS 327 was first published in 1987. The second edition of IS 813 was published in 2002. In 2009 Statutory Instrument 225 of 2009 (Gas Works) referenced IS 813 as the scope of work to be regulated by the CER Gas Safety Framework.

The GTSC has been revising IS 813 for almost two years and now circulates this latest draft for review and comment.

Major changes

While IS 813 was reviewed line by line, the major changes include:

- Introduction of requirements for carbon monoxide alarms;
- Introduction of requirements for concealed extended flues;
- Update of ventilation requirements;
- Update of flue terminations;
- Update and addition of new pipework materials and jointing methods;
- Update of electrical works on gas installations.



Think far*



NEOSYS

AIR TO WATER LIQUID CHILLER

200 - 1000 kW

AIR TO WATER HEAT PUMP

200 - 500 kW

EER up to 2,9 - ESEER > 4 - COP up to 3,2
Inverter fans / Active Acoustic Attenuation System
Multi scroll R410A compressors
CLIMATIC controller
High efficiency micro channel coils



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eComfort

illustrates Lennox's commitment toward energy efficiency and environmentally friendly solutions



Lennox – global strengths applied locally

Lennox is a global leader in the heating, air conditioning, and refrigeration markets with a presence in most countries throughout the world, including Ireland.

The Irish operation is run by Philip McEvitt who established the dedicated Dublin-based operation just over two years ago. Philip is widely known and respected throughout the air conditioning and refrigeration industry and has been involved in the business for 25 years.

However, Lennox is not new to Ireland and has been distributed and installed on major projects for over 30 years. Indeed, many of the projects Philip has dealt with in recent months involve like-for-like replacements, albeit with modern-day units, of Lennox equipment installed decades ago.

As a corporate entity Lennox is 117 years old, has more than 12000 employees, a multi billion Euro turnover and three European ISO9001 accredited manufacturing sites. Lennox devotes a proportion of its annual turnover to research and development each year. The result is a constant stream of innovative new products, incorporating cutting-edge technology, which set market-leading standards. In fact, in 2011 alone Lennox filed 107 patents.

Apart from innovative products, Lennox is equally inventive in the manner by which it brings these products to the marketplace. Hence the establishment of Lennox EMEIA (Europe, the Middle East, India & Africa) earlier this year. This new identity and communication strategy centres around the company's new signature – Think Far. The philosophy this represents embraces all aspects of the business, both internally and in the marketplace.

However, from a client point of view it means listening to its customers, understanding their requirements, advising on design and product selection, and assisting them devise the best solution based on the *total cost of ownership*.

The **Total Cost of Ownership** concept is central to the Lennox approach. When quoting for projects it details every single cost element associated with the equipment, and its operation, over the projected lifespan. That way the client is ideally positioned to evaluate the genuine cost of the installation, from purchase through to installation and commissioning, and then the day-to-day running costs over a prolonged period of time.

In Ireland Lennox is especially strong in the commercial sector in particular when it comes to the manufacture and supply of the Ecolean and Neosys range of chillers. Lennox packaged rooftop units also represent some of the most innovative technology in the market. The Baltic range offers industry leading energy efficiency combined with ease of installation and service.

Lennox offers reliable systems that deliver exceptional comfort in commercial and light industrial buildings.

Most units are also supplied with the comfort of a 3-year warranty.

Contact: Philip McEvitt, Lennox Ireland. Tel: 087 – 279 4041; email: philip.mcevitt@lennox europe.com ■



Philip McEvitt, Lennox Ireland

Lennox Ireland has provided air conditioning and refrigeration for some of Ireland's prestigious, blue-chip organisations, some of whom are listed below.

Chillers

- Dell
- Our Lady's Hospital Crumlin
- Castlebar Hospital
- Beaumont Hospital

Packaged and rooftop

- Apple Store Belfast
- Nypro
- Superquinn
- RBS
- Dunbia
- The Bridge House Hotel
- Vistamed
- Costa Coffee

Close control

- BskyB
- BT
- Amgen

Open to
Trade & Public

100%
Irish Owned



HEAT MERCHANTS GROUP

Whether you're building your new home, extending your kitchen or renovating your bathroom...
Heat Merchants Group has the Total Solutions approach.



- An unrivalled comprehensive product range to service the domestic, commercial and industrial sectors. No other merchant offers the same portfolio of products as we do.
- The highest quality product range across all of our brands with prices that give value for money and a professional customer service that won't let you down.
- A nationwide network of well stocked branches with a national logistics structure which allows us to offer you immediate stock availability with a highly efficient delivery service.

- Our economies of scale and purchasing power to provide the most competitive prices across all our brands, passing the savings on to you.
- A one account system allows you to purchase from any of the Heat Merchants Group branches nationwide, saving the you time and money.
- Fully trained, friendly staff with expert knowledge in the Heating, Plumbing, Renewable and Electric trade offering help and advice whenever you need it.



IN MY OPINION: *David Taylor, Chairman Energy Institute, Republic of Ireland*

Gas, wind and energy efficiency is where it's at according to the International Energy Agency (IEA) review of Irish energy policy. The Energy Institute agrees and goes a step further and asserts that oil also matters for future competitiveness, our energy security, and economic growth, *writes David Taylor.*

GAS AND WIND MATTER ... BUT SO DOES OIL!

The Energy Institute was one of 40 organisations visited by the IEA team in the course of its recent review of Irish energy policy published in July of this year. The review is supportive of government renewable energy policy and draws attention to the growing importance of gas for energy security and the implications for gas infrastructure.

On energy infrastructure, the Institute believes that delays such as we have experienced with Corrib and with the North/South high tension electricity link not alone cost the consumer but are damaging to Ireland's reputation – impacting for example on the prospects for oil and gas exploration.

While the ongoing and future benefits of Corrib have been independently assessed and publicised, no government spokesman or agency has put a cost on the delay or drawn attention to the scale of the losses and to who has carried them. The list is long and it begins with the Irish consumer who has had to pay higher gas prices; the government revenue forgone; the taxpayer who has had to make up the shortfall; and last but not least the promoters of the project without whom nothing could happen.

While all of this may be history, its effects are not. Who, given this legacy, would risk investing in hydrocarbon exploration and production (E&P) in Ireland? On the evidence from the Atlantic Margin licensing round of 2011, the answer is no oil company with pockets deep enough to prospect and develop in the deep waters off our western coast.

The Institute believes that until the legacy of Corrib is addressed Ireland will continue to incur a risk premium on investment that translates into reduced E&P activity and higher costs for consumers, thereby damaging competitiveness and growth.

The IEA review gives a succinct, coherent and valuable account of Irish Energy policy and its critique offers several sets of nuanced recommendations for action. Among the principal recommendations are the need to improve:

(1) the security of gas supply;



“ Irish energy policy is rightly driven by long-term environmental and energy security objectives ”

(2) the consent process for critical energy infrastructure.

At this time of national crisis it is vital that the Government fully explores and embraces the resolution of the issues implied.

The Institute believes that the potential for a vibrant oil and gas sector is under-exploited and that in an era of high oil prices it is very much in our interest to fully explore the potential of indigenous resources. It is clear from the “shared goals” to which Ireland and all IEA member countries are committed that this is to be achieved in co-operation with all stakeholders, including industry and local communities.

Irish energy policy has successfully created an active and entrepreneurial wind industry, focussed in the early years on community and small commercial developments, then on regions, and now has its sights set on UK export markets. None of this would have been possible without a strong lead from government, the participation of local authorities and land owners, and the awareness of finance providers.

The Irish wind energy story starts with the marketing of wind as a natural resource by the Renewable Energy Information Office (an early public private partnership initiative of SEAI) and continues with an affordable level of public subsidy, while holding out the prospect of export growth driven by UK demand for renewable energy to meet its international obligations.

Like all successful policy interventions it has consequences – negative consequences if gas prices were to soften; positive consequences were the opposite to materialise. However, one inescapable consequence is the requirement for

electricity interconnection to Great Britain, and flexible gas plant in Ireland to compensate for the variable nature of the wind resource. In a high wind penetration scenario such as that projected for 2020 where upwards of 2,000MW (and almost double that in some scenarios) of wind capacity is deployed, the need for flexible plant and hence the security of gas supplies becomes paramount.

Aside from renewable energy, natural gas is the energy source with the lowest CO₂ intensity. For that and the additional reasons of convenience, price and conversion efficiency, it has become the fuel of choice for electricity generation, heating and potentially for some forms of transport.

The rapid development of the shale gas industry in the United States has taken many by surprise and dramatically reduced the price of inland gas with run-on consequences for oil prices. As a result, the US is now more competitive and enjoying an investment boom. In addition, the US-bound cargoes of the LNG trade have been diverted towards Europe and the Far East, but so far without much impact on prices.

Irish energy policy is rightly driven by long-term environmental and energy security objectives and it is with these goals in mind that the current support is focussed on (i) renewable energy deployment; (ii) energy efficiency; and (iii) R&D to assist the growth and integration of RE and EE.

The IEA has emphasised the need

for enabling infrastructure and of securing public support for its provision. The Institute believes that all of this will be accomplished more effectively if there is a wider understanding of the trade-offs involved in a mature and fit-for-purpose energy policy. Energy policy, with its inherent tensions and their pragmatic resolution, needs to be actively promoted by Government if it is to be appreciated and owned by a wider public.

More gas, better infrastructure and higher efficiency can combine to deliver affordable and cleaner energy services. The chain starts with government enabling E&P and it ends with a responsible service industry intent on bringing quality services to end users who need to be efficiency-aware and enabled if they are to have more affordable comfort with less energy consumption and lower CO₂ emissions.

There is every possibility that, with the right policies and the determination to see them through effectively, we could – like Denmark and Norway – continue to be strongly committed to sustainable energy while aspiring to an indigenous oil and gas industry to make a profitable contribution to Europe’s security of supply between now and 2050.

The openness which characterises the Irish economy has served us well. Even now in our hour of need it continues to support growth in the ICT, pharma and food sectors while providing opportunity at home and abroad for our under-employed. An energy policy that seeks to optimise the potential of all our resources is what we need right now.

We cannot wish our oil dependence away; we must learn to live with it and, if possible, leverage the wider EU dependence on oil to carve out a sustainable future. Gas, wind and energy efficiency are all within reach. A discovery of more gas and a measure of oil could be transformative.

A robust enabling framework for the independently-financed development of our hydro-carbon potential to complement that of wind would be a policy triumph. ■

Mark Group has been manufacturing climate control equipment since 1945 and has been responsible for the introduction of a great many industry breakthroughs down through the years. It has a number of factories worldwide, one of the most important being Mark Eire BV, which was established in 1987 in Coolea, Macroom, Co Cork.

Mark Eire brings leadership to climate control

Over the last 25 years Mark Eire has emerged as a leading product developer within the Mark Group, pioneering the design and manufacture of innovative products which have captured a significant portion of the Irish marketplace. These are also exported worldwide and form a very important element of the overall Mark Group portfolio.

Mark is Europe's largest manufacturer of climate control equipment. The product portfolio is all-embracing and includes a wide and diverse range of products for industry and utility. As such Mark Eire can offer a solution for every project because it is not bound to a single product type, a single supplier, or a single distribution channel. It can also be flexible and responsive to special requirements.

The products of Mark Eire BV are characterised by their robustness and reliability, a key strength being that they are designed and engineered in-house. This results in strict control procedures during



Mark GS+ high efficiency warm air heater with axial fan.



Mark's FÖHN versatile long-life burner

the manufacturing process, along with regular sampling and quality testing.

Mark Eire BV's extensive range of products consists of:

- Air Heating and Heat Pumps
- Ventilation/Recirculation
- Air Conditioning
- Supply Air Systems
- Thermostats and Time Switches
- Controllers and Switches
- Control Panels
- Pipe-bending Equipment

Technical support, service and spare parts

Mark Eire BV also delivers quality technical support with a team of qualified and experienced engineers providing advice on installation, after-sales service, commissioning and maintenance. These engineers are strategically located to cover the entire country so therefore the cost of maintenance is very competitive. Spare parts for products sold directly by Mark Eire are also readily available ex-stock.

Brochures, technical manuals and Autocad product drawings can also be downloaded on every product in the range from Mark Eire BV's new website at www.markeire.com.

Contact: Mike O'Donoghue, Mark Eire BV. Tel: 026 – 45334; email: sales@markeire.com



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Published by ARROW@TU Dublin, 2012



The ASHRAE Winter Conference will take place in Dallas, Texas from 26 to 30 January 2013 with a mix of technical presentations, networking events, social activities and the AHR Expo exhibition.

ASHRAE Winter Conference – Dallas, Texas

The conference's technical programme focuses on core HVAC&R tracks and, with the re-branding of ASHRAE highlighting its efforts in building technology, the conference will present timely tracks on large building design and facility management.

The **Large Building Design** track will highlight the opportunities presented to the design and construction team with "larger than life" facilities and systems throughout the world.

The **Facility Management** track will address energy conservation measurement case studies; new and revived management tools, e.g. building information modeling; increased technologies for automation systems; and overall

facility management with an eye towards financial management.

The **Energy Conservation** track will highlight case studies and research that expands on the simple to the complex energy saving measures being implemented in today's and tomorrow's designs. This track addresses how designs are using more techniques to reduce energy with the use of heat wheels and pipes, solar hot water, PV systems, higher efficient equipment, and many other concepts that are pushing to be standard design practice.

The **Standards, Guidelines and Codes** track will bring to the forefront ASHRAE's work in standards and its intent on improving the built environment and its systems. Programmes in this track seek to illustrate the changes to the standards and guidelines, their projected path and good design techniques to meet or exceed the standards.

The 2013 ASHRAE Winter Conference programme includes additional tracks on HVAC&R systems and equipment, HVAC&R fundamentals and applications and refrigeration.

A special interest track – **Industrial and Transportation Ventilation** – is expected to develop into a mini-conference within the main conference.

Contact: www.ashrae.org



Last April, Heat Merchants Group was acquired by the Harleston Group, the parent company of Hevac Ltd who are leading suppliers to the Irish heating and plumbing industry. Proud to be 100% Irish, Heat Merchants Group is now committed to providing customers with the widest range of top-quality products at the right price.

Heat Merchants Group – first choice for all heating, plumbing, tiling, electrical and renewable needs



Alan Hogan,
Managing Director,
Heat Merchants
Group

As a one-stop shop for heating, plumbing, tile and sanitary ware needs, Heat Merchants Group's combined brands cover the breadth of products right across the construction sector – trade and retail customers can source every product they need through one single supplier.

Following the acquisition, customers saw an expansion in the range of products, enhanced stock availability in the branches, and an investment in the upgrading of the network of 31 Heat Merchants branches, 11 Electric Merchants, one Tile Giant and 11 Tubs & Tiles branches nationwide.

Heat Merchants

Heat Merchants is Ireland's largest supplier of heating and plumbing equipment and heating and catering spares, operating 31 branches nationwide servicing both trade and the public. It sources products from all over the world and deals with the largest manufacturers of boilers, PVC, piping, sanitary ware and much more. With the Central Distribution Centre based in Athlone, Heat Merchants always has a huge range of stock available to ensure faster, more efficient customer service.

With over 30 years experience in the heating industry, Heat Merchants, through a network of fully trained installers, can give the customer the peace of mind of knowing that the heating and water system, supplied by Heat Merchants, will be fully guaranteed. All renewable energy products supplied by Heat Merchants are registered with Sustainable Energy Ireland and are eligible for grant assistance. They offer a no obligation free design service including site visits where necessary for all renewable energy applications.

Electric Merchants

Electric Merchants aims to be one of Ireland's fastest growing electrical distributors, offering a portfolio of electrical products and bespoke service solutions, to all levels of electrical contractors, industrial maintenance staff and the general public. The 11 Electric Merchants Branches stock an expanding range of electrical equipment and accessories, providing electrical contractors and

installers with all they need to complete a project from one source.

The extensive portfolio includes wiring accessories, cable and wiring sundries, circuit protection, lamps and lighting, emergency lighting, fire and personal protection, ventilation, cable management, industrial controls and automation, security systems and much more. All branches offer reliable delivery to premises or to site and a "call and collect" service six days a week.

Tubs & Tiles

Tubs & Tiles is Ireland's premier retailer of tiles, natural stone, sanitary ware and wood flooring with 11 branches nationwide. Founded in the early 1990s, Tubs & Tiles is now one of the most stylish tile and bathroom showrooms in Ireland. All showrooms have been refurbished and are magnificently presented with fantastic arrays of bathroom and shower displays, fully coordinated with matching tiles and accessories.

As the company developed through the years so did its purchasing power, allowing the company to source products on international as well as domestic markets. In addition, Tubs and Tiles staff are highly experienced and will advise and assist customers when choosing the perfect tile or bathroom.

Tile Giant

Tile Giant was established in 2010 as Ireland's newest tile superstore. Located in Fonthill Retail Park at Liffey Valley in Dublin, Tile Giant offers a unique combination of value, quality and service. Tile Giant stocks a wide selection of natural stone, porcelain and ceramic tiles with a wide variety of colours, shapes and sizes to suit all styles and budgets.

Heat Merchants Group intends to become the first choice for the supply of heating, plumbing, renewable and electric equipment in Ireland. It is committed to providing customers with the widest range of top-quality products at the right price, coupled with an after sales service that is second to none. So whatever project you are undertaking Heat Merchants Group has the total solutions approach tailored just for you. ■

TECH

“ For us, its all about close working relationships and long term partnerships. We strive to foster and encourage this with everyone we deal with ”

FORGING STRONG PARTNERSHIPS

Having embarked on a new strategic development plan in March of this year, Tech group is already experiencing the positive results of this plan. This has resulted in new trading partnerships with major brands, leading consultants and installers, and blue-chip end-users. The overall customer base has been greatly expanded, thanks in no small measure to the “service excellence” philosophy which lies at the heart of all Tech Group activities.



Barry Hennessy

At a time when most businesses are consolidating and even downsizing, Tech Group is growing both in terms of new projects being undertaken and the additional staff being employed to fulfill that welcome extra workload.

“For us, it is all about close working relationships and the long-term partnerships. We strive to foster and encourage this with everyone we deal with”, says Group Account Manager Barry Hennessy. “Everyone from the consultant through to the contractor and ultimate end-user is looking for security, and an assurance that projects will be delivered professionally and fully supported once commissioned. The fact that we can deliver to this exacting brief is what sets us apart from our competitors. This is the very foundation on which Tech has been built”

HITACHI CHILLERS

Tech works very closely with Hitachi Ireland as its water-cooled and air-cooled systems are cost-effective to install, deliver optimum performance over a prolonged life-cycle, and are extremely energy-efficient to run.

Tech Group has an extensive and extremely diverse client base across the commercial, financial and retail sectors. This includes the likes of ESB, Paddy

Power and Topaz where it is responsible for (among other things) the service, maintenance and installation of new and replacement refrigeration systems.

It is also strong in the healthcare sector for example, the successful

installation of two Large chillers in the Blackrock Clinic earlier this year has resulted in similar such solutions currently being engineered.



Blackrock Clinic, Dublin

SUPPORTING TOPAZ RETAIL EXCELLENCE

The Cheers brand is the latest innovation in the Topaz Retail Excellence programme. Topaz, who were awarded Retail Company of the Year at the Retail Excellence Ireland Awards, are not a company that likes to bask in past achievements. Topaz are committed to their development initiative and utilising their partnership with Tech Refrigeration, they have recently completed phase two of four in the upgrading of various retail sites nationwide.

This programme sees Topaz modernise its retail locations to come inline with the requirements of their customers in today's market and to ensure that they maintain a position of retail excellence.

With the installation of new, greener, ARNEG energy efficient refrigeration cabinets, Topaz are also maintaining their commitment to operating as a leading environmentally friendly retailer. With Tech Refrigeration supplying low energy plant and cabinets to replace existing R22 equipment, this is certainly the case. Topaz planned to achieve a substantial level of increased sales from this

programme and this has been greatly exceeded. This is a direct result of their policy and commitment to work alongside their contractors to create a new experience for their customers.



We would like to congratulate Topaz on their achievements to date as a leading retailer in Ireland and look forward to partnering them in achieving future success.

HITACHI
Inspire the Next

STRENGTH WITH PANASONIC

In recent years, expectations about air conditioning systems have significantly risen with the demand now greater than ever for optimised comfort control that is energy efficient, reduces running costs, and gives maximum operating flexibility. Panasonic is a leading innovator in this respect and continuously develops innovative VRF and DX systems which incorporate cutting-edge technology.



Tech Group shares this same vision as it too strives to deliver energy-efficient heating and cooling solutions for both existing and prospective new clients.

In 2012 alone, Tech and Panasonic have worked very closely on a number of blue-chip projects. Those already completed

and in progress are **Arvato HQ**, East Point, **Ethiad HQ**, Dawson Street, and **Google European HQ**, Barrow Street, Dublin.

Panasonic
heating and cooling systems

CPD ROADSHOWS

TECH, in conjunction with its main partners Panasonic and Hitachi, has embarked on a nationwide series of CPD Roadshows to update consultants and contractors on the very latest technologies coming on stream, and to highlight the benefits they offer. Consultants in particular have expressed the view that not enough CPD seminars are available to them and Tech has devised this new series of CIBSE and Engineers Ireland-accredited CPD Roadshows to address this void.

MAINTENANCE AND SERVICE SUPPORT



Tech Group understands that, apart from comfort and performance levels, properly serviced and maintained refrigeration and air conditioning equipment saves money. Far too many building owners and facilities managers spend money reactively on the repair of building services plant when it fails, whereas if they grasped the nettle and put a tailored maintenance programme in place, failures would be eliminated.

Did You Know?

- Some equipment problems can DOUBLE operating costs without reducing comfort and usability;
- Up to 80% of all refrigeration compressor failures would be reduced if the problems that lead to the failure were corrected in a timely manner;
- A refrigerant undercharge of only 10% can increase operating costs by almost 20%;
- Refrigerant should never need to be replaced. If it must be added every year, there is an expensive and potentially hazardous leak that should be repaired;
- A dirty evaporator, condenser and blower could increase refrigeration equipment electrical usage by 50% or more;
- Just a 100th of an inch of dirt or film on an evaporator coil can reduce its efficiency by 5%;
- Unrepaired small problems can lead to very expensive repairs;
- Depending on the current condition of the equipment, a planned maintenance programme may pay for itself several times over in energy saving alone;
- Periodic safety checks can eliminate dangerous problems.

Tech Group provides tailored service and maintenance programmes to suit each individual installation. However, what they all deliver is:

- Increased comfort
- Lower operating costs
- Increased system capacity
- Longer equipment life



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e: info@techrefrigeration.com w: www.techrefrigeration.com



Enda Gilroy, Dip Eng, B. Eng, C. Eng, M. CIBSE has over six years experience within PM Group. He has significant experience in the building services industry, particularly in the pharmaceutical, infrastructural, industrial, data centres and educational sectors. He also plays a key role in design and solution with regard to sustainability, energy efficiency and LEED. Enda has extensive knowledge of building modelling and is a competent user of 3D design software packages such as IES, Autodesk Simulation CFD and TileFlow.

Boiler selection must be done in context of overall heating system

In this article *Enda Gilroy* focuses on boilers, giving a general overview of boiler technology, discussing the various forms of heat generation, analysing how different boilers tie into HVAC systems, and examining boiler efficiency and boiler controls.

There have been a lot of changes in the boiler world over the last number of years, much of which has been a drive towards greater energy efficiency. Condensing boilers are now becoming a common option; even the entry level is what used to be called “high efficiency”. You may think that one boiler is much the same as another. They all look roughly the same on the outside but there are a wide range of products on the market and the model chosen ultimately determines the efficiency of the heating system.

Boiler basics

Most heating boilers don't boil, they generally produce Low Temperature Hot Water (LTHW) at 80°C. Only steam boilers actually boil the water and they are mainly used in very large industrial sites. Some large multi-building sites operate on medium (MTHW) or even high (HTHW) temperature hot water allowing the designer to minimise the diameter of distribution pipework and hence capital costs. Some heating systems (e.g. underfloor) operate as low as 40°C and these are ideal for condensing boilers.

Space heating boilers are most commonly fuelled (fired) by natural gas but oil is still widely used and, with the drive to reduce carbon emission, biomass boilers are gaining in popularity.

EU Directives

Directive 92/42/EEC of 21.5.92, which comes under the SAVE programme concerning the promotion of energy

efficiency in the Community, determines the efficiency requirements applicable to new hot-water boilers fired by liquid or gaseous fuel with a rated output of no less than 4 kW and no more than 400kW.

New boilers, within the size range 4kW to 400kW sold in the European Union, must operate at, or above, the specified minimum percentages efficiencies as per the Directive while running at full load or part load conditions.

New heating appliances, i.e. boiler combustion chambers (bodies) and burners, are normally marketed as separate items, and must meet the relevant efficiency requirements, when they are assembled together to form a complete boiler. Table 1 indicates the minimum requirements to comply with the Directive.

Seasonal and part load efficiencies

The key factors determining the seasonal performance of a boiler is the efficiency of the plant at part load, and the load that the plant experiences in response to the seasonally varying building heating demand.

Part-load efficiency refers to the ability of a system to handle part-load energy use and it should be taken into consideration when specifying an HVAC system. Systems generally operate at their peak efficiency when they are working at their maximum capacity and most systems are sized to meet heating conditions that occur only 1% to 2.5% of the time. Because of this, systems are often oversized, rarely operate at full load, and thus do not operate efficiently. *(continued on page 24)*

Table 1 – EU Directive boiler efficiency requirements

Type of boiler	Range of poweroutput kW	Efficiency at rated output		Efficiency at power part-load	
		Average boiler water temperature (°C)	Efficiency Requirement expressed (%)	Average boiler water temperature (°C)	Efficiency Requirement expressed (%)
Standard boilers	4 to 400	70	≥ 84 + 2 logPn	≥ 50	≥ 80 + 3 logPn
Low temperature boilers*	4 to 400	70	≥ 87,5 + 1, logPn	40	≥ 87,5 + 1,5
Gas condensing boilers	4 to 400	70	≥ 91 + 1 logPn	30 **	≥ 97 + 1 logPn

* Including condensing boilers using liquid fuels. ** Temperature of boiler water-supply.

Promax HE

Rely on Potterton for energy efficiency

Global warming and climate change is an issue that Potterton is actively working to combat. In line with increasingly tough environmental standards we have developed the Promax HE range of boilers to minimise the impact that using them has on the environment.



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 (A Part of BDR Thermea Group)
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 Fax: 01 459 0880

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Up to 19% more heat from the same amount of fuel

Your customers will benefit from greater energy efficiency through lower fuel bills. Indeed, our Promax HE range produces up to 19% more heat from the same amount of fuel that a conventional boiler would use.

In addition the Promax HE range has achieved SEDBUK Band A efficiency. Furthermore, it's easy to install and service as well as being compatible with a variety of fueling options and accessories.

Now Available With 5 Year Warranty



Offer available from 1st of September to 31st of December 2012

The extended warranty offer is available across the Promax HE range and is for RGI installers only. Appliances can be registered online by joining the Works installer loyalty programme at www.works2gether.ie

The Works programme is available FREE to all RGI installers and offers business points in exchange for purchases of BDR Thermea brands such as Potterton, Santon and Heatrae.

These points can be exchanged for gifts from the Argos catalogue in shops nationwide.

Myson TRV 2-Way now TELL

Although Myson TRV 2-Way is a tried, tested and very successful product within the Myson range of controls, there is always a new demand to be met. The specifier, the installing industry and the general public are all looking for a simple means of direct comparison between one product and another.

The Myson TRV 2-Way has been around for a long time, proving its worth in simplicity of control and saving energy. Responding to industry changes Myson modified the unit to provide competence of operation whichever way the water was to flow through the valve – hence the name “2-Way”. Then the home market wanted further changes to ensure that if the valve was closed off and the radiator removed there was no danger of water being released from the valve on a cold night. Hence the positive shut-off facility.

Now that the world is demanding ever “greener” and more energy-efficient products, there is a requirement to carry a recognised label to confirm comparable efficiency in the form of a colour coded rating – a Thermostatic Efficiency Label in accordance with TELL. TELL is a product classification system of the European thermostatic radiator valve industry. The product classification takes into account all of the technical requirements and operation of the product against set standards. The classification results in a grading from A through to G with A being the top grade.

The Myson TRV 2-Way carries the TELL ‘A’ grade, a clear indicator that it meets the highest of standards. Add to this the variety of valve bodies available, with or without the addition of push-fit connections, and what you have is a Myson range that meets all of the aforementioned exacting criteria.

Myson

Newcastle West, Co Limerick

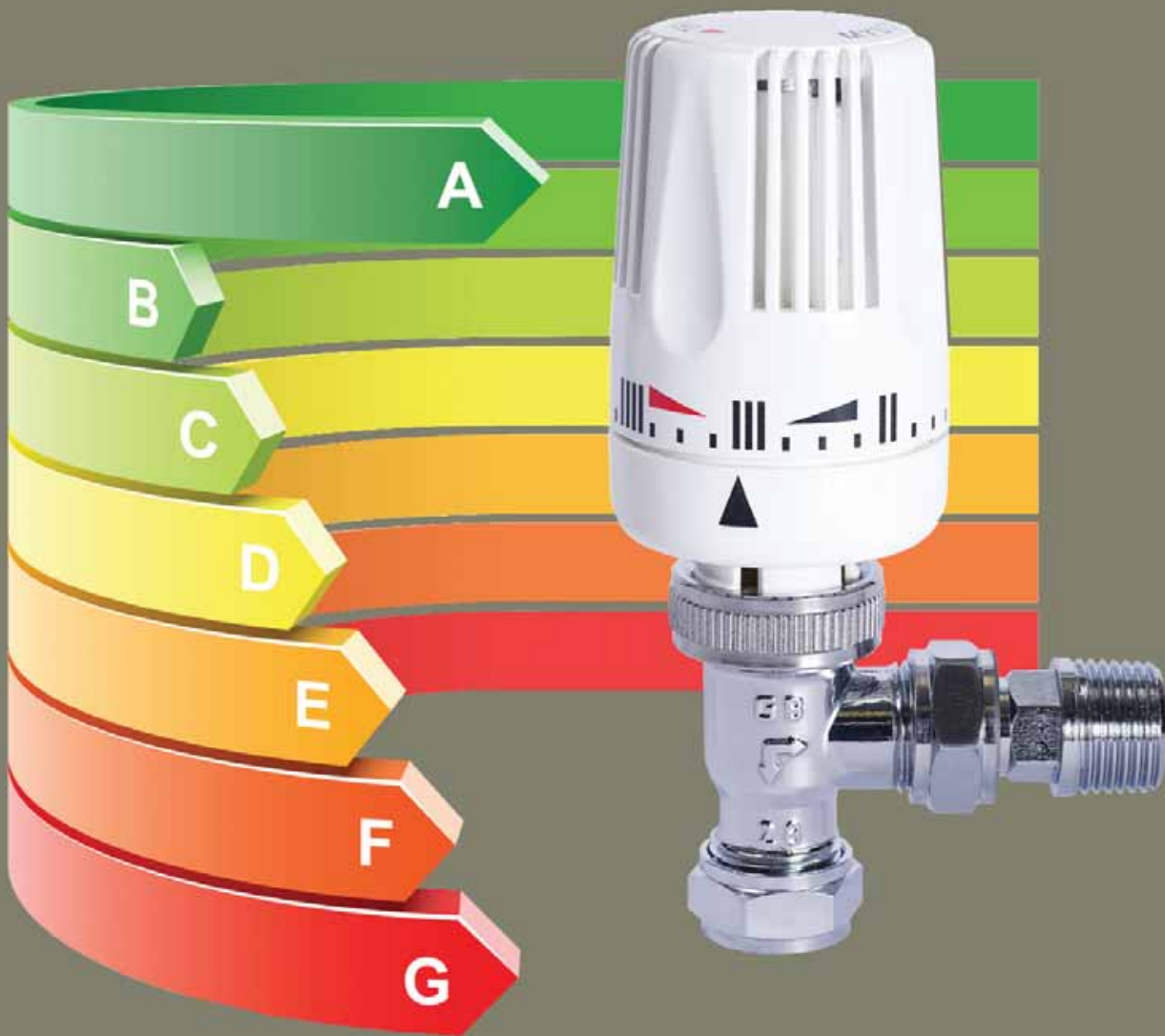
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A wide range of Thermostatic radiator valves, in sizes 1/2" to 3/4", and 8mm-22mm, with a variety of finishes. Push Fit available.

- Unique two way flow engineering
- Conforms to EN 215
- Liquid filled sensing element

(continued from page 20)

Designing for part load

Proper sizing of a HVAC system can maximise part-load efficiency. Selecting the appropriately-sized system requires an understanding of the peak heating load and the system's load profile.

(1) Determine how often the HVAC system will be running under part-load conditions;

(2) If that will be a frequent occurrence, look for a system that will be efficient for those part-load conditions;

(3) Beyond right-sizing equipment, there are system components and modular components that can be selected to improve efficiency. A few examples of these components that can operate efficiently at part-load include variable speed drive controls for pump motors; variable capacity boiler plants, and temperature reset controls for hot water.

In buildings with highly variable loads, which is common in commercial buildings, multiple, modular boilers are an option. Modular systems are more efficient as they permit each boiler to operate around maximum rated load most of the time and reduce standby losses. Other options include condensing boilers, and modulating boilers that can run at partial capacity rather than cycling on and off.

Some engineers design systems with multiple boilers – one can be sized for 75% to 80% of the design load, while another is sized for the part load (30% to 40% of the full load). Operators can then select a unit based on the energy efficiency performance and the heating needs. Careful sequence control is fundamental to this approach.

Benefits include greater energy efficiency, reduced running costs, improved load matching, built-in standby capacity, flexibility in maintenance and allowing the most efficient boilers to take the base load. Overall energy savings of 5-10% are typical.

Gross and net calorific values

There is often confusion about the presentation and use of gross and net calorific values data for heating equipment. In simple terms, the calorific value (CV) is the amount of heat released when a specific amount (weight or volume) of fuel is completely burnt in oxygen. Most commonly used fuels (oil and gas) contain hydrogen and when burnt this hydrogen is converted to water vapour that, when fully cooled, is converted to liquid water. During the process of converting water vapour to its liquid state a certain amount of heat is released.

Condensing boilers recover some of the heat in the water vapour so it is possible to achieve efficiencies greater than 100% net efficiency. This is known as the latent heat of condensation. The possibility exists for the measurement of calorific

value to include or to exclude the latent heat of condensation/evaporation, thus there are two values of calorific value for a fuel. The higher value, including the latent heat, is the "gross" CV and the lower value is the "net" CV. See Figure 1.

The two approaches are simply different scales for measuring the same. For product comparisons and sizing boilers, ensure that all the information is based on either gross calorific value or net calorific value — don't mix the two. Heat output shown on manufacturers' literature might be based on either gross or net and this can make a significant difference when specifying equipment.

Burner/boiler technology

The objective of a burner is to achieve combustion with the correct mix of fuel and air so that all the fuel is burnt efficiently. There are various types of burner, brief details being as follows:

Atmospheric burners – gas is injected through the burner which entrains the air necessary for combustion. This is the most basic and least-efficient approach, and one that the market is moving away from;

Pressure jet burners – a fan forces air into the burner, the fuel (gas or oil) is then mixed in at the burner nozzle and fired into a combustion chamber. Usually used on larger boilers;

Pre-mixed burners – gas/air is mixed before combustion in a mixing chamber, then forced through a burner and the flame sits on the burner. The main advantage of the pre-mix method is that the combustion air can be controlled very closely to achieve the correct ratio of air and gas mixture at all times. This has the effect of improving combustion efficiency.

High-efficiency boilers – These boilers generally

have low water content (and/or low thermal mass) with even greater heat exchange surface and insulation. They achieve around 85% at full load falling slightly to around 80% at 30% part load. The higher part load efficiencies make them particularly suitable for applications with a wide range of loads.

Condensing boilers – These boilers use an additional heat exchanger to extract extra heat by condensing water vapour from the products of combustion. They operate at a minimum efficiency of around 85%, even when not condensing and can achieve efficiencies in the range 85/95% depending upon the system return water temperature. Condensation begins to occur at return water temperatures below 55°C and the lower the return the more efficient the boiler. In underfloor heating systems that operate at 30-40°C they can achieve seasonal efficiencies over 90%

However, the more common approach for standard radiator systems is direct weather compensation to achieve around 88%. Constant temperature 80°C flow systems for fan coil units or air handling units are less appropriate for condensing boilers as payback periods will be less attractive.

Condensing boilers provide typical energy savings of 10/20% when replacing existing older plant, resulting in paybacks of between two and five years depending on the installation.

Boiler arrangement and system integration

The first step in achieving an energy efficient heating system is to minimise the demand for heat. The structure and fabric composition of the building will influence the heating strategy and can be designed to minimise heating energy

(continued on page 28)

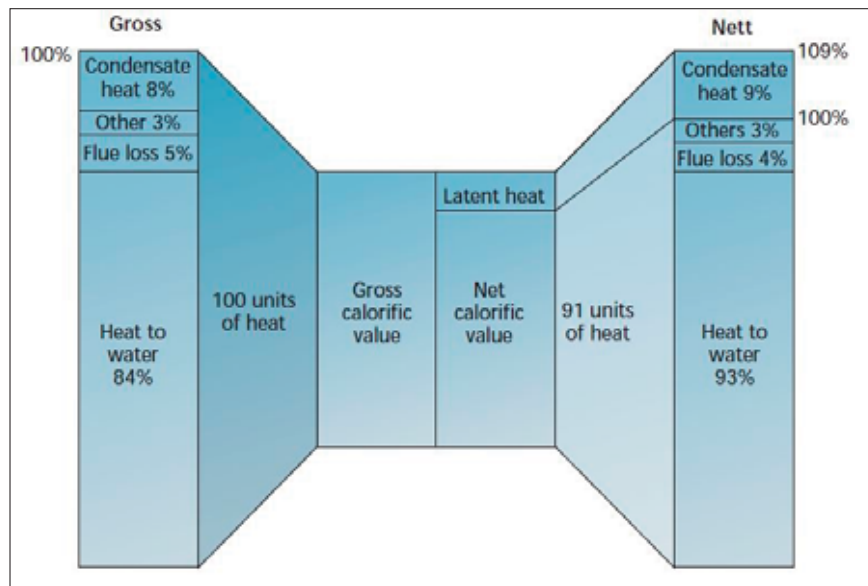


Figure 1: Gross versus net calorific value

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Wilo-Stratos GIGA, the powerful one:

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The Original 'one-stop-shop' heating solutions provider

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- Gas pressure-proving equipment
- Air and dirt separators
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- Direct and indirect air heaters
- Stainless steel flue systems
- Pumps and boosters
- Solar thermal heating
- District heating
- Biomass heating
- Geothermal heating
- Air source heat pumps
- Heat recovery ventilation
- Underfloor heating systems
- Controls, actuators and gauges
- Acoustic and thermal insulation
- Cast iron and tubular radiators
- Steel panel radiators and valves
- Fan coil units
- Water and heat meters
- Tools and workwear
- Copper tube and coil
- Sanitary ware



Hevac Ltd has a history dating back over 40 years and is Ireland's leading independent supplier of heating solutions with a portfolio of blue-chip brands from the world's most renowned manufacturers (see panel). The scope and diversity of the portfolio is enormous and caters for everything from residential schemes through to large industrial steam systems, district heating, and all manner of engineered commercial and renewable energy projects.

Complementing the strength and quality of the product portfolio is a large team of highly-qualified and experienced sales and technical engineers, who are in turn supported by in-house specialists including building services engineers, AutoCAD technicians and system design engineers.

As part of the Hevac Group the company can also call on the expertise of sister companies

Origen Energy Ltd, Tube Company of Ireland Ltd and Polytherm Heating Systems Ltd.

Another of Hevac's core strengths is the comprehensive range of copper tube held at its multi-branch outlets in Dublin and Cork. Apart from being the largest stockist of Irish size ISEN1057 and metric BSEN1057 copper tube in the country, Hevac also supplies a full range of Table Y BSEN1057 and degreased medical BSEN13348 copper tube.

When it comes to heating Hevac is the original "one-stop-shop", capable of designing and supplying fully-engineered heating systems and renewable energy solutions for every conceivable application. So, no matter what your requirement, talk to Hevac at the earliest opportunity. The outcome will be an individually-engineered heating solution capable of delivering maximum comfort and efficiencies over a prolonged and cost-effective life-cycle.

Survey, design and installation of flue systems

Jeremias flues are suitable for oil, gas and solid fuel boilers, both high-efficient or condensing. There is also a full range of flues for CHP units fired on oil, gas or biomass.

In addition, Hevac offers a comprehensive survey, design and installation service for all commercial and industrial flue systems that includes technical support, chimney sizing and complete on-site installation. This is carried out by its own qualified specialist chimney and ventilation installation team.



De Dietrich – pioneering heating innovations since 1778!

De Dietrich has been delivering pioneering heating technology solutions for nearly 250 years and today it represents one of the most innovative portfolios in the marketplace. It includes both commercial and domestic boilers, two of the latest additions being the Eco and Innovens Pro MCA ranges.

The Eco range are commercial gas condensing boilers with a silicium aluminium heat exchanger and a modulating burner which maximises the energy use no matter what the application. The total premix modulating burner guarantees optimal combustion across the entire output range thanks to a system of integrated mixing for constant air/gas ratio.



The Innovens Pro MCA is a high-technology wall-hung gas condensing boiler with an output range of 8.9kW to 114kW. A complete range of cascade systems are available with full cascade control for connection of 2 to 10 boilers.

The De Dietrich iSystem controller can operate as a mini stand-alone BMS system. This control unit can incorporate boiler cascade control, duty rotation, full weather compensation and frost protection and the control of the system secondary heating circuit and DHW tanks. The system can also be set to integrate with De Dietrich's gas absorption heat pumps, air source heat pumps or the De Dietrich Solar system.

Market-leading brands represented

- De Dietrich Boilers
- Flowair Heaters
- Hamworthy Heating
- ICI Caldaie
- IBP Conex
- Jeremias Flues & Chimneys
- Riello Burners
- Rinnai Water Heaters
- Sime Boilers
- State Water Heaters

ICI Caldaie Steam Boilers

While originally established in 1958 to manufacture industrial steam boilers, ICI Caldaie has diversified over the years into the design and manufacture of domestic and commercial hot water boilers. Energy saving and environmental protection are fundamental to every boiler in the range and the company invests substantial sums each year in research and development to maintain this position.

ICI Caldaie produces commercial steel boilers with outputs from 22kW to 3,500kW, while customised boiler plant rooms can also be provided. Then there is the LTHW boiler range which is available in modular format for siting side-by-side or stacked with cascade control. These boilers are suitable for firing on blown gas, oil-fired and dual-fuel burners.



Finally there is the range of electric, gas and oil dual-fuel steam boilers with outputs ranging from 7kW to 14,000kW.

Services provided

- Massive and diverse product portfolio
- Expert customer care and technical support
- Comprehensive installer and customer training
- Design and full AutoCAD service
- In-house after-sales service and support
- Commercial flue supply and installation



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

Unit 1, Furry Park Industrial Estate, Dublin 9. Tel 01 – 842 7037.

South Ring West Business park, Tramore Road, Cork. Tel: 021 – 432 1066.

email: info@hevac.ie www.hevac.ie

(continued from page 24)

consumption. Before designing a heating system it is essential to ask: 'Have the demands been minimised?'

There are a few useful rules to follow when designing energy efficient heating systems.

Designers should:

- Select fuels that promote high efficiency, low emissions and minimise running costs;
- Segregate hot water services generation wherever possible;
- Locate plant to minimise distribution system losses;
- Insulate pipework, valves, storage vessels etc effectively;
- Choose efficient primary plant, such as condensing boilers;
- Consider energy recovery, e.g. from air exhaust streams;
- Distribute heat effectively by avoiding excessive pipe lengths and system resistance
- Use effective controls through good zoning, effective time control and variable flow control where possible;
- Consider de-centralised heating and hot water services generation plant on large sites to reduce standing losses and improve load matching.

But:

- Avoid over-designing the heating system itself as oversizing can lead to a significant drop in efficiency;
- Ensure that the base load is provided by the most efficient plant;
- Always consider the part load efficiency of the overall system since much of the year will be spent operating at part load; ensure that large central systems do not operate to meet relatively small loads.

Using multiple boilers (modules) in one installation can improve energy efficiency by enabling a good match between boiler output and

system demand. During maximum demand on the system in midwinter, all the boilers will be firing. During periods of lower demand (e.g. spring/autumn) only a proportion of the boilers will be required to supply heat. As the load increases, individual modules are progressively switched on.

The smaller modules spend more time operating at full load compared to a single large boiler, hence, improved seasonal efficiencies. Although this is less pronounced in modern boilers, the principle remains the same, unless the plant has higher efficiency at part load (e.g. condensing boilers).

Figure 2 shows a simple heating system that can be used as a basic building block, which when it includes the following features, can often help to reach a simple energy efficient heating system:

- A pumped boiler primary circuit;
- A common primary circuit pump set (larger boilers);
- A reverse return primary circuit;
- Decouple primary and secondary circuits via a common header;
- Ensure correct set points for boiler sequence controller;
- Set boiler thermostats higher than the boiler sequence controls and ensure that adequate system pressure is available.

Condensing boilers can be more expensive than the standard boiler. To keep capital cost to a minimum while still retaining high efficiencies, it is sensible to mix and match condensing and non-condensing boilers. Other than very low temperature systems, combinations of condensing and non-condensing boilers are normally more cost effective than all condensing boilers. Specifying the lead boiler(s) as condensing, with high efficiency to top-up, optimises capital cost while still keeping overall plant efficiency high. It is common to find that 50/75% condensing plant provides the most economic approach.

Condensing boilers should always be the first choice for 'lead' gas boilers in multiple installations. In mixed boiler systems, the additional

hydraulic resistance of condensing boilers must be considered when designing boiler circuits and suitable regulating valves used to ensure balanced flows.

Always select the most efficient plant. Typical seasonal efficiencies of boiler plant are shown in Table 2.

Biomass boilers

Biomass usually refers to the use of logs, wood chip or wood pellets that are converted to heat in purpose-designed boilers. The carbon that is released during their combustion is equivalent to the amount that was absorbed during growth, and so the fuel itself is not only renewable, but also almost carbon-neutral. However, there are some carbon emissions associated with processing the wood into fuel and with its transportation.

There are many forms of biomass. This article will briefly cover wood chips and pellets for use in boilers in commercial developments. The application of wood-fired boilers to building developments, where there is a significant space heating or domestic hot water demand, offers the possibility of considerable reductions in carbon dioxide emissions, generally greater than any other currently available on-site renewable technology.

The design of wood-burning boiler installations is very different, particularly in relation to:

- physical size
- fuel handling and storage
- fuel properties and availability
- emissions and flueing requirements
- operating characteristics
- sizing of plant
- capital costs

Pellet boilers range from domestic models through to units rated at several hundred kilowatts. The level of automation associated with the boiler increases as the boiler capacity rating increases. Wood pellets are relatively easy to handle and have a much higher calorific value than wood chips, and the fuel handling systems required are much simpler.

Wood chip is a cheaper fuel but is difficult to handle and has a lower calorific value. It therefore requires a large fuel store and sophisticated fuel transport system. It is generally true that a wood chip installation can burn pellets but a pellet installation cannot burn wood chip.

Wood pellet

Pellet burning installations generally take advantage of the fact that boilers are fully automatic just like oil and gas boilers. Pellet boilers use advanced microprocessors to control the amount of fuel and air being supplied to the combustion chamber. This ensures extremely high efficiencies (up to 90%) and ultra-low emissions.

Pellets can also be burned in boilers designed to burn wood chips, which makes the technical

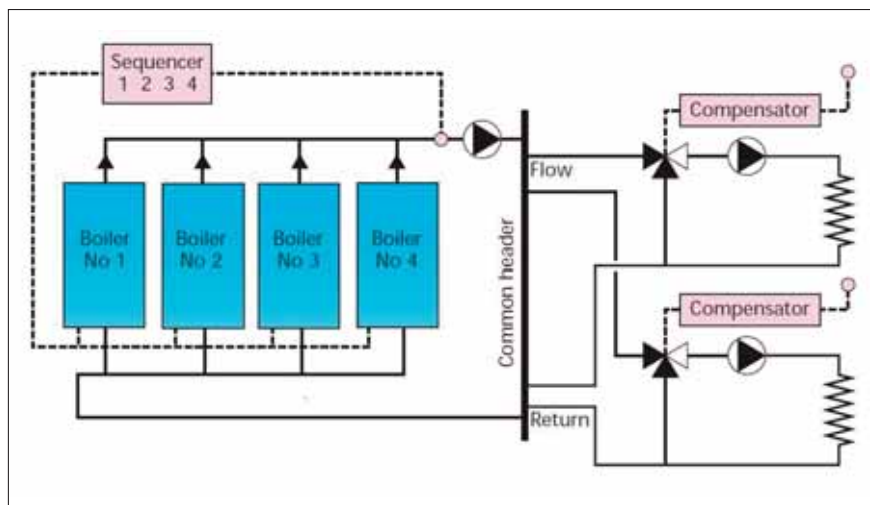


Figure 2

Table 2 – Typical Seasonal Efficiency of Boiler Plant

Boiler / system	Seasonal efficiency %
Condensing boilers:	
– underfloor or warm water system	90 or greater
– standard size radiators, variable temperature circuit (weather compensation)	87
– standard fixed temperature emitters (83 /72 °C flow/return)	85
Non-condensing boilers:	
– modern high efficiency non-condensing boilers	82
– good modern boiler design closely matched to demand	80
– typical good existing boiler	70
– typical existing oversized boiler (atmospheric cast-iron sectional)	45–70

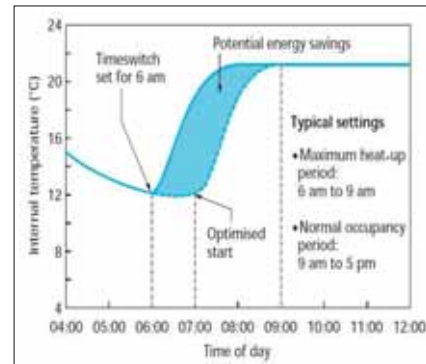


Figure 4 – Optimum start / stop.

Weather compensation controls reduce the flow temperature in variable temperature circuits as the external temperature increases, see Figure 3. The most common version requires a three-port motorised valve to control water temperature. Weather compensation can provide low return water temperatures in milder weather causing condensing boilers to operate at higher efficiencies.

Optimum start controls are weather dependent time-switches that vary the start-up time in the morning to achieve the building temperature by the start of occupancy. Heat-up times are reduced during milder weather, thus saving around 5/10% of heating energy. Optimum stop controls turn the heating system off early without compromising comfort in milder weather. Figure 4 shows the operation of optimum start controls and the potential energy savings compared with a time-switch.

It is essential to select the most efficient plant and ensure that plant and equipment are not oversized. Plant that is too large will operate further down the part load curve and hence at lower efficiencies unless it is condensing. Where possible, segregate domestic hot water from space heating in order to avoid poor summertime efficiencies. Plant sized to meet space heating and hot water will effectively be far too large for small summer hot water demands and this could reduce seasonal efficiency significantly.

Even a well-designed system can perform badly with poor controls. Conversely, you can't fix a poor heating design by just adding controls. The boilers, heating distribution and controls have to be seen as one overall system. Regularly carrying out good boiler maintenance is essential to ensure continual high efficiencies. This includes cleaning and setting up the burner, cleaning the heat exchanger to ensure good heat transfer, and setting the boiler controls correctly. ■

References

- Building control systems CIBSE Guide H
- Energy Efficiency in Buildings - CIBSE Guide F

upper limit for the application of pellet burning the same as wood chip burning. It would be economic considerations of fuel cost that would indicate a switch to wood chip burning at larger capacities.

Wood chip

Wood chip boilers are generally restricted to stepped moving grate burners which can cope with the handling characteristics and higher ash content of wood chip fuel. There are two types of stoking mechanism, which are applied differently dependant on fuel type used and the boiler capacity; the larger the boiler and the wetter the fuel the greater mechanical intervention required to stoke the boiler.

Boiler and system controls

It is very difficult to separate boilers from the heating system as the two interact to form an overall system efficiency. Equally important is the dynamic nature of heating systems with heat

demand changing almost constantly. The most efficient systems have efficient boilers, good heat distribution systems and good controls.

The key requirement is to provide heat only when and where it is needed and at the right temperature while minimising boiler cycling.

Use optimum start/stop for time control and weather compensation for temperature control, trimmed by motorised valves or TRVs for zone control. Good sequence control is fundamental to achieving an energy-efficient multiple boiler installation. In particular, careful location of the sensor in a representative part of a constant flow primary circuit is essential for stable control.

All boilers have a boiler control thermostat and a high limit thermostat for safety purposes. In multiple boiler installations these should be set much higher than the sequence controls so that they allow the sequence control to act without interference.

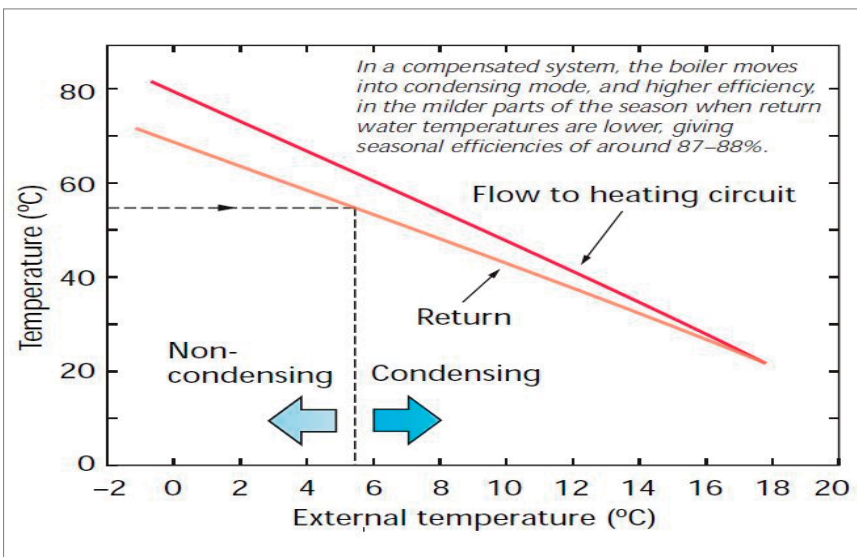


Figure 3 – Weather Compensator

Ideal Logic Training Programme



Davies custom built Ideal Boiler facility offers RGI and other suitably-qualified installers the opportunity to participate in the Ideal boiler programme.

On completion of training, installers are accredited with the ***Ideal Authorised Installers Certification***.

Speaking about the course at a recent launch Gerry Tobin, Managing Director, Davies Ltd pointed out that its first priority is to ensure that the Ideal Boiler is installed to the highest standard possible, and that the end-user enjoys all the benefits of the Ideal boilers.

Davies Training Programme covers all aspects of the boiler and allows the installer to “fit & forget”. To date almost 700 installers have been accredited and are enjoying the benefits of joining the Ideal Club.

In addition to Dublin, Davies dedicated training courses are also available in Cork, Limerick, Waterford, Portlaoise and Sligo.

For further information on Davies Training Programme schedule, and how to join “the Ideal Club”, contact idealheating@davies.ie or any of Davies dedicated Heating Sales Team on Tel: 01 – 851 1700.

Stanley Centre

Davies has just opened its new Stanley Centre which has been added to the trade counter facility and showroom at Harmonstown in Raheny, Dublin 5, where installers are welcome to bring clients and view the appliances in a home setting.



DAVIES, RAHENY

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DAVIES, KILMACANOGUE

Glencormac Business Park, Kilmacanogue, Co Wicklow
T: 01-276 5689 F: 01-276 5709
E: info@davies.ie

www.davies.ie



Peace of mind as standard from Ideal Heating

Logic System IE



- Developed especially for Irish market requirements
- Available in outputs: 15, 18, 24 & 30kW
- Suitable for low pressure systems
- 5 year parts and labour warranty
- Compact Cupboard fit
- Wide range of flueing options
- Concealed pipe connections
- Low lift weight (28kg)*
- Boiler frost protection
- Built in condensate trap
- Prewired mains lead
- Preformed copper tails
- Digital display and simple diagnostics
- Stand off kit and pre pipe options
- Fully modulating operation down to 4.8kW**
- Weather compensation kit option

* Weight with front panel removed ** (30 only - 6.1kW)



Evomax



- Large range of outputs across 7 models
- Robust & light monobloc heat exchanger
- High seasonal efficiency for lower operating costs
- 2 year parts and labour warranty
- High turndown levels
- LPG models available in 30, 40, 60, 80kW
- Low NOx emissions
- Compact - one width & height for easy siting
- Simple controls interface with large backlit display
- Frame and header kit option
- Designed for easy installation, commissioning and servicing
- Quality product through design, component selection and proving



The requirements of the new EU regulation on energy efficiency of electric motors are important minimum requirements for greater climate protection in pump application. The latest generation of Wilo pumps, the Wilo-Stratos GIGA and Wilo-Helix EXCEL series, permit previously unparalleled energy savings to be achieved in inline pumps for heating, cooling and air-conditioning, as well as for high-pressure centrifugal pumps used in water supply and pressure boosting.

New drive technology for glanded pumps

Wilo utilises EC motor technology which has proven itself over the years in glandless high-efficiency pumps and is now being used for the first time in glanded pumps. This is the most modern variant of the DC motor and allows the efficiency to be doubled in comparison to electronically controlled pumps with conventional drives.

Thanks to the new HED drive concept (HED = High Efficiency Drive), the motors' efficiency level even exceeds the limit values of the IE4 efficiency class (acc. to IEC TS 60034-31 Ed.1), the toughest criterion. Consequently, these drives significantly exceed

all future requirements of the new EU regulation on energy efficiency of electric motors.

Up to 70 % energy savings – The newly-developed series of high-efficiency pumps, Wilo-Stratos GIGA, is designed for the upper performance range in heating, air-conditioning and cooling applications, and sets new standards in energy efficiency for inline pumps. Based on a motor efficiency of up to 94%, the Wilo-Stratos GIGA series achieves extremely high overall efficiency levels in conjunction with new hydraulics that are optimally adapted to the drives.

The bottom line is that up to 70% energy savings are possible compared to installed, old pumps

without speed control. The savings potential is up to 40% compared to current electronically controlled glanded pumps with asynchronous motors, based on the “Blue Angel” load profile.

Fast amortisation – In the new Wilo-Helix EXCEL series, the high-efficiency drive also allows energy savings of up to 70% in certain applications, teamed with a correspondingly rapid amortisation period for the investment costs compared to a standard pump. The fields of application of the Wilo Helix EXCEL are water supply, pressure boosting, industrial circulation systems, process water, cooling water circuits, washing systems and irrigation systems.

For investors – Higher energy efficiency delivers additional advantages. After all, wherever the requirements of the Eco-Design Directive are not just slightly exceeded, but significantly so, the result will be seen in additional savings in electricity consumption. As a result, the life cycle costs will also be lower.

Glandless circulation pumps – It is also worth noting that due to the Directive Wilo will phase out its existing range of Top-S and SD circulators for be replaced by the Stratos Range by 1 January 2013.

This will impact on the design requirements of electrical control panels and consequently designers are reminded to consider this and plan ahead for this impending change.

For further information log onto www.wilo.ie. ■



Potterton has always actively promoted and supported legislation and standards designed to combat global warming and climate change. In doing so it has invested considerable sums in designing and bringing to the market innovative heating products that deliver significant savings in both no_x emissions and energy usage.

Potterton tackles climate change

One of the most recent examples of this policy is the Promax range of SEDBUK A-rated boilers that include system, combi and slim-line heat-only models. Potterton says that models in the range produce up to 19% more heat from the same amount of fuel that a conventional boiler would use.

Deceptively small but very powerful, the Promax HE portfolio features four models suitable for different sizes of homes, offering a choice of outputs between 12kW and 33kW. Brief details are as follows:

Promax System HE Plus – There are five wall-mounted models in this range (12kW, 15kW, 18kW, 24kW and 32kW), all fitted with a fully modulating low No_x Class 5 burner system.

Promax SL – Five wall-mounted slim-line models to suit a range of domestic applications (12kW, 15kW, 18kW, 24kW and 30kW), all fitted with a fully modulating low No_x Class 5 burner system.

Promax Combi HE Plus – Three models in the range (24kW, 28kW and 33kW) with fully modulating low NO_x class 5 burner Systems. No compartment ventilation required, removes hot water storage requirement and comes with in-built boiler frost protection and 24-hour pump exercise programme.

Promax FSB 30 HE – One competitively-priced model, fully modulating from 9.3kW to 30.2kW. Integral condensate pump fitted as standard, allowing for easy replacement. Small installation footprint – will fit under a standard kitchen worktop.

All models in the above ranges are lightweight, compact, easy to install and service, and are available with a variety of fluing options and accessories.

Potterton brings the same commitment and investment to the commercial sector. Some of the more recent models to come on stream are the Neoflo Andrews Water heaters and Eurocondense Three, the range offering the smallest-footprint, large commercial boiler currently available in the market.



Potterton Promax domestic boiler.

This year saw Potterton unveil the first commercial combi — the iHE — which has outputs of 100kW or 150kW and delivers highly-efficient heat to hot water or space heating in the first single-box solution for the commercial market. Potterton will continue at the forefront of commercial boiler technology with other innovative models such as the cast-iron condensing boiler Logocondense Carboncondense that offers outputs up to 130kW.

A new Ecoskid incorporating the Ecogen Micro CHP boiler is also available, offering the benefits of local electrical generation from operating heating.

Supporting the vast choice of Potterton domestic and commercial boilers is continuous programme of educational and tutorials which are provided by Potterton Myson Ireland at its purpose-designed training facility in Whitestown Business Park, Dublin 24.

Contact: Potterton Myson Ireland. Tel: 01 – 459 0870; email: post@potterton-myson.ie; www.potterton-myson.ie ■



Potterton Eurocondense commercial boiler.

When major remedial works were identified for Birkenburn reservoir in Scotland, the issue was how to de-water a reservoir on top of a mountain without causing silt pollution downstream.



How do you dry out a reservoir? ... Call Xylem!

Birkenburn reservoir lies high in the Kilsyth Hills in North Lanarkshire, near Glasgow. The reservoir has a water capacity of 780,592m³ and supplies water to the Forth and Clyde Canal. Like most reservoirs, Birkenburn requires almost constant upkeep and maintenance, but its location, two and a half miles up a dirt track, makes even routine maintenance a difficult undertaking.

Following an inspection by the All Reservoirs Panel Engineer a number of remedial works were identified for the reservoir, including the refurbishment of the existing discharge pipe and an upgrade to existing leakage monitoring, along with improvements to dam and spillway wave protection.

However, before work could commence the reservoir level had to be reduced by 8.5 metres from a spillway weir crest. Moreover, that level had to be maintained for the duration of the works, a three and a half month period. In addition, the flow rate had to be monitored and was not to exceed 600lps.

May Gurney, the infrastructure support services company responsible for the project, turned to Xylem to devise a plan to remove water from the reservoir without introducing suspended solids into the water discharge. The solution devised by Xylem was to install a floating pontoon at the deepest point in the reservoir.

The pontoon contained three off-electric submersible pumps powered by a temporary

generator on the bank. These were located in a basket which ensured that the suction side remained at a constant depth of 500mm below water level. This then allowed only clean water being pumped and a minimum disturbance of any silt layer.

However, a plan for de-watering without silting was only part of the problem. The key logistical issue was how to get the equipment to the reservoir. The solution devised was to have a base camp and assembly point to break up the journey, and to create an area where the equipment could be put together before installation.

The plan was for the discharge hoses from the pumps to be directed into the spillway and, as the water level fell, the pontoon would drop to the required level. The pumps would operate at a capacity of 575 litres per second, enough to overcome incoming flow and reduce the water level while keeping within the maximum output permissible.

"With this pumping solution we had to take into account the fact that the maximum discharge was only required at the start of pumping operations while the level was being dropped," says Colin Rae, Regional Rental Manager at Xylem. "Once the minimum level was achieved only maximum incoming flow needed to be pumped. Because we were locating the pumps 500mm below water level at all times, we could monitor the silt level below the pumps and stop the pumps if the silt was disturbed."

Once the pontoon and pumps were in

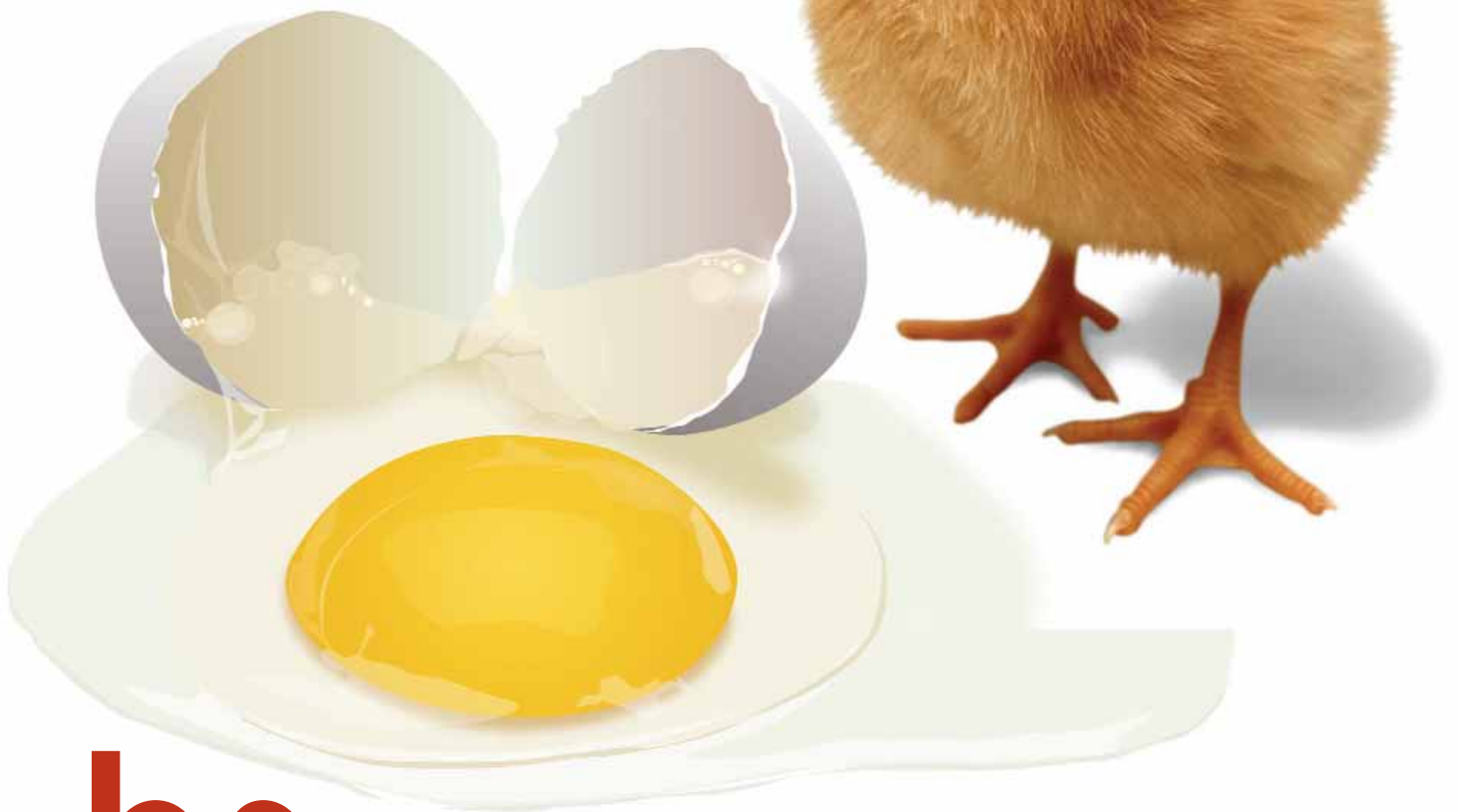
position, separate retrievable mooring blocks were lowered to the reservoir bed on lifting chains and a 2.5m length of steel cable was fitted to the mooring block with control devices attached. This ensured that once the pumps reached a level of 2.5m from the silt, telemetry signals would be sent to ensure that the pumps would stop automatically to allow manual monitoring and control to commence, and ensure no disturbance of the silt layer.

Constant water quality testing was critical to the plan. Prior to the activation of the pumps the water quality was tested within the reservoir and spillway channel. So, monitoring stations were placed in both, in the form of hand-held units, to measure turbidity and silt levels. In addition, a telemetry unit was fitted to the equipment to monitor the status of the pumps to ensure that an automatic dial-up service was activated to a series of predetermined telephone numbers 24 hours a day in the event of pump malfunction.

"We did a job that at first sight seemed impossible to do", says Terry Murray, Xylem Water Solutions Ireland. "Having done so successfully, I believe this method will now become the industry standard for de-watering a reservoir while maintaining clean water downstream."

Contact: Terry Murray, Xylem Water Solutions Ireland. Tel: 01 – 452 4444; email: terry.murray@xylem.com; www.xylemwatersolutions.com/ie

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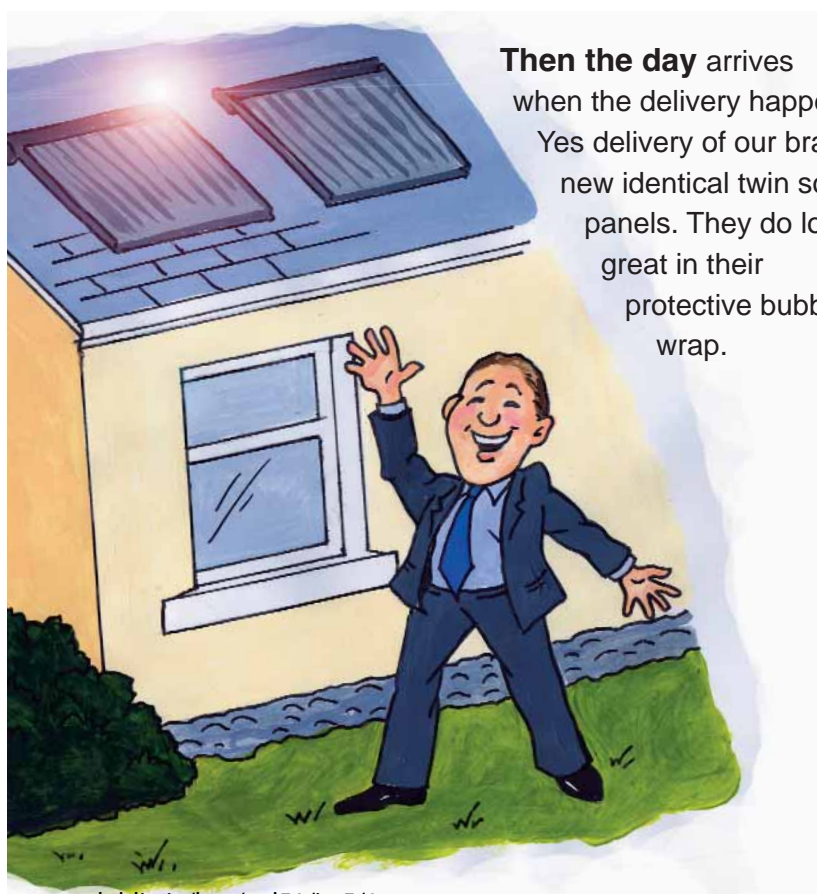



*by Paul Clancy,
Managing Director,
Potterton Myson Ireland.*

Happy householder says 'thank you' Mr Solar!

We have a new addition to the family. I have been so excited about its arrival. Sleepless nights asking the usual questions. Have we everything in place, and are we prepared? Are we sure we have all the associated equipment? Have we enough space in the attic and the garage to accommodate everything?

Two days later and I am like the proud father. Neighbours and friends call to see our new addition. Comments like "they fit so well" and "you would swear they grew there". I proudly show off what they can deliver in kw hours on the pump station with its two dials as eyes.



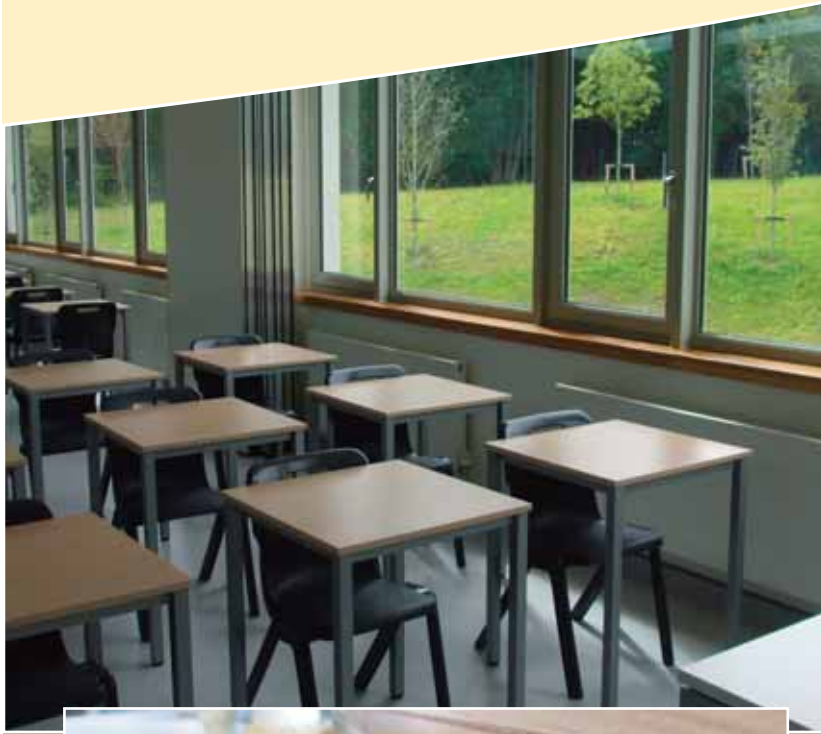
Then the day arrives when the delivery happens. Yes delivery of our brand new identical twin solar panels. They do look great in their protective bubble-wrap.

How easy they are to install. Look at the clever solar cylinder. It has two coils you know. They just added glycol to the system, proceeded to bleed the system of any air ... and a few "burps" later they were ready to go.

Every evening I am like an excited puppy. I just can't wait to see what the panels have been up to today. When its dark and their work is done I sit down with a glass of wine and, like all new parents, discuss all their positive attributes.

Yes our life has changed ... changed utterly in fact, but for the better! ■

Flat Front radiators warm up Rosemont School in Sandyford, Dublin



When specifying heating for educational institutions, it is important to consider a number of special requirements. Ensuring the correct temperature levels are achieved and maintained is just one point; it is also necessary to consider the safety aspects of radiator design and placement, as well as energy efficiency, ease of maintenance and the visual impression.

BSS Ireland is the exclusive distributor of Boss RIOpanel radiators and worked with consultants from O'Connor Sutton Cronin (M&E) Ltd on the specifications for Rosemont School. When adding a cost/benefit consideration to all of the above factors, the choice of BOSS RIOpanel Flat Front radiators, with their flat front design, excellent heat output and extremely robust build quality, made the product an ideal choice which more than complied with all the project requirements.

Flat Front is part of the comprehensive BOSS RIOpanel radiator range, which offers height, length and temperature solutions for practically any project. The contractor (Designer Group Ltd) installed more than 100 Flat Front radiators at the Rosemont School, all fitted with an integral top grille held down securely with matching fixings as per the architect's request.

Designed and manufactured in Denmark, the Flat Front radiators are a discrete and aesthetic solution for classrooms as well as common rooms and public areas. Flat Front radiators are perfectly suited for rooms where a visually-calm appearance is required without compromising performance.

BSS Ireland has a dedicated central warehouse to guarantee availability and customers can be confident of receiving the best quality products and service. Contact: BSS Ireland. Tel: 01 - 416 5100; www.bssireland.ie ■



Increase comfort and reduce heating costs with Yutampo ...

Trying to maintain comfort while reducing heating costs has always been a major challenge but it is now even more so since the introduction of EN16147. This regulation is not just a COP test but it also checks the capability of the product to ensure the comfort of the end-user.

“Consequently”, says Martin O’Brien, MIRI, Ireland’s Technical Support Engineer, Hitachi Air Conditioning Europe, “providing a minimum amount of hot water during the day is critical and so the Regulation also takes into account the tapping cycle. Hitachi’s Yutampo service water split system (COP of 3.09) was designed specifically with EN16147 in mind and can provide 375lt of useable water from the 262lt tank (useable water is considered 40°C for shower etc).

“Moreover, Yutampo is extremely competitive when compared with an oil-based heating system. Our research (see Table A) shows that it costs 62 cent for Yutampo to heat the 262lt tank, while using oil would cost €1 to do the same. On a night-time rate of electricity we would be 50% cheaper than oil, while we estimate that the supply and installation of our Yutampo



Yutampo is extremely competitive when compared with an oil-based heating system.

could also be up to 50% cheaper than installing a solar system.”

Yutampo comprises a single split heat pump outdoor unit and an indoor unit in the form of a tank. The outdoor unit is equipped with a DC inverter compressor and facilitates a water service temperature of up to 65°C (with activated electric heating). It works at an ambient temperature of -15°C to +37°C. The tank is equipped with an additional electric heater that can be switched on as required.

A legionella purge cycle automatically heats the water tank once a week to the maximum water temperature of 65°C and this can also be started manually or deactivated as required.

“Yutampo not only meets the requirements of EN16147”, concludes Martin O’Brien, “it actually sets the bar much higher and offers total comfort control at a significant cost reduction when compared with traditional heating technologies.”

Contact: Fergus Daly, Hitachi Area Sales Manager Ireland. Tel: 01 – 216 4406; email: fergus.daly@hitachi-eu.com ■

TABLE A

	Start (h:min) Tapping cycle time	Energy (kWh)	Type	ΔT desired (K), to be achieved during tapping	Min. ΔT (K), start of counting useful energy
1	07:00	0,105	Small		15
2	07:05	1,400	Shower		30
3	07:30	0,105	Small		15
4	07:45	0,105	Small		15
5	08:05	3,605	Bath	30	0
6	08:25	0,105	Small		15
7	08:30	0,105	Small		15
8	08:45	0,105	Small		15
9	09:00	0,105	Small		15
10	09:30	0,105	Small		15
11	10:30	0,105	Floor Cleaning	30	0
12	11:30	0,105	Small		15
13	11:45	0,105	Small		15
14	12:45	0,315	Dishwashing	45	0
15	14:30	0,105	Small		15
16	15:30	0,105	Small		15
17	16:30	0,105	Small		15
18	18:00	0,105	Small		15
19	18:15	0,105	Household cleaning		30
20	18:30	0,105	Household cleaning		30
21	19:00	0,105	Small		15
22	20:30	0,735	Dishwashing	45	0
23	21:00	3,605	Bath	30	0
24	21:30	0,105	Small		15
Total	11,655				

RACGS retain Refrigeration Ryder Cup

This year's annual Refrigeration Ryder Cup competition between RACGS and NRGs was held at Herons Reach, Blackpool in the UK. The summer finally arrived on the day of the competition with all matches being played in perfect golfing conditions.

While the nature of the occasion is friendly and convivial, once the teams hit the tees it becomes fiercely competitive. At the end of the day RACGS emerged the winners and retained the cup with a comprehensive victory of 10.5 to 3.5.

With old friendships being renewed and new ones being forged, the presentation of prizes and celebrations ran late into the night.

Special thanks go to the sponsors – Fujitsu, Dean & Wood, Sauermann and FSW – while NRGs Secretary Paul Airey (Fujitsu), who organised the entire event, deserves a very special mention for a job excellently done.

RACGS Lord it at Adare Manor

Sponsor: RSL Ireland

The most recent RACGS outing was held in the magnificent setting of Adare Manor where the large turnout enjoyed a wonderful day's golf and a very pleasant evening meal at which the prizes were presented. Seamus Kerr of RSL, the sponsor on the day, did the honours.

Results were as follows:

Overall winner:

Liam Hctor, H6, 31pts

Class 1

Winner: Paddy Smee, H12, 28pts;
Runner-up: Vincent Barrett, H11, 26pts (won B-9);
Third: Kevin Roden, H10, 26pts.

Class 2

Winner: Ger Darcy, H13, 30pts (won B-9);
Runner-up: Billy Qually, H16, 30pts;
Third: Stephen Mulvaney, H21, 28pts.

Visitors

Winner: Mark Connolly, H8, 38pts
Runner-up: Greg Davies, H18, 36pts (won B-9)

Front Nine: Johnny Lynagh

Back Nine: Roland Bradley

Nearest the Pin: Dave Killalea

Longest Drive: Dermot Scanlon



Seamus Kerr, RSL (sponsor) with RACGS Captain Stephen Mulvaney and Johnny Lynagh, Front 9 winner.



Seamus Kerr, RSL (sponsor) with Kevin Roden, third Class 1 and RACGS Captain Stephen Mulvaney.



CIBSE GOLF



Winners – Jones Engineering team members Alan Lynch, Fergus Weldrick, and Vincent Hickey receiving their prize from Margaret Dolan, Committee member and former Chair CIBSE Republic of Ireland Region.



Second – Grundfos team members Carl Redmond, John Redmond, Brian Harrison and Liam McDermott receiving their prize from Margaret Dolan.



Third – Mercury Engineering team members Frank Robinson, Aidan Bird, and Michael O'Carroll receiving their prize from Margaret Dolan.



Fergus Weldrick, Jones Engineering receiving the PJ Doyle Memorial Trophy from Margaret Dolan.

Weather-perfect day for CIBSE Edmonstown outing

Once again Edmonstown proved the perfect location for the CIBSE Republic of Ireland Region annual golf outing with the course in magnificent condition and the weather ideal.

The day went like clockwork and this was due in no small way to the organising abilities of Declan Kissane, Unitherm Heating Systems (and also CIBSE Republic of Ireland Region Committee member). He was ably assisted by his colleague Darren Yourell throughout.

Unitherm is also to be commended for its generous sponsorship of the wonderful array of main prizes, while Daikin is to be commended for providing all teams participating with golf balls.

The near perfect golf conditions meant that scoring was very close, though in the end Jones Engineering yet again emerged victorious. They have now won three out of four of the last CIBSE outings.

Details of the prize winners are as follows.

Overall winners: Team Jones Engineering

Runners-up: Team Grundfos

Third: Team Mercury Engineering

Nearest the pin: Tony Schofield, Flogas

Longest drive: Donacha Neary, Winthrop Engineering

Declan Kissane of Unitherm Heating Systems (and CIBSE Republic of Ireland Region Committee member) who organised the outing.



IntesisHome[®] – new app for Panasonic's Aquarea range

A new application for Panasonic's Aquarea heat pump range that lets the end-user control the temperature of the home or office from a smartphone, tablet or PC is now available. Similar to Panasonic's apps for its other ranges, IntesisHome for Aquarea can now be downloaded from the AppStore, PlayStore, Apple and Android.

IntesisHome represents a substantial change in the users' experience in the control of HVAC systems from Panasonic. From anywhere in the world, users can now easily and intuitively (without the need for specific technical knowledge) turn the system on or off, and set specific temperatures for each room through a simple touch of a button.

In addition to allowing the end-user to select the operating mode, programme the temperature for heating or cooling cycles and view maintenance reminders (such as when a filter needs to be changed), IntesisHome also supplies technical warnings and advice, including if Panasonic's technical support team needs to be contacted.

The main features for the standard (Lite license) Aquarea IntesisHome, include:

- Power cycle;
- External temperature knowledge;
- Mode: OFF / HEAT / COOL;
- Operating mode: ECO / COMFORT / POWERFUL;
- Hot water (DHW): ON / OFF;
- Temperature ACS;
- Terms of solar panels;
- Set the temperature for the function of air conditioning (cold);
- Set the temperature for the role of ACS. Optional "Advanced" and "Pro" are also available.

This new way of managing air conditioning systems in the home, business or office follows the philosophy of the *Panasonic Eco Ideas* concept. Besides providing the

maximum comfort, it delivers advanced solutions aimed at promoting the optimisation of energy savings.

Panasonic's distributors, installers, engineers and specifiers can also benefit from the *Panasonic ProClub*. This is a feature-packed new portal with a wealth of technical data, software and support tools. It can be found at www.PanasonicProClub.com.

The website contains detailed information

on Panasonic heating and cooling products and offers users access to the latest news, product developments, training programmes, technical data and installation manuals, as well as the most up-to-date software and installation guides. Special promotions will also feature regularly.

Panasonic ProClub will shortly include an e-Learning site where heating and cooling professionals, such as consultants and installers, can participate in product training courses and find out full information on specification, installation and maintenance.

There is also helpful business advice, such as ideas and guidelines for showroom decoration or van livery featuring Panasonic logos and display material, all of which are available to download.

Contact: Vincent Mahony,
Panasonic Ireland. Tel: 01 – 413 5311;
Mobile: 087 – 969 4221;

email: vincent.mahony@eu.panasonic.com ■



“ This new way of managing air conditioning systems in the home, business or office follows the philosophy of the Panasonic Eco Ideas concept ”

ManagementWorks, a new management development network, has been established to help SMEs to improve their business performance by building and enhancing their management capabilities.



ManagementWorks
Learn Lead Succeed

Manage your business with ManagementWorks

Background

The Government recognises that the success of the SME sector is critical for economic recovery and that supporting the SME sector is vital for both the retention and creation of jobs. The establishment of ManagementWorks, a new management development network for SMEs, is one of the support measures identified in the Action Plan for Jobs 2012. It concluded:

“Investment in management skills is vital from both a business development perspective and from a human capital perspective. Research has shown the positive impact of management capability on firm survival, growth, productivity and turnover. Management skills are crucial for firms adapting their business offerings, or moving into new markets, as well as for firms striving to be innovative”

The goal of ManagementWorks is to assist firms to grow in terms of their sales, output and employment by providing a range of subsidised, tailored management development programmes which are supported by professional business mentors.

Programmes

ManagementWorks has developed a suite of programmes and is rolling these out countrywide. The programmes are designed to impact significantly on each participating firm’s performance. They enable owner-managers and their management teams to take time to work on their businesses in a structured environment – time to reflect, plan and implement changes in what they do and how they manage themselves, their team and the business.

The programmes are heavily subsidised and are being delivered by experienced providers, each with a proven track record of delivering high-impact programmes for the SME sector. Support from an experienced professional mentor is an integral part of the programmes. This is to make sure that SME managers are given the support required to immediately apply what they learn on the programmes to their own business. “Our goal is that our programmes will have an immediate and ongoing business impact” says Southern Regional Manager, Enda Hogan. “SME Managers need to be able to see a clear return on the time and money they invest in our programmes.”

Summary details of two of the core programmes are given elsewhere on this page. Further details of these programmes, together with details of the IMI Diploma in Management Programme and the Operational Efficiency Boot Camp, are available on the ManagementWorks website at www.managementworks.ie

Enda Hogan can also be contacted directly at 086 - 837 2388 or e.hogan@skillnets.com

Managing Director Action Programme

Takes place over a six month period and includes:

- Monthly facilitated workshops focusing on the key areas affecting your company’s performance;
- Development of a clear plan of action for your business to drive improvement in sales, costs, operations and people performance;
- A series of small group and individual mentoring sessions to ensure significant progress is made with respect to the specific challenges facing each manager and his/her company;
- Each participant is a successful business owner to ensure strong compatibility, learning from peers and an opportunity to develop effective collaboration among other business owners.



Enda Hogan

Management team development programme

Takes place over a six month period and includes:

- Up to 12 facilitated workshops on the key areas of effective leadership with an emphasis on: increased self awareness, personal growth, and the development by the management team of effective company behaviours which will deliver a dynamic culture for achievement;
- Up to eight in-company executive coaching sessions ensuring learning from workshops is actively applied and that the performance and contribution of each of the managers is greatly improved;
- Each participant is a successful business owner or experienced manager in his/her company, to ensure a strong compatibility and learning from among peers and the opportunity to develop effective collaboration among business peers.

Carrier 39SQ Airostar units are dual-flow air handling units equipped with a high-efficiency air-to-air heat exchanger and a control system for a plug-and-play installation.

Carrier Airostar AHUs with energy recovery

The units are specially designed to ensure economical extraction of indoor air, and to take in fresh air to meet current and future requirements for high energy-efficiency buildings.

The Airostar units are available in two versions:

- High-efficiency 39QC units with counter-flow plate heat exchanger and high-efficiency 39QR units with rotary heat exchanger;
- Standard-efficiency 39SQP units with cross-flow plate heat exchanger to ensure perfect leak-tightness between the extract air flow and the supply air flow.

Energy savings

The heat exchanger reclaims up to 90% of the heat from the extract air and transfers it to the supply air, considerably reducing the thermal load on the heating and air conditioning equipment.

The direct-drive fans do not suffer any belt and pulley drive

losses, are more energy-efficient, and require less maintenance.

The extract and supply air fan speed is independently controlled by frequency inverters.

The control system permanently adjusts the fan speed based on the supply duct pressure, or on a CO₂ rate sensor, to take in the correct fresh air quantity required in the building, and to minimise power consumption.

If the outside air temperature is below the room temperature during the night, outside the heating periods, the Airostar is automatically re-started in the free-cooling mode to ensure pre-cooling of the building and to limit the cooling requirements during the day.

Main features and benefits include quick and easy plug-and-play installation; complete design flexibility; high-quality casing units; technical data compliance in accordance with Standard EN 1886.

Pro-dialogue AHU control

All Airostar units are equipped with a control box that is integrated into the unit and contains the electrical and control components. This pro-dialogue AHU control combines intelligence with operating simplicity. It constantly monitors all operating parameters and precisely manages the operation of the air-to-air heat exchanger, the fan speed and the opening of the coil control valves, in order to optimise energy efficiency.

The control also includes a web server as standard that allows access to the configuration and operating parameters via simple-to-use internet navigation software. Icons accompanied by clear text messages intuitively guide the users.

In addition, the system offers several consultation or parameter modification levels with password-protected access.

The new back-lit pro-dialogue+ user interface is equipped with a control potentiometer that guarantees legibility in all lighting conditions. The information is clearly displayed while navigation is via menus similar to those on a web server.

The interface can be installed in the unit control box or remotely at up to 300m distance. If the units are connected by a communication bus in a network, a single interface can be used for the complete site.

Contact: Austin McDermott,
Core Air Conditioning.
Tel: 01 – 409 8912;
email: Austin@coreac.com ■



back issues

Air Conditioned Jackets!

The idea of personal air-conditioning is that cooling is needed only for people, not the entire room. The two electric fans in the Kuchofuku jacket can be controlled to draw air in at different speeds, giving the garment a puffed-up look. But this has not deterred those happy to be cool rather than "hot" when it comes to fashion.



The fans are connected to a lithium-ion battery pack that lasts for 11 hours on a single charge. It consumes only a fraction of the power used by conventional air-conditioning and can deliver 20 litres air per second throughout the jacket.

This circulating air then escapes through the collar and cuffs, drying off sweat. Any takers?

Josh's arrival rocks O'Brien

Congratulations to Martin

O'Brien, Hitachi Ireland's Technical Support Engineer (and of course his wife Simone) on the birth of recently-arrived baby son, Josh.

Both Simone and daughter Emma (18 months) are coping very well but I hear tell

that Martin now goes to work for a rest!

Loyalty does work!

RGII installers can now benefit from Works, the online installer loyalty programme from Potterton Myson. This new scheme enables installers to enjoy rewards while also benefitting from extended warranties on product ranges such as Potterton, Baxi, Heatrae Sadia and Santon.

This loyalty scheme rewards two-way communication between installers and the manufacturer and enables Potterton Myson provide real support for customer's businesses.

Check it out at www.works2gether.ie

To the Manor born (or maybe not)

Would you look at the pose of Seamus Kerr and Dominic Ward in front of the magnificent Adare Manor? Guys, if you want to portray yourselves as Lords of the Manor, you could at least dress the part!



Women in cleantech? ... now that's sexist!

Women in Cleantech Forum is a specialist network that brings together female executives who work within the green industry sector. Its focus is on collaboration, connecting women who work in cleantech, and those who wish to, in order to promote innovation and growth within the industry.

Can you imagine the reaction men would get if they established a group called Men in Cleantech Forum? I'm all for encouraging more women into the building services sector but this type of so-called positive discrimination just doesn't wash.





Air Treatment 39SQ

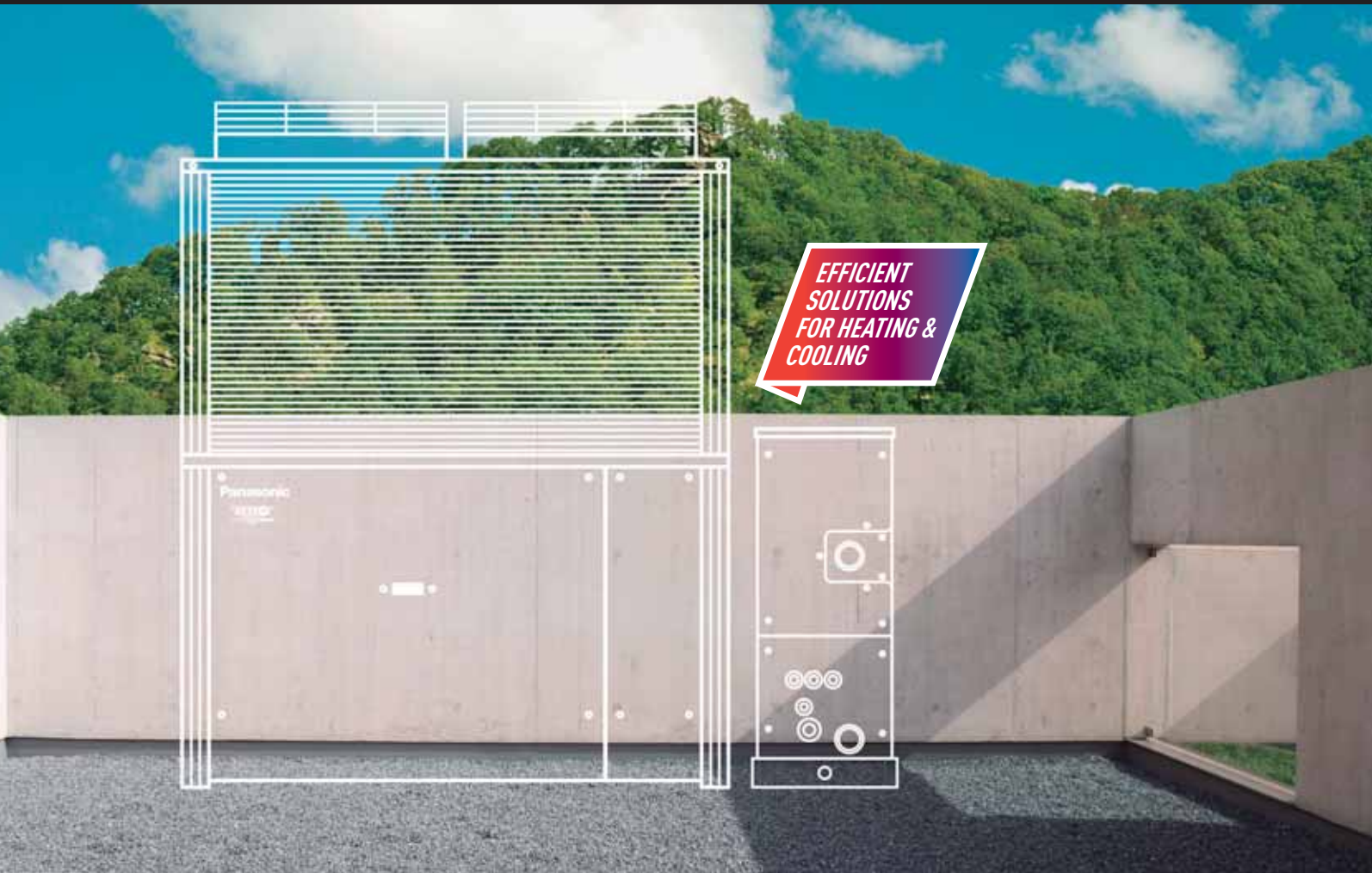


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POWER SUPPLY PROBLEMS? PANASONIC'S GHP IS THE ANSWER...

THE PANASONIC GHP SYSTEM IS THE RIGHT CHOICE FOR EFFICIENT, GREEN VRF SOLUTIONS

The new Gas Heat Pump from Panasonic is the ideal solution for projects with electricity supply problems:

- :: operates with LPG or natural gas
- :: single-phase power supply only required throughout the range
- :: lower running costs
- :: operates down to -20°C ambient with no loss in heating capacity
- :: no defrost cycle required
- :: "free" hot water available on 2-pipe units
- :: suits most applications due to large capacities (from 45 to 142kW)
- :: can be connected to all indoor units and controls from Panasonic ECOi lineup
- :: can also be connected to a Panasonic water heat-exchanger for chilled and hot water production

At Panasonic we know what a great responsibility it is to install heating and cooling systems. That is why we design systems to make your buildings work.

Call 01-413 5311, email vincent.mahony@eu.panasonic.com or visit www.panasonic.ie/aircon for more details



ECO G

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