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## BS News January/February

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# bs news

building services news

January/February 2012

## the energy show 2012

RDS Dublin 28th-29th March

### Impact of Regulation on ...



**Pumps and  
Circulators**



**AC and  
Refrigeration**



**BIM – the  
way forward**

# High Efficiency <sup>2013</sup>

The ErP Directive is coming in 2013.  
The products for it are already here.

*From 2013, the ErP Directive will turn the heating pump market on its head. The **change to high efficiency** is already paying for itself.  
Info: [www.wilo.ie/he](http://www.wilo.ie/he)*

Uncontrolled pumps turn out to be real energy-wasters, using billions in extra electricity every year. It's a good thing then that more than 90% of these power-guzzlers will soon become scrap. The EU are making sure of this with the ErP Directive for energy efficiency, which is gradually coming into power for glandless pumps from 2013 and it is already effective for glanded pumps in 2011. Better yet, you can start today to reduce your footprint on the environment and relieve household budgets. With Wilo high-efficiency pumps.

More info about high efficiency at [www.wilo.ie/he](http://www.wilo.ie/he)



*Pumpen Intelligenz.*

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## bs news

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## opinion

### If you want to stay ahead ...

Today more than ever, information and knowledge is the key to business success – forewarned is definitely forearmed. This is particularly true in respect of building services where legislation and regulatory controls governing harmful emissions and energy efficiencies are changing at an alarming rate.

Consequently, this issue of *bs news* is crammed full of specially-commissioned articles which will prove invaluable to consultants, contractors and domestic installers trying to unravel the maze of compliance issues they now have to deal with.

For instance, IRI President Dave Killalea looks at the challenges facing the refrigeration and air conditioning sector as a preview to a 14-page feature;

Brian Huxley, Director, BPMA examines the implications of the Energy-Using Products Directive 2005/32/EC and Energy-Related Products Directive 2009/125/EC on the pump sector;

Dympna Mullaly, Contracting Executive responsible for the Mechanical & Electrical Division of the CIF looks at the minefield surrounding collateral warranties.

Consultants, contractors and domestic installers will also learn a great deal from the Energy Show and CIBSE Conference previews, in addition to the latest installment in our ongoing BIM series.

Then there are the usual news and product information pages, plus regular features such as Plumbing Tips and Back Issues.

Whatever your interest in building services, this issue of *bs news* serves as a road map to your future prosperity. ■

News and Products

## Heat pump market statistics

*Outlook 2011 – European Heat Pump Statistics* is the title of the latest statistics report from the European Heat Pump Association (EHPA). It covers 20 heat pump markets plus Canada, China, Japan and the United States of America in 2010.

The market analysis and statistics provided points to one key message for stakeholders – even in difficult times, the European heat pump markets continue their development.

Stakeholders also assess the development in 2011 positively. Obviously though, the situation from country to country differs enormously.

Overall, the European heat pump sector witnessed a challenging market environment in 2010. It was characterised by a multitude of factors, some of which were positive and others that impacted negatively on heat pump sales. Total sales in the 20 countries covered – including Ireland – has reached 752,106 units though the market showed a slightly negative trend.

See [www.ehpa.org](http://www.ehpa.org)

## Shhh! ... it must be Mitsubishi Electric

Mitsubishi Electric's Zen and Ecodan ranges have received the official backing of the Noise Abatement Society which has just awarded them the new *Quiet Mark* of approval.

The *Quiet Mark* is a new stamp of approval awarded by the Noise Abatement Society to worldwide manufacturers of the quietest products currently available and is validated by the Association of Noise Consultants.

Products awarded a *Quiet Mark* are featured in the online directory, [www.quietmark.com](http://www.quietmark.com)



## €76 million for Better Energy Scheme 2012

**The Government has** committed up to €76 million in support of the Better Energy Scheme for 2012.

During the year the scheme is expected to fund measures to upgrade the energy efficiency of a further 17,000 low-income homes, as well as offering grant support to many other home owners to invest in the retrofitting of their own homes.

Minister Pat Rabbitte commented: "The scheme is designed to support the energy efficiency upgrades of one million homes, businesses and public buildings. There has been a strong response and this should lead to healthier homes as well as a significant level of construction sector employment."

## Hevac takes student to France



**Further to its collaborative effort with DIT to encourage the development and learning experience of DIT building services students (see bs news Nov/Dec 2011), Hevac invited star student James Cornally to join them on a recent factory visit to DeDietrich in France. James participated in the two-day CPD presentation and received a CPD certificate on his return. Picture shows David Doherty, Technical Sales Manager, Hevac with Philippe Matter, DeDietrich Technical Trainer, James Cornally, DIT student and Karl Carrick, Director, Hevac.**

## Hans-Joachim Früh remembered

**Hans-Joachim Früh**, a member of the Supervisory Board of Wilo SE and Head of the Caspar Ludwig Opländer Foundation, died recently in a tragic accident at the age of 68.

As a member of the Supervisory Board, Mr Früh contributed to the success of Wilo with his creative spirit, unwavering commitment and many years of valuable experience. As head of the Caspar Ludwig Opländer Foundation, he showed great curiosity and openness for all areas of civic life and held discussions with scientists, artists, cultural managers and athletes.

Bringing together people and subjects intelligently was a particular motivation and also an important social concern to him.

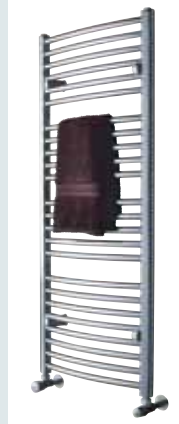
*bs news* joins with the industry in extending our deepest sympathies to his family and relatives and, everyone who was close to him.



## News and Products

## Myson expands Avonmore range

Myson has expanded its range of Avonmore multi-rail towel warmers. The new 400mm chrome, straight-rail



Avonmore adds to the already-extensive classic range, giving an option which brings warmth and style to smaller rooms.

Suitable for indirect/closed heating systems and dual fuel option, Avonmore is now available in three widths – 400mm, 500mm and 600mm; and three heights – 862mm, 1222mm and 1807mm.

Vincent Broderick of PMI, said: “The Myson multi-rail range is very popular, so this expansion is going to

open up the Avonmore model to an even wider market.

Contact: Potterton Myson Ireland.

Tel: 01 – 459 0870; email: sales@potterton-myson.ie

## IRI membership drive

As another year dawns, the Institute of Refrigeration Ireland (IRI) has launched a drive for new members. As part of this initiative it has located display banners at all refrigeration wholesaler premises throughout the country. Membership benefits include:

- Improving your knowledge and skills;
- Gaining recognition for prior experience and training;
- Keeping up-to-date with new technologies, new legislation, etc;
- Networking with fellow industry professionals.

Contact: Colin Huggett, IRI Secretary. Tel: 085 -146 5213.  
www.instituteofrefrigerationireland.ie

## Hitachi demos at SelfBuild, Belfast

Hitachi demonstrated a broad cross-section of renewable heating equipment and technologies at the recent SelfBuild & Improve Your Home show in Belfast.

Featured were Hitachi's Yutaki-M heat pumps which have Microgeneration Certification Scheme (MCS) approval and are available with outputs from 5kW to 17kW, and the Yutaki-S range with its multiple heating and cooling settings and capacities from 5kW to 24kW.

Fergus Daly, Hitachi Area Sales Manager, Ireland, said: “Needing to be energy efficient to protect our environment has been given more impetus recently by rising costs and the increasing need to reduce energy bills. Those looking for alternative ways to heat their buildings will find that Yutaki fits the bill, and it is simple to install.

Contact: Fergus Daly, Tel: 01- 216 4406;  
email: fergus.daly@hitachi-eu.com



## PMI Seeks Service Engineer/Administrator

Potterton Myson Ireland (PMI)

– part of the BDR Thermea Group – seeks to appoint a Service Engineer/Administrator.

The successful candidate must have relevant qualifications (GID or equivalent), be experienced in the sector, and demonstrate an ability to carry out effectively, and efficiently, service repairs both in and out of warranty, while also promoting and selling PMI's service maintenance contracts against agreed targets.

As the role involves a great deal of communication with end-users and/or installers, it is essential the person appointed to the position can speak with authority, and instill a sense of confidence, when dealing with issues which may arise. A high degree of diplomacy is essential in this role.

### Key Tasks

- › Compile and accurately complete all areas of administration covering service records through to quality reports;
- › Carry out service repairs to BDR Thermea products both inside and outside the warranty period;
- › Carry out chargeable repairs where appropriate;
- › Deliver training programmes;
- › Promote at all times goodwill for BDR Thermea when dealing with customers, installers, stockists, merchants, etc.

The position carries a remuneration package commensurate with the responsibilities of the role.

Application letters, along with CVs – marked for the attention of Fidelma Cowzer – to arrive no later than Wednesday 21 March 2012.

### Potterton Myson Ireland Ltd

Unit 7 Whitestown Business Park, Tallaght, Dublin 24, Ireland  
Telephone: (01) 459 0870 Fax: (01) 459 0880  
Email: post@potterton-myson.ie  
www.potterton-myson.ie

News and Products

## Marketing skills and business management for installers

**Business management, sales** and marketing strategies, and customer service skills are the subject of a new course being provided by METAC, the Mountrath-based training body which caters specifically for the needs of Ireland's building services sector.

In addition to a broad-range of technical and practical skills-based courses, METAC also offers a suite of business-related courses, the content of the latest reflecting a growing need within the industry.

The aim of the course is to provide installers with the skills and knowledge to run and market their

businesses more effectively by utilising facilities already at their fingertips to market and promote themselves in a smart and cost-effective manner.

Also included is training on a specially-devised business development software package which in turn can be purchased at a very preferential rate.

The duration of the course is five days and it will be delivered at METAC's dedicated training centre in Mountrath, Co Laois. Fee is €950 for two people.

Contact: Dominic Dunne, METAC.  
Tel: 057 – 875 6540;  
email: info@metac.ie

## Light+Building, Frankfurt

**Around 2,100 exhibitors** will take part in Light+Building at Frankfurt Fair and Exhibition Centre (15 to 20 April 2012) with nearly 200,000 architects, consulting engineers, designers, planners, and installers from all over the world expected to visit.

Every two years, the industry presents its latest innovations for the fields of lighting, electrical engineering and house and building automation at Light+Building and the theme for 2012 is energy efficiency.

At the fair everything will be represented, from LED technology, via photovoltaic and electro-mobility, to intelligent electricity usages with smart metering and smart grids. Thanks to the combination of lighting and networked building services technology, companies will present an integrated spectrum of products and services that make a decisive contribution to exploiting the energy-saving potential of buildings to the full.

Contact: [www.light-building.messefrankfurt.com](http://www.light-building.messefrankfurt.com)

## Construction resumes at NUI Galway

**An estimated 400 jobs** are expected to be created in the construction sector as work begins on five new buildings valued at €75 million at NUI Galway.

The university has awarded a contract to JJ Rhatigan & Co for an Arts Humanities Social Sciences Research Building, and two buildings dedicated to biomedical science research. These



buildings, which had been temporarily stalled by the receivership of a previous contractor, will be completed on a phased basis from the end of 2012 into early 2013.

Work has also got underway on two other buildings on the NUI Galway campus – an €8 million extension to the Arts Millennium Building and an extension to the student branch of the Bank of Ireland.

## Wilo Ireland ErP initiative



As part of Wilo Ireland's plans for conformity with the new ERP Directive, the company hosted a series of regional seminars which were attended by design engineers from various engineering practices and locations around the country. As a thank you gesture to participants at these seminars, Wilo organised a raffle for two Christmas hampers, with the winning tickets being drawn by Pat Lehane, Editor, bs news, in the company of Derek Elton, Wilo Ireland Sales Manager. The lucky winners were Declan Doyle and Seamus Holohan.

## RACGS 2012 programme

- Friday 30 March, Bunclody Golf Club
- Friday 18 May, Dundrum House Hotel & Golf
- Friday 29 June, Glasson Hotel & Golf
- Friday 7 September, Adare Manor
- Friday 21 September, BTU v RACGS, Baltray
- Friday 19 October, Portmarnock Links

## News and Products

## Glandless circulating pumps: future is high-efficiency

CPL is one of the UK and Ireland's leading suppliers of small circulating pumps and, as with all pump suppliers, it recognises the changes that are coming from 2013 as part of the EU ErP (Eco-Design) Directive. Consequently, it will be updating products to suit market requirements before the first deadline for change of 1 January 2013.

The total electricity consumption of all glandless circulating pumps operated in the European Union for heating and air conditioning – the normal small circulating pumps – is to be halved by 2020. This is the objective of an EU ordinance under the European ErP (Eco-Design) Directive which will regulate the energy efficiency of this type of pump, from 1 January 2013 onwards, with a further tightening of requirements planned for 1 August 2015.

In order to achieve this goal the EU ordinance prohibits the sale of technically outmoded, inefficient pump models from 2013 onwards. This will mean a ban on sales of about 90% of the glandless circulating pumps that were on the market in 2009. The reality is that the new efficiency requirements will be practically impossible to achieve without using high-efficiency pumps with EC motor technology.

Electronically controlled glandless circulation pumps with maintenance-free frequency converters automatically adjust their power to the changing operating status of the heating system. Especially in the partial load range, which makes up as much as 94% of the operating time of a heating pump, a considerable reduction in power consumption can be achieved compared to an uncontrolled pump.

In addition, they have what are known as electronically commutated motors (ECMs). These make it possible to double the efficiency compared to electronically controlled pumps with conventional drives.

A change to high-efficiency pumps before 2013 will make a contribution to energy efficiency in heating systems, to energy costs in properties, and contribute towards climate protection in Europe. It is a fact that the electricity saving potential of up to 90% offered by these pumps compared to pumps without speed control makes them so attractive to some customers that they are already swapping them for their "old energy guzzlers" in advance of the deadline, which is good for everyone.

Contact: Potterton Myson Ireland.

Tel: 01 – 459 0870; email: sales@potterton-myson.ie

# the energy show 2012

RDS Dublin • March 28<sup>th</sup> and 29<sup>th</sup>



## DISCOVER A WORLD OF BUSINESS ENERGY SOLUTIONS

See the latest sustainable energy solutions at the Energy Show 2012. Organised by the Sustainable Energy Authority of Ireland (SEAI), it's a must for businesses interested in the latest innovative products and services.

Why not attend one of our popular seminars to learn about energy saving opportunities. Better still, book early and get a discount on all seminars.



Follow us online



To find out more, visit:  
[www.seai.ie/energyshow](http://www.seai.ie/energyshow)



BOOK NOW

Chartered Institution of  
Building Services Engineers  
(Republic of Ireland Region)



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[www.cibseireland.org](http://www.cibseireland.org)



CONFERENCE  
2012

Hogan Suite, Croke Park  
Conference Centre, Dublin

6 MARCH 2012

Chartered Institution of  
Building Services Engineers

# Engineering Opportunities – an Integrated Approach



# CONFERENCE 2012

Hogan Suite, Croke Park  
Conference Centre, Dublin

6 MARCH 2012

## CONFERENCE PROGRAMME

- 08.00 Registration and Coffee**
- 08.45 Welcome**  
Derek Mowlds, Chairman, CIBSE Republic of Ireland Region
- 08.50 Opening Address**  
Andy Ford, CIBSE President  
*Session 1 Chair:*  
Philip Lee, Philip Lee Solicitors & IGBC
- 09.00 Public Sector Project Procurement and Associated Contracts**  
Edward Quigg, Quigg Golden Associates
- 09.25 International Opportunities for Engineers**  
Pat McGrath, Deputy Chairman, International Development PM Group
- 09.50 Q & A/Discussion**
- 10.15 Networking/Coffee**  
*Session 2 Chair:*  
Dr. Kevin Kelly, DIT Kevin Street
- 11.15 Commissioning of New Buildings and Lessons Learned at UCD**  
Sean Clancy, Commissioning Manager, UCD
- 11.40 Post Occupancy Evaluations**  
Dr. Robert Cohen, Technical Director, Camco, and advisor to CIBSE on TM22
- 12.05 Q & A/Discussion**
- 12.30 Networking/Lunch**  
*Session 3 Chair:*  
Jim Gannon, RPS Group and Chairman of Energy Environmental Division, Engineers Ireland
- 13.30 Passive Building Design**  
Art McCormack, Mosart
- 13.50 Review of Renewable Heating Systems in a Residential Retrofit Project**  
Greg Traynor, JN & G Traynor & Partners
- 14.10 LED Lighting Design Applications**  
Paddy Craven, Craven Lighting and formerly Senior Engineer Dublin City Council
- 14.30 Q & A/Discussion**
- 14.55 Networking/Coffee**  
*Session 4 Chair:*  
Alan Hoare, Construction IT Alliance & DIT
- 15.15 BIM Developments Internationally**  
Richard Shennan, Global BIM Director, Mott McDonald
- 15.40 BIM Case Study**  
Keith Mellon, Ethos Engineering
- 16.15 Q & A/Discussion**
- 16.30 Conference Close**

## Application Form

CIBSE CONFERENCE 2012

Hogan Suite, Croke Park Conference Centre, Dublin

6 MARCH 2012

Name .....

Company .....

Email .....

Telephone .....

**Cost:** (Tick as appropriate)

Members and non-members  €95

Unwaged  €45 Students  Free

**Payment:** (Tick as appropriate)

Cheque  Credit Transfer

For credit transfers contact Sean Dowd at tel. 01 – 442 9049.

Please return completed form accompanied by cheque (if using cheque option) for the appropriate amount made payable to CIBSE (Ireland), to:

Sean O'Dowd, Dowd Energy & Engineering, Glenair Stables, Priors Road, Delgany, Co. Wicklow.

email: sean@dowdenergy.com

# Open up to smart energy solutions at The Energy Show 2012



the  
energy  
show 2012

The Sustainable Energy Authority of Ireland's (SEAI) Energy Show 2012 takes place in the RDS in Dublin on Wednesday and Thursday, 28 and 29 March 2012. The annual two-day event, presented by SEAI, is the flagship gathering for all those working in, or with an interest in, the Irish energy sector.

**The Energy Show 2012** – *Open up to Smart Energy Solutions* – focuses on the range of opportunities for businesses in energy efficient and renewable energy solutions. It is a business only trade exhibition showcasing leading suppliers of sustainable energy products and services available in Ireland.

For the first time this year's show will facilitate one-to-one business meetings through the Enterprise Europe Network in an effort to build Irish enterprise and business abroad. Also new to the show is a live heating and insulation demonstration area, which will showcase best practice installations across a range of applications and is sure to be of particular interest to building services professionals.

A key feature of the Energy Show is a series of seminars addressing the most current and topical developments facing the building sector, both nationally and internationally. A seminar titled *Renewable Heat: Changing the Way We Think About Energy*, promises to be an informative

session for attendees in discussing the evolving nature in the way buildings are designed, constructed, operated and heated. The Government has made it clear that "building green" will be at the heart of its decision-making process.

Building industry professionals and energy managers visiting the Energy Show can avail of advice and information at the seminar, which will also examine the development and potential of renewable heat technologies and provide guidance in the selection and installation of solar, biomass and heat pumps in Irish buildings.

Another seminar of note for those in the construction industry is *The Built Environment: Redefining Zero-Energy Buildings*. A reduction in heating bills is a must for energy managers in businesses across the country and ensuring that buildings are properly insulated and airtight can reduce these bills to almost zero. This session will look at what affects building fabrics and will also give an understanding of why thermal mass, U-values, heat sinks,

energy performance and embodied energy are important.

The advantage of the seminars taking place at the Energy Show is that they provide practical advice to all those attending, in addition to acting as a forum for stakeholders from the building services and sustainable energy sector to network, share ideas and information with like-minded professionals. The construction of sustainable buildings is a must nowadays and Energy Show 2012 will give a key insight into the latest innovations in this area.

The exhibition will run on Wednesday, 28 March from 9:30am to 7pm, and on Thursday, 29 March from 9am to 5pm. Seminar places must be pre-booked in advance with a limited number of spaces available.

For further details on exhibiting at the Energy Show, the seminars, the skill demonstration areas and the Product of the Show Awards, visit [www.seai.ie/energyshow](http://www.seai.ie/energyshow) ■

# CIBSE Ireland Region ...



## ... just a click away

CIBSE Ireland Region has unveiled its new interactive website which gives a comprehensive overview of its aims, objectives, committee members, CPD programme and technical evenings. It also includes regular news updates, and reports on inter-association activity, industry awards, participation in Government consultation bodies, and other promotional activity on behalf of the industry.



CIBSE Ireland Region is the professional body that exists to support the science, art and practice of building services engineering. It promotes the career of building services engineers in Ireland and offers a range of services focused on maintaining and enhancing professional excellence.



# IRI – much more than the name implies



While the Institute of Refrigeration Ireland (IRI) was initially established as an educational Institution, primarily for the instruction of technical subjects related to the refrigeration sector, in reality it has become much more than that. In fact, it is now seen as both an Institute and an industry representative body. Representing the refrigeration, air conditioning and HVACR sectors at the highest level with Government, environmental and European bodies, it has quickly become the influential “voice” of the industry.

**Its name is** perhaps also a little misleading as, over the last number of years, IRI activities have encompassed the needs of many companies and users of refrigeration and air conditioning in Ireland, be they product suppliers, contractors, specifiers or other professionals. It is not limited solely to the refrigeration sector.

Against that scenario it is somewhat surprising that many companies in the air conditioning, HVACR and heat pump sectors, especially the manufacturers and manufacturers’ agents/distributors, have been hesitant to join.

When *bs news* put this to Dave Killalea



*Dave Killalea (MIRI), IRI President*

*While more and more legislation and regulatory controls are inevitable as we go forward, the industry can rest assured that it has a place at the inner sanctum of the decision-making process, at the earliest possible stage, thanks to the IRI.*

(MIRI), IRI President, during a recent broad-ranging interview, he agreed. “We have seen some reluctance to join the IRI in the past, which is probably due to many people operating in the industry being unsure as to what the IRI can, and has, to offer to their ongoing business requirements”, he said.

“Over the last four years we have been

directly involved in negotiations relating to the SEAI ACA scheme, with the EPA and DoECLG on the new F-Gas, ODS and company registration legislation and, in all cases, have been the primary conduit for informing our members of the potential impact of this legislation on their business and their working environment. This is where the real benefit of being part of the



# Future-proof your installations: Offer 2 and 3 pipe options from a single unit

## Lightweight and modular

For quick or phased installations

## Heat recovery or heat pump

To suit customer requirements

## Heat recovery operation

Significantly enhancing energy efficiency

## Wide product range

Outdoor units (8 to 54HP), compatible with 52 indoor units

## H-LINK II and CS Net Web

Creating seamless connectivity with all leading BMS protocols

## Low noise

Select from 3 settings with up to 8dB noise reduction

## Comfort protection function

Allows control of the off coil temperature to within 1°C eliminating cold draughts

## Increased piping lengths

For flexible installations

Offer your customers Hitachi's VRF FSXN, boasting two highly-effective heat pump systems in one unit: A two-pipe system for open plan environments and a three-pipe system for individual spaces, allowing your customers to tailor their air conditioning needs to meet a diverse range of building requirements\*. Add to that an energy saving DC Inverter, impressively low noise and a lightweight, compact design for simple installation.

**With Hitachi's FSXN, there is no compromise.**

\*requires CH Box

To find out more call Hitachi on **+353 1216 4406**

Email [aircon.ireland@hitachi-eu.com](mailto:aircon.ireland@hitachi-eu.com) or visit [www.hitachiaircon.com/tomorrow](http://www.hitachiaircon.com/tomorrow)

Published by ARROW@TU Dublin, 2012

Institute pays dividends.

“Initially, the name of the Institute may have seemed limiting but, in reality, our activities over the years clearly demonstrate that we champion the needs of both refrigeration and air conditioning.”

Indeed, as part of its current programme of regular technical seminars, the Institute arranged a special industry briefing late last year on the proposed mandatory inspection of AC systems under the European Performance of Buildings Directive (EPBD).

At the request of the IRI, Chris Hughes, EPBD Programme Manager, SEAI, presented a paper in Dublin and Cork on this contentious issue. He explained that, in the recast Directive (Articles 15 & 16), member states can opt out of mandatory inspections by satisfying the Commission that they can achieve equivalent results through the provision of advice to users. This leaves Ireland with a two choices: –

#### **Option A – mandatory inspection**

Press ahead with the implementation of a mandatory inspection scheme. This is likely to require new legislation, new training and certification, and the introduction of a self-financing certification scheme for companies and individuals under EPBD. The legislation would have to be enacted by July 2012.

Inspections would be limited to the “accessible parts” and different inspection frequencies would be possible, depending on the size of the systems, the likely cost savings, and the presence or otherwise of electronic monitoring and control.

#### **Option B – voluntary inspection**

Introduce a voluntary inspection scheme supported by a promotional campaign. This scheme would sell the benefits of regular maintenance and inspection using certified companies and personnel. This option wouldn’t require new legislation, it would simply involve revocation of the existing Statutory Instrument.

The SEAI belief is that some further training would be required but this is likely

to be top-up training aimed at F-Gas certified personnel.

SEAI would also have to find a way to measure impact and demonstrate equivalence to mandatory inspections.

Option B is the SEAI’s preferred option but it is willing to engage with the various stakeholders on this. The IRI is currently reviewing its position and expects to revert to SEAI shortly with its recommendation.

#### **Excellent track record**

In looking at the IRI’s track record it has been incredibly successful over a very short space of time. Established in 2004, it is now the first port of call for many government departments and state agencies for consultation on refrigeration and air conditioning issues prior to, rather than post, the devising and implementation of legislation and regulatory controls.

The IRI also enjoys this status with other building services-related professional and trade representative bodies, not just in Ireland but throughout the world. AREA, IOR, ARC, SRC and ASHRAE are just some of the global organisations who work with IRI to ensure that information and data from a global marketplace is available through the IRI for local Industry.

The primary aims and objectives of the IRI are:

- To promote the general advancement of refrigeration and air conditioning applications;
- To pursue excellence in the provision of refrigeration systems and services for the community;
- To provide members with continuing learning opportunities and a means of exchanging ideas;
- To provide members with networking opportunities;
- To ensure that the titles for members of the IRI are given to suitably-qualified candidates;
- To speak and represent the industry as the authoritative voice of the refrigeration and air conditioning profession in Ireland.

It is the focus on these goals and activities which has seen the IRI grow to become the most recognisable body for all matters relating to the refrigeration and air conditioning industry in Ireland.

#### **With an eye to the future**

The IRI has always been proactive, rather than reactive. Hence the Education and Training Committee will be rolling out a new framework for Continuing Professional Development (CPD) shortly.

Work on developing the framework has been ongoing in 2011 and is now largely complete. The framework will be supported by an online CPD record system that will be integrated into the new IRI website which is scheduled to come on stream in March. In the meantime, members are encouraged to keep their own manual record of CPD.

Other initiatives in the pipeline include an industry awards scheme and, on the social side, the annual dinner, not to mention the quarterly newsletter, ongoing technical seminars and individual membership cards.

#### **In safe hands**

The emergence of the IRI came at a pivotal time for the industry as it coincided with the enactment and implementation of a raft of EU-driven legislation that has totally transformed the sector. The challenges posed by F-Gas registration, ODS, inspection of ac systems, WEEE and EPA inspections were (and still are) enormous but, through representation, consultation and negotiation, IRI has secured significant concessions for the industry on some critical points.

While more and more legislation and regulatory controls are inevitable as we go forward, the industry can rest assured that it has a place at the inner sanctum of the decision-making process, at the earliest possible stage, thanks to the IRI. ■

#### **Contact:**

info@instituteofrefrigerationireland.ie  
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[www.gtphelan.ie](http://www.gtphelan.ie)



**Mitsubishi Electric has called on industry to make renewable technology more readily accessible, and easier to understand, for building and home owners.**

## *Mitsubishi Electric on renewables offensive*

“**The renewable sector** is already very advanced and there is a multitude of products available right now that can help both new and existing buildings to benefit”, says Mike Sheehan, Divisional Manager, Mitsubishi Electric in Ireland.

“However, not enough is being done collectively by the renewable industry to promote the benefits that the technologies can offer, and too much emphasis is placed on futuristic products that may be years away from the market. We at Mitsubishi Electric already have a broad

which uses advanced heat pumps to provide radial heating, warm air, domestic hot water, or a combination of all three. Air, water and ground source heat pump versions of the system are available in individual modules offering capacities from 25kW to 200kW, multiples of which can be used for larger buildings.

The Ecodan range of heat pump systems was designed to suit a wide variety of heating needs and each unit can supply hot water at 70°C, water for radiators and underfloor systems at 45°C, or warmed air for a ducted supply system.

The Zen Series of wall-mounted air conditioning units is another model which seamlessly blends energy efficiency with sophisticated design. Zen units deliver cooling capacities of between 2.5 and 5.0kW, and heating capacities of between 3.2 and 5.8kW. Three sizes are available in a luxurious high-gloss black, silver or white finish that resembles modern audio-visual equipment.

The models offer COPs (Coefficient of Performance) of between 3.71 and 4.57 and can link to a choice of 13 different outdoor units to offer single or multiple connection.

In a similar, eco-related, vein both the Ecodan® and Zen ranges have been awarded a *Quiet Mark*, the new Noise Abatement Society badge of approval which is validated by the Association of Noise Consultants. Products awarded a *Quiet Mark* feature in the on-line directory, [www.quietmark.com](http://www.quietmark.com).

“Regulations relating to noise emissions are becoming stricter and once again we have taken leadership in this area. With more and more households discovering the benefits of using air source heat pumps for their home’s heating, they are beginning to realise that not all systems are the same, and certainly that not all of them are as quiet as Ecodan. The award of the *Quiet Mark* sets Ecodan and Zen apart”, concludes Mike Sheehan.

Contact: Mitsubishi Electric. Tel: 01 – 419 8800; email: [sales.info@meir.mee.com](mailto:sales.info@meir.mee.com); [www.mitsubishi-electric.ie](http://www.mitsubishi-electric.ie)



**Mitsubishi Electric Ecodan range has now been awarded a Quiet Mark, the new badge of approval of the Noise Abatement Society which is validated by the Association of Noise Consultants.**

range of innovative heat pumps, photovoltaic systems, heat recovery ventilation and advanced air conditioning which are available now.

“With so many of our existing buildings likely to be in use for decades to come, the challenge lies in making them more energy efficient, while reducing their carbon footprint. By using the technology now available, we can rise to the challenge and use renewables to further develop and expand the refurbishment market”.

To the forefront of Mitsubishi Electric’s renewables portfolio is the Ecodan® range of heating-only products



# Meeting the needs of our customers requirements



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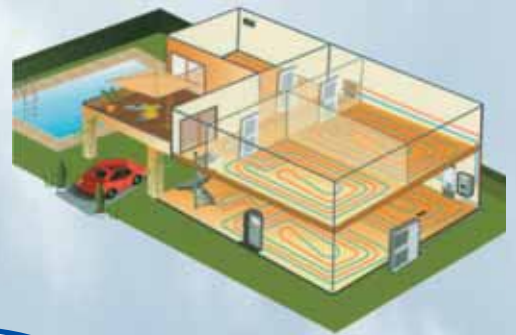


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# Quality indoor air comfort with the sound of silence

Ventac have provided quality ventilation and noise control products to businesses and the public sector for over 40 years. With the skills, knowledge and experience to facilitate the most effective solutions across every sector, their team of highly-qualified technical personnel have established the company as a pioneering force in the sector.

**W**hen it comes to knowing which materials and equipment to use, how to size components, and where to place them, the options are endless. Ventac use a wide variety of techniques to identify and quantify the challenge on each project. Ventac's knowledge of materials, combined with their extensive experience in manufacturing solutions and state-of-the-art research and testing facilities, allows them to develop the most cost effective solutions to any noise and ventilation problem.

Ventac are based in Blessington, Co. Wicklow but also have an office in the Netherlands and employs 42 people. The company is organised across two main divisions – Ventac Ventilation and Ventac Noise Control. They also have a purpose-designed acoustic research laboratory, the best in the country, which is critical to their status as market leader in pioneering acoustic solutions.



The Aviva Stadium

The TD-Silent fan range by S&P is a significant technological advancement in fan design technology that reduces casing-radiated (breakout) noise by up to 12dB compared to comparable products on the market. In addition, the perforated internal skin reduces flow-generated noise. The fan spigots at both ends are fitted with integral rubber seals to ensure an airtight acoustic seal to the duct system, while the design of this seal also reduces the transmission of vibration into the duct system.

Simple to install with easy access for maintenance, the TD Silent has lately been used on a number of commercial projects such as The Bon Secours Retirement Home and Waterford Regional Hospital. In addition, the fans have also been used in a number of domestic applications being used to re-distribute warm air from a room with a working stove to other rooms in the house where additional heating is required. In virtually all homes where a stove has been fitted, the levels of heat can be in excess of what is actually required. A TD Silent fitted in the ceiling space removes some of the warm air via a simple disc valve in the ceiling, and re-distributes it to other living areas through the same type of disc valve. The room with the stove is now at a much more comfortable temperature and the other two or three rooms that the air has been supplied to, benefit from free heating.



The S&P TD-Silent

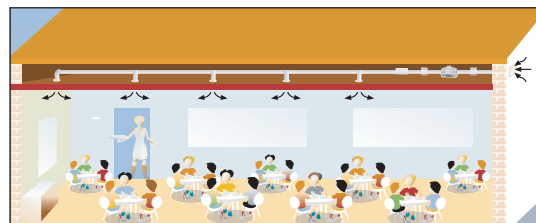
## Ventac Ventilation

The ventilation portfolio is extensive and caters for all applications across the entire building services spectrum. It includes innovative products from market-leading suppliers, their unique relationship with S&P in particular, dating back to when the company was first established.

## Noise Control

In addition to supplying ventilation products, Ventac also specialise in the design, manufacture and supply of customised acoustic solutions for industry, architectural and environmental applications. They have completed a variety of projects over the last few years which range from reverberation noise reduction in GP halls in schools, to fixed and flexible screen solutions for breakout noise reduction in plant equipment in the pharmaceutical, aeronautical, automotive and food manufacturing sectors.

For instance, Ventac designed, manufactured and installed their 223-10P Acoustic Quilt to reduce breakout noise from plant equipment at the Aviva Stadium. These quilts were made from fibreglass insulation and acoustic barrier with the absorptive and barrier elements encased in a grey weather-proof facing which is available in a variety of colours to suit aesthetic requirements. The fibreglass insulation is excellent at providing both sound absorption and thermal insulation.



**TD-Silent offers solutions to ventilation problems, especially in places where low sound level is required, such as schools.**

The composite is manufactured using three layers of fibreglass with a density of 22kg/m<sup>3</sup>. A 10kg /m<sup>2</sup> polymer based synthetic membrane is laminated within the fibreglass layers. This membrane acts as a sound or noise barrier, thus reducing the transmission of noise.

Ventac have also been involved in several projects for the ESB and other power stations in the UK where they have erected heavy-duty rigid acoustic screens for tonal noise reduction from turbines, compressors, and transformer stations.

Contact: Ventac Group  
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Call +353 1 413 5311 for more details or to book a place on ECOi training sessions.



# Kitemark, MCS and ECA approval for Toshiba Estia

## Estia Heat Pump System wins formal approval

**The increase of** CO<sub>2</sub> and other greenhouse gases is a key concern for all but, on a more immediate level, for consulting engineers and installers who are at the forefront in the battle to reduce such harmful emissions, while also reducing energy consumption.

“In this context”, says Derek Phelan of GT Phelan, “air-to-water heat pumps are recognised as renewable energy and so Toshiba developed its Estia heat pump system to tackle the problem, with features specifically included for the particular needs of the European marketplace.

“Incorporating Toshiba’s most advanced technology in all components – from the compressor and inverter right through to the refrigerant – the Estia system was first made available in Ireland in 2010 and has now been strengthened by the introduction of a new range of air-to-water heat pump systems that carry the MCS, ECA & BSI Kitemark Approvals.

“The Estia system is available in four sizes – 8kW, 11.2kW and 14kW in single-phase, and 16kW in three-phase – providing dual zone control for underfloor heating and fan coils, as well as sanitary hot water production.

“With a best in class COP of up to 4.66, the Estia system represents the next stage in the eco-evolution. The lightweight and easy-to-install system also delivers significant running cost savings.”

Almost all residential heating in Ireland is done using heated water in radiators, floor heating systems and fan coils, although the proportion of various heat sources, such as oil and gas boilers, electric heaters and heat



*Toshiba’s Estia range of air-to-water heat pumps are the ideal solution to increase energy efficiency (COP), using air as the main course of energy*

pumps varies enormously.

Toshiba’s Estia provides welcome flexibility in connecting to these existing heat sources. The hot water heated by the heat pump can be sent to a panel radiator or fan coil to heat a room, or circulated in hot water pipes in floors to provide radiant floor heating in winter. Hot water can also be supplied to a shower or kitchen through hot water pipes from the hot water tank (150, 210, or 300 litres).

“Residential heat production by means of gas, oil or electricity all contribute to raising the CO<sub>2</sub> emissions level in the atmosphere”, says Phelan. “In addition, such traditional heating systems are often less efficient and therefore the energy running costs can be greater.

“On the other hand, Toshiba’s Estia

range of air-to-water heat pumps are the ideal solution to increase energy efficiency (COP), using air as the main course of energy. These systems are designed to deliver the right temperature for space heating and domestic sanitary hot water, while also offering the additional advantage of air conditioning in the warmer months.

“Given the urgent need to minimise CO<sub>2</sub> emissions, reduce energy usage and deliver more comfortable, cost-effective indoor environments, heat pumps, and in particular the Toshiba Estia, offer the perfect solution”, concludes Phelan.

Contact: Derek Phelan, GT Phelan. Tel: 01 – 286 4377; email: derek@gtphelan.ie; www.gtphelan.ie ■



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[www.ventac.com](http://www.ventac.com)

Further to the recent opening of its dedicated Ireland office, Panasonic has unveiled an extensive series of innovations in product development, for both air-conditioning and heat pumps, that are packed with new technologies.



## Panasonic to feature heating and cooling at the ACR Show

Many of these products will feature at the forthcoming ACR Show in Birmingham (13 to 15 March 2012) where Panasonic will present a cross-section of its entire heating and cooling portfolio.

"We're very excited by the new product introductions", says Vincent Mahony, Panasonic National Account Manager, Ireland. "The scope of the range is now such that we can cater for virtually every conceivable application, be it heating or cooling, with products which incorporate cutting-edge features and technologies."

A brief resume of the new products now coming on stream is as follows:

### PACi range

Panasonic has developed a range of highly-efficient commercial air conditioners, all using R410a gas. It includes outdoor inverter units from 2.5HP to 10HP, with a wide choice of wall-mounted, 4-way (900mm x 900mm) in-ceiling cassettes, low static pressure or high static pressure hide-away (ducted) units, and ceiling-mounted indoor units.

### Industrial VRF

There are also new additions to the FS Multi full electrical VRF line-up designed to suit small/medium installations; the ECOi electrical VRF solutions designed for the

most demanding of offices and large buildings; and the new Mini ECOi.

### Gas-Driven VRF

The GHP VRF range offers efficient and flexible systems, and is particularly suitable for installations where power consumption and electrical load are an issue. The advanced gas-driven VRF range is now more powerful than ever before, capable of connecting to up to 48 indoor units.

### Aquarea

The new Aquarea HT (high temperature) unit – capable of heating to 65°C – is suitable for use as a high-efficiency retrofit replacement for gas boilers supplying radiators for heat, providing a fuel-efficient and cost-effective answer;

Aquarea T-Cap (total capacity) is a unit designed to keep nominal heating capacities even at temperatures as low as -7°C or -15°C, ensuring there is always enough capacity to heat the home without help from an external boiler;

The Aquarea 3/5kW Bi-bloc is a low-capacity unit, ideal for energy-efficient green homes with a very low heating load. Available in heating only or heating and cooling options;

Aquarea 6/9kW Mono-bloc is ideal for homes where space is at a premium,

*IntesisHome® is an app which gives the user control over their ac and air to water heating system from anywhere.*

combining the outdoor and indoor units into one easy-to-install package;

The Aquarea Pro Series brings the benefits of the Aquarea heat pump range to the commercial and large residential sector. Capacities range up to 80kW;

### Free Multi

Free Multi 5x1 is a multi-split system, cost-effective, solution that can cool and heat up to five internal units with only one outdoor unit;

### IntesisHome

IntesisHome® is an app for use on smartphones and PCs that gives the user control over the ac or air to water heating system from anywhere, allowing for maximum comfort and efficiency.

### Heat pumps

Panasonic is to sponsor the Heat Pump Arena at the ACR Show. "Building Regulations are getting tougher and today's new homes are more energy-efficient than ever before", says Vincent Mahony. "We have developed a number of technologies to reflect this, as well as a range of products suitable for retrofitting to homes with pre-existing heating systems. All will be on show at the upcoming ACR Show in March."

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

# Daikin reinforces dealer partnerships

Further to greater demand for Daikin products and services in Ireland over the previous decade, Daikin Europe NV established a dedicated, wholly-owned Irish operation in July 2006. Since then it has gained increased market share, thanks largely to the improved response times and more comprehensive service support provided to its dealer network.

Earlier this month Daikin reinforced this dealer commitment when it officially opened its new showrooms, demonstration area and training centre at its headquarters in Citywest, Co Dublin. A whole programme of seminars and training workshops will be rolled out over the coming months, while customised modules can also be organised, either on specific topics or for individual dealers' engineers.

Dealers from all over the country attended the opening and were generously hosted by General Manager John Valentine and his team. Emphasising the importance of the occasion, Wim Vangeenberghe, Director and General Manager Sales Division, Daikin Europe NV, also attended and *bs news* availed of the opportunity to have a one-on-one conversation with him.

Wim Vangeenberghe has extensive

experience of Europe as a whole but acknowledged, and demonstrated, a keen awareness of the various nuances which influence the Irish marketplace. Nonetheless, he emphasised that Daikin's core trading philosophy, no matter what the country, was to establish strong trading partnerships with installers.

"This is fundamental to how we run our business," he said. "We claim to be the industry technology leaders and so we need to engage with qualified, competent professionals to convey this message on our behalf. Hence the critical importance of our dealer network and our absolute commitment to supporting them in any way we can."

"This new facility here in Citywest will help us deliver classroom-style and practical training modules across the entire Daikin portfolio which includes a diverse range of air conditioning, applied,

## Key Personnel

John Valentine, General Manager  
 Richard Smith, Sales Manager  
 Mark Smyth, Consulting Sales Engineer  
 Liam Kirwan, Technical Services/Refrigeration Sales  
 Yasmin Paul, Sales Co-ordinator  
 Richard Sherlock, Dealer Heating Sales (East)  
 John O'Shaughnessy, Dealer Heating Sales (West)

heating and refrigeration products. This will be complemented by trips to our production facilities across Europe, and a continuous flow of information and technical literature. We also facilitate educational programmes and trips for our dealers' clients."

General Manager John Valentine reiterated these sentiments. "In the space of just five years, and despite the last three years of recession, we have managed to increase our turnover in each of the business sub-sectors", he said. "This is down to the excellent partnerships we've developed with our dealer network. We have an exceptionally-diverse product line-up and so can offer multiple solutions across the full spectrum of building services.

"Moreover, these products serve to meet the exacting demands of today's marketplace which calls for energy-efficient systems, at competitive prices, which are environment-friendly and comply with all regulatory requirements.

"Working in partnership with us – and availing of the technical and design support we provide on individual projects – means our dealers can deliver to this demanding objective.

"The opening of the new showrooms and training facilities at our Citywest headquarters is a declaration that we are fully committed to future growth and development, and that we see our dealer partners as an integral part of that."

Contact: Daikin Europe Ireland.  
 Tel: 01 – 642 3430. Email: info@daikin.ie  
 www.daikin.ie ■



Group pictured at the opening of Daikin's new showroom and training centre.



# Hitachi solutions for all seasons

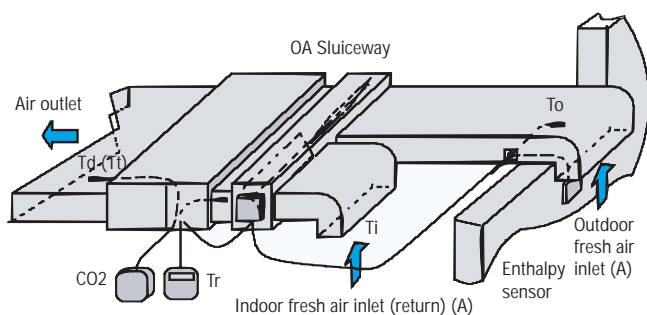
*Hitachi's air conditioning range is one of the most extensive available in the market today with unit capacities ranging from 1.8kW high-wall split systems to the screw compressor chillers of over 1000kW. With products and equipment suitable for a variety of applications – from domestic installations to multi-storey offices – the versatility of the Hitachi range is second to none.*

**P**erformance and cost efficiency are not the only parameters by which Hitachi products can be judged. Ecological considerations are factored in from the very first stages of new product design. This continues throughout production and into installation procedures, equipment and operation, with priority being given to the use of environmentally-friendly refrigerants such as R407c and R410a.

Hitachi is constantly researching and developing new technologies, ideas and innovations. Of its worldwide sales, over 6% is invested in research and development. This vast investment has resulted in many industry "firsts", such as its acclaimed scroll and semi-hermetic screw compressors. These have made possible the unique Hitachi air conditioning systems and water chillers which have revolutionised air conditioning worldwide.

Hitachi's expertise in control systems is also pioneering with unique solutions being devised for all product categories across the portfolio which includes room air conditioners and light commercial, VRF, heat recovery units, air-to-water heat pumps and chillers.

Innovative new products are constantly coming on



**Econofresh free cooling kit.**



**An example of a high-wall unit from the Shirokuma range.**

stream, a typical example being the S-Series wall-mounted split systems that go beyond comfort cooling to provide a complete air conditioned solution. They are available in cooling and heating capacities from 1.8kW to 4.2kW.

Incredible COPs of up to 6.13 are possible due to the use of a stainless steel-coated heat exchanger and the innovative eco-scroll compressor. This translates to running costs of only €33 per year based on 500 running hours at 16c per kWh.

In addition, humidity control is enacted with an enthalpy sensor controlling real dry and ionised mist humidification functions. An ion generator partnered with a stainless steel micromesh filter disinfects bacteria and fungi (up to 99.99% effective), while an air quality sensor provides automated air purification.

The Hitachi Set Free VRF Systems range has also been enhanced with the introduction of the FSXN heat pump/recovery modular units. These are available in 2-pipe or 3-pipe versions and offer cooling and heating capacities from 22.4kW to 165kW. Each unit can be used as a 2-pipe heat pump or 3-pipe heat recovery system, making it the industry's first unified VRF range.

To enable connection to third party DX coils in air handling units and air curtains, Hitachi offers a range of DX Interface Kits which provides energy saving inverter control for 5kw to 28kw on a single circuit.

In addition, Hitachi offers Econofresh free cooling kits. Used in conjunction with the RPI in the ceiling system, this accessory kit is easy to install. With Econofresh it is possible to intake fresh air using the indoor unit fan when the thermostat is off, thereby providing free cooling and reducing energy consumption. It works with the CO2 or enthalpic sensors to control the air quality inside the room.

The foregoing is but a brief sampling of the Hitachi portfolio, full details of which can be found at [www.hitachi-aircon.com](http://www.hitachi-aircon.com)

Contact: Fergus Daly, Hitachi. Tel: 01 – 216 4406; email: [Fergus.daly@hitachi-eu.com](mailto:Fergus.daly@hitachi-eu.com) ■

Core Air Conditioning has long been synonymous with the Carrier and Liebert brands in Ireland. In addition to supplying a comprehensive range of commercial, industrial and computer room air conditioning equipment, it is also renowned for the quality of the technical back-up and service support it provides.



*Roof-mounted Lu-Ve dry air cooler featuring the unique Dry & Spray system.*

## *Quality of product and service guarantees trouble-free operation*

**Latest additions to** the Core portfolio include Carrier/Nexa air to water heat pumps; Mitsubishi Electric split and VRF products; Lu-Ve dry air coolers and air cooled condensers; Jacir Air Traitement cooling towers; and Aldes heat recovery units and ventilation products.

With these additions Core Air

Conditioning now provides a full range of air conditioning equipment for sale or for rental. This includes chillers, free-cooling systems, mini-splits/VRF, heat recovery systems, packaged rooftop units, air handling units, dry air coolers, condensing units, fan coil units and computer room air conditioning solutions.

As agents for Emerson Network Power, Liebert and Knurr, Core Air Conditioning can now provide full HVAC and server rack solutions for all sizes of computer rooms and data centres.

Because of the nature of modern high-speed, high-density processing, the air conditioning requirements of the average data centre can be complex. The operation of processing equipment will generate heat and conventional building air conditioning systems designed to keep people comfortable cannot be expected to provide the environmental control that sensitive electrical equipment requires.

As a result, air conditioning solutions are required that provide the efficient, precise and reliable control of room temperature, humidity and airflow to enable the continued operation of critical electronic equipment. As market leaders in this area Core Air Conditioning provides a range of cooling solutions so that data centre managers can implement advanced processing technologies without fear of being compromised.

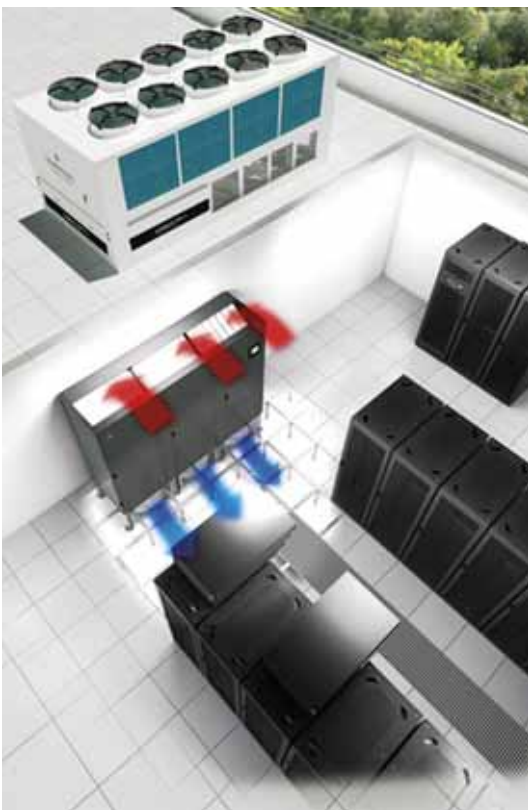
Another addition to the Core Air Conditioning portfolio is the Lu-Ve range of dry air coolers which are certified according to the Eurovent program of testing. These high-efficiency super-quiet machines are fitted with EC fan motors as standard and are available in capacities up to 2000kW with compact footprints to ensure that all site requirements can be met. The unique Dry & Spray system allows cooling when the ambient temperature is higher than the leaving water temperature without any possibility of legionella. Core Air Conditioning also offers a fully comprehensive after-sales service and maintenance program, including spare parts and technical support. Clients can avail of ongoing and preventative maintenance packages which can be tailored to suit each site and include 24/7/365 call-out to ensure client peace of mind.

Core Air Conditioning represents a formidable force within the air conditioning industry, combining market-leading brands with a level of technical expertise and experience which few companies can match, guaranteeing clients trouble-free plant operation.

Contact: Austin McDermott or Steve Wood, Core Air Conditioning.

Tel: 01 – 409 8912; email:

sales@coreac.com; www.coreac.com ■



*Schematic showing typical comms room installation.*

# EU legislation has major impact on pump sector

In 2006 the European Commission identified sectors that consumed large amounts of electricity and subsequently organised studies (LOTS) to see what could be done to reduce electrical energy consumption. Lot 11 specifically looked at motor-driven systems and the outcome of the study has culminated in EU legislation



in regard to electric motors, glandless circulators and certain water pumps.

In this article Brian Huxley,

Director, The British Pump Manufacturers' Association Ltd (BPMA) – the trade association representing the interests of Ireland and UK suppliers of liquid pumps and pumping equipment – helps clarify the situation now facing specifiers and installers of such equipment.

**F**irst of all let's deal with the situation in relation to motors, next glandless stand-alone and boiler-integrated circulators, and then water pumps.

## Motors

The EU has now established implementing measures for standard motors. Regulations apply to the following motor types/categories:

- Rated voltage up to 1000v;
- Single-speed, three-phase, 50hz;
- 2, 4 and 6-pole;
- Rated output from 0.75 to 375kW;
- S1 duty.

Regulations do not apply to motors designed to operate:

- In potentially-explosive atmospheres as defined in Atex Directive 94/9/EC;
- Brake motors;
- Ambient air temp outside the range (-15°C - +40°C);
- Altitudes exceeding 1000m as;
- Maximum operating air temp above 400°C.

The Commission has moved away from the voluntary scheme EFF 1-3

ratings and moved to IE classes which are defined in IEC/EN 60034-30 standard.

This regulation should increase the market penetration of electric motors, leading to estimated electricity savings of 135TWh by 2020, compared to a situation where no measures are taken.

## Glandless stand-alone and boiler-integrated circulators

In regard to these products regulations will ensure the placing on the European market of technologies that can significantly reduce the life-cycle environmental impact of circulators, leading to estimated electrical savings of 23TWh by 2020, corresponding to 11 million tones of CO2.

The two main technology changes which substantially influence the energy savings are:

- Moving away from standard induction motors to permanent magnet motors (see Figures 1 and 2);
- Moving from standard speed technology to variable speed technology.

Phase 1: From 16 June 2011	Motors must meet the IE2 efficiency level
Phase 2: From 1 January 2015	Motors with a rated output of 7.5 – 375kw must meet EITHER the IE3 efficiency level OR the IE2 level if fitted with a variable speed drive
Phase 3: From 1 January 2017	Motors with a rated output of 0.75 – 375kw must meet EITHER the IE3 efficiency level OR the IE2 level if fitted with a variable speed drive

Table 1 — Motor timetable according to the Regulation.

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Figure 1 – Typical induction motor technology.



Figure 2 – Typical permanent magnet technology.

The regulations for these products are in two parts:

**Phase 1** – From 1 January 2013, glandless stand-alone circulators, with the exception of those specifically designed for primary circuits of thermal solar and of heat pumps, shall have an energy efficiency index (EEI) of not more than 0.27;

**Phase 2** – From 1 August 2015, glandless stand-alone circulators and glandless circulators integrated into products (such as boilers) shall have an energy efficiency index (EEI) of not more than 0.23.

### Water pumps

As far as water pumps are concerned, in December 2011 the European Commission agreed proposed legislation that will lead to the removal from the market of 40% of inefficient water pumps (in accordance with a Mean Efficiency Index (MEI). This was agreed with the European pump industry and will be enacted according to the following timetable:

- From 1 January 2013 → MEI  $\geq$  0.1 (cut-off 10%);
- From 1 January 2015 → MEI  $\geq$  0.4 (cut-off 40%)

### LOTS 28 and 29

The European Commission has recently announced that it will be commissioning further studies (LOTS) in 2012 and, as

far as pumps are concerned, the relevant lots will be 28 and 29.

Lot 28 will encompass pumps for public and private waste water (including buildings, networks and treatment facilities), and for fluids with high solids content.

Lot 29 will encompass pumps for private and public swimming pools, ponds, fountains and aquariums, as well as clean water pumps larger than those regulated under Lot 11.

### BPMA initiatives

The BPMA's prime mission is to influence the business environment in the interests of the competitiveness and profitability of the Irish and UK pump industry through a range of services including commercial, marketing, technical, environmental, educational and energy, together with regular meetings of members.

It also pioneers progressive initiatives which benefit the entire building services spectrum, the latest being the development of a clearly-defined energy strategy policy that includes a systems-based approach to the energy efficiency of pumps.

Having investigated globally the standards that are available to carry out pump system audits, and also the training available to ensure the person carrying out the audit is adequately trained, the BPMA concluded that the

most appropriate way forward would be in accordance with the USA Department of Energy "Pump System Assessment Tool" and the existing ASME EA2 Pump System Assessment Standard. Both of these are currently being used extensively within the USA and also by the United Nations, through UNIDO, in several countries.

Accordingly, it engaged qualified representatives from the USA to train a group of pump engineers from BPMA member companies and they are now part of a BPMA Project Team that conducts free pump system audits. The results of these audits are being collated by the BPMA and proposals are to be presented to Government and regulatory authorities for consideration.

In addition – and to complement its already-extensive training course programme – BPMA has introduced a new initiative in e-learning for the pump industry. It is independently accredited and quality controlled by the Open College Network (OCN), and the courses are offered in accordance with the UK Qualifications and Credit Framework (QCF). It is thought to be the first such accreditation for the pump sector globally.

For full details on the BPMA log on to [www.bpma.org.uk](http://www.bpma.org.uk).

Brian Huxley can also be contacted directly at Tel: 0044 - 121 6016350; email: [b.huxley@bpma.org.uk](mailto:b.huxley@bpma.org.uk) ■

# MAGNA & ALPHA2 READY FOR 2013 – ARE YOU?



From 1st January 2013, new rules will apply for circulator pumps.

The EuP legislation allows only the most energy efficient circulators to be placed on the market.

Get ready for the change and offer your customers energy efficient solutions starting now!

**Tel. 01 4089800**

**[www.grundfos.ie](http://www.grundfos.ie)**

**Email. [info-ie@grundfos.com](mailto:info-ie@grundfos.com)**

**Hydrovar is a pump-mounted variable speed, microprocessor-based system controller from Xylem, and was the world's first of its type to manage motor speed and match pump performance to a range of hot and cold water applications.**

## *New Generation Hydrovar® from Xylem*

**As a main** distributor for Xylem Water Solutions Ireland Ltd, Champion Pumps has been installing the Hydrovar variable speed pump controller for over a decade. During that time it has installed Hydrovar in some of Ireland's most prestigious and iconic buildings, including the National Convention Centre, The O2 Arena, and many more offices, hotels etc.

Just recently it installed Hydrovar pump controllers at Connaught House, a seven-storey fully air conditioned office block completed in 2005. It was retro-fitted with VSDs to all the circulating pumps in late 2011, and already the operational running cost reductions have been significant. The project included the installation only of head-mounted variable speed drives to the existing circulators on the chilled water and heating circuits. The total motor capacity of the installation came to 154kW.

The unique modular design of the latest-generation Hydrovar means no additional master control is required. It also enables virtually any configuration of pumps – up to eight master drives or a mix of master and slave drives. This is the long-awaited solution for high-level installations requiring fail-safe systems with a superior range of features. Its modularity also provides a cost-effective solution for low-level, reduced-feature, demands.

Hydrovar can be mounted on to virtually any make or model of pump. It can be mounted during new installations or retro-fitted onto existing pumps, and is simple to integrate into BMS systems with ModBus communication as standard. This eliminates the need for expensive additional master control panels and circuitry. In fact, everything is included in one compact unit – asynchronous motor, microprocessor, controller, sensors, upgraded management software and a comprehensive back-lit LCD control panel.

With Hydrovar, varying the speed of pumps ensures maximum efficiency and, when demand is low, pumps not required can be automatically switched off. This can contribute to substantial Life Cycle Cost (LCC) savings, with considerably lower running costs and broader energy efficiencies. In independent tests when compared to mains-operated pumps, Hydrovar provided cost savings of more than 70%.

Pump servicing costs are reduced too. The "soft start" technology ensures no additional load to the pumps during starting and, since they tend to run at a lower speed, there is less mechanical stress and longer maintenance periods.

In summary, old unregulated pump systems work inefficiently.



*Hydrovar pump controllers were recently installed at Connaught House, Dublin.*

Regardless of the demand, the pumps are always running at full speed, wasting energy. As the Hydrovar® will fit to all standard asynchronous motors, nearly all existing systems can be upgraded. No hydraulic changes are usually necessary. Due to its simple installation and the big energy savings, a pay-back time of less than one year can often be achieved.

Contact: Terry Murray, Xylem Water Solutions Ireland.  
Tel: 01 – 452 4444; email: [terry.murray@xyleminc.com](mailto:terry.murray@xyleminc.com);  
[www.xylemwatersolutions.com/ie](http://www.xylemwatersolutions.com/ie) ■

**Wilo-Stratos, Wilo-Stratos Pico and Wilo-Stratos Giga not only fulfil future EU energy values, but are also ideally suited to current design requirements for heating and cooling systems.**

## 'ErP-ready' pumps from Wilo

**Uncontrolled glanded and** glandless circulating pumps which effectively "guzzle" energy are still widely in use in Ireland, despite the availability of new higher-efficiency and automatically-controlled electronic units. The new EU Regulation which became law in Ireland last May now governs the energy efficiency of all electric motors sold after June 2011, and will apply to glandless heating pumps sold after 1 January 2013.

To comply with these new and very onerous standards Wilo has designed a new range of high-efficiency pumps and circulators, some of which are already available on the market. The range will be completed before the 1 January 2013 deadline.

The extensive portfolio is suitable for use in many different types of building services circulatory systems and are ideally suited for use on heating and cooling systems where innovative design and energy efficiency should be a

pre-requisite for the end user.



*Wilo Helix booster set.*

It includes heating circulators and pumps; water booster units; system pressurisation units; a full range of sewage pumps and mixers and a complete range of borehole water pumps.

Many of these products already meet, and even surpass, the new requirements which will be applicable as of 2015 under the ErP Directive. The relevant products are therefore "ErP-ready", meaning that they are future-proofed for use in Ireland.

Wilo high-efficiency pumps already have extremely low power-consumption values due to their advanced electronic control and innovative EC motor technology. These electronically-controlled circulating pumps, with relatively maintenance-free frequency converters, automatically adjust their power to the changing load

requirements of the relevant systems. This is especially true when the pumps operate in partial load conditions, which can make up as much as 94% of the operating time of a circulating pump.

The Wilo-Stratos was first introduced in 2001, and the total Stratos series for heating and cooling circuits in commercial properties has been continuously expanded and optimised ever since. The Wilo-Stratos Pico high-efficiency pump, introduced in 2009, is primarily designed as a heating pump for residential application, but can also be used in air-conditioning applications. TÜV SÜD (German Technical Inspection Association South) calculated an average annual power consumption of only 46.5 kWh for a typical detached house, when measured against the standard measuring procedure of Europump's voluntary agreement on energy efficiency class rating.

The Wilo-Stratos Giga is another highly efficient, recently-launched product that covers the upper performance range in heating, cold-water and cooling applications. Wilo claims that approximately 8,000kg of CO<sub>2</sub> per year, as well as up to €85,000 in electricity costs per installed pump, can be saved with the Wilo-Stratos Giga over a 15-year operating cycle compared to conventional uncontrolled pumps (based on the load profile "Blauer Engel").

The Giga series is a completely new development. For the first time glanded pumps can be driven by extremely power-saving EC motors. The pumps' hydraulics are optimally matched to the motor technology. Depending on specifications, the pumps reach a particularly high total efficiency based on a motor efficiency of up to 94% at a nominal motor power of 4.5kW.

Thanks to the proven "red-button technology" and an easy-to-read display, the pump guarantees user-friendly operation. Different interfaces for Bus communication are possible using integrated IF-Modules as accessories. External measuring or control devices are not necessary.

The full range is available through Wilo's very extensive merchant and distributor network in Ireland.

Contact: Wilo Ireland.

Tel: 01 – 426 0000; 061 – 227566;

email: sales@wilo.ie; www.wilo.ie ■



*Wilo-Stratos Giga was awarded the "iF Product Design Award" even before it was launched at the ISH trade fair in Frankfurt in March last year.*



**Pumps consume 10% of world's electrical power and without them we would have no hot water, heating or air conditioning, nor could we access clean water or dispose of wastewater. Manufacturing and the process industries would also grind to a halt without a range of pumps that literally keep the wheels of industry turning, writes Gordon Barry, Managing Director, Grundfos (Ireland) Ltd.**

## Grundfos – the EuP motors on

**However, all this** comes at a cost, more especially as the vast majority of pumps are both oversized and don't incorporate the most efficient motor technologies, which when fitted, can mean a massive 80% energy reduction over less-efficient models.

In 2005 the EU recognised this and introduced the Energy Using Products (EuP) Directive that focussed on goods that used, generated or transferred energy. The objective at that time was to encourage the widest use of improved energy efficiency equipment as an important contributor to achieving EU emissions targets.

### EuP or ErP

The Directive has been under review more recently and its scope was broadened to include Energy Related Products (ErP) to encompass goods that impact on energy consumption during use. This new Commission Regulation EC 640/2009 now specifies the ecodesign requirements for electric motors which includes glandless stand-alone circulators as well as glandless circulators that are integral within other products. This change followed a preparatory study that looked at technical, environmental and economic analysis of motors and motor drives.

### Important deadline

What all this means for the pump industry – as well as the wider community – is that from 1 January 2013 this Directive will determine the minimum efficiency requirements with regard to stand-alone circulators. The main goal of this new Directive is to improve the life-cycle environmental impact of electric motors, so that it leads to the following estimated savings in 2020:

LCC energy savings of 5,500 PJ (1 TWh=3.6 PJ)  
Electricity savings of 135 TWH

So this means that from next year glandless stand-alone circulators, with the exception of those specifically designed for primary circuits of thermal solar systems and

of heat pumps, will need to have an energy efficiency index (EEI) of not more than 0.27. Other even stricter changes are scheduled to take place in 2015 and 2020 (see *EuP ready image*).

### Motoring on

Motors are also in focus and in order to simplify the various current national standards that exist for motors, a new IE standard (International Efficiency class) has also been adopted:

- IE1 = Standard efficiency (comparable to EFF2)
- IE2 = High efficiency (comparable to EFF1)
- IE3 = Premium efficiency.

Pump energy efficiency legislation is here to stay and Grundfos now has a range of EuP-ready products and super energy efficient Blueflux motors that already meet the most stringent legislative demands that come into force in 2013, in addition to those that will come into force in 2015.

Installing energy-efficient products and systems is one of the genuine "win, win" situations we can all benefit from.

So, whether you are a specifier, installer or end-user, selecting an 'A' rated pump is something that will soon be obligatory.

But why wait for the enforcement of this EuP Directive to make the change? ... do it today, as these more efficient pump products are available right now.

Contact: Grundfos (Ireland).  
Tel: 01 – 408 9800;  
email: info-ie@grundfos.com;  
www.grundfos.ie ■



**Grundfos super energy efficient Blueflux motor.**

# Collateral warranties – be wary of what you sign up to!

The concept of collateral warranties is not new in the construction industry and they have now become an established feature of modern contracting.

Regrettably, the standard forms agreed by the industry are frequently amended by construction clients and their legal advisors. Here *Dympna Mullally* discusses some of the key provisions contained in collateral agreements and advises caution against signing up to onerous and far-reaching terms.

## What are collateral warranties?

A collateral warranty is a contract and it is governed by the same contract law as any other contract. It is so called because it lies alongside, or parallel to, another contract, i.e. in a construction context, collateral to the sub-contract for the

element of specialist sub-contract works, or collateral to a letter of appointment for a member of the design team.

Collateral warranties are frequently sought by procurers, funding institutions, developers, tenants and purchasers from various entities in the contracting chain including consultants, contractors and specialist sub-contractors. The third party – for example a prospective tenant of a shopping centre – may require a collateral warranty from a specialist sub-contractor in order to acquire rights under the sub-contract, primarily the right to sue the sub-contractor in respect of any defects that may arise.

It is important to remember that a collateral warranty is an additional contract document so it should be treated with the same caution as the contract itself and appropriately vetted prior to execution.

The term collateral warranty can be misleading in the sense that many modern collateral agreements provide for more than a warranty and deal with matters relating to insurance, restrictions on liability and design rights and, strictly speaking, they should more properly be referred to as a collateral agreement.

## Origin of collateral warranties

Two factors contributed to the evolution of warranties in the construction industry.

Firstly, the lack of a direct contractual relationship between certain parties on a construction project, for example the employer and nominated sub-contractor, left a lot to be desired. It became evident that a mechanism was required which would provide a contractual remedy to a party who would not otherwise have contractual rights because in contract law, the only parties who can derive benefits, or be held responsible, are the parties to the contract.

In addition, developments in case law in the area of negligence highlighted the restrictions placed by the courts on the rights of a party to recover certain types of damages in tort. While third parties were able to recover damages for dangerous defects giving rise to third party injury or third party property damage, the courts were hesitant to award damages for pure economic loss in negligence cases.

The remedy for breach of contract is the amount of damages which can reasonably be foreseen by the offending party as likely to be suffered by the innocent party and,

in the case of a building, this would include economic loss since it is an attributable financial loss that flows from the breach.

Consequently, third parties sought to create an avenue which would allow them to sue under the Law of Contract, rather than the Law of Tort, and this was achieved through the execution of collateral warranties. In essence, a contractual link is created between two



*Ms Dympna Mullally is the Contracting Executive responsible for the Mechanical and Electrical Division of the CIF. Dympna recently graduated from Trinity College Dublin with a Post Graduate Diploma in Construction Law and Contract Administration with distinction. She can be contacted on Tel: 01 – 406 6007 email: dmullally@cif.ie*

parties who otherwise would have no contractual relationship.

### Standard of care

The collateral agreement will usually warrant the provision of works and services in accordance with the sub-contract or letter of appointment. The standard of care required from consultants is generally that of "reasonable skill, care and diligence". Sub-contractors need to beware of collateral agreements which seek a warrant that their design/the works shall be "fit-for-purpose" as this imposes a higher standard of care and may not be covered by your insurance policy.

Remember, if you provide a fitness-for-purpose warranty, this may be extended to successors of the building (purchasers,

During negotiations, it may be possible to reach a compromise whereby no distinction is made between the types of losses for which you will assume liability (i.e. physical damage and consequential loss) but a financial cap is included, above which you will not bear any further liability.

### Proportionate liability/net contribution clause

Under the Civil Liability Act 1961, concurrent wrongdoers (two or more persons where both or all are responsible to a third party for the same damage) are jointly and severally liable. What this means is that in a claim involving multiple defendants, a plaintiff may be awarded damages against each of the parties and is entitled to look at each of the parties to

### Period of the collateral warranty

A collateral agreement, executed under seal, unless otherwise stated, will have a duration of 12 years from the date of the breach of the agreement. Execution under seal is now so commonplace that it is advisable to expressly include a provision stating that it will endure for a period of six years from the date of practical/substantial completion.

In the current market, any provision which links the duration of the warranty to the date that a tenant or purchaser commences occupation of a building or section thereof should be avoided.

### Assignment

Most warranties, although given originally to your client, contain a clause extending the benefit to other persons to whom your client may make an assignment. In a shopping centre situation, the employer will be anxious to include such a provision to enable him to make an assignment to the anchor tenant. Sub-contractors should avoid clauses which allow for multiple assignments and if the warranty is silent, it is freely assignable. It is important to have an agreed amount of assignments specified and to stipulate whether prior written consent is required.

### Drawings and documentation

Sub-contractors may wish to limit the extent of design rights given to the beneficiary under a collateral warranty, and particularly the liability attached to the use of any drawings or design material for any purpose other than the purpose for which they were originally prepared and produced.

While it is understandable that funding institutions, purchasers and tenants want to secure protection through collateral warranties to enable them to make claims against those responsible for the design and construction of a building if something goes wrong, it is unreasonable to expect consultants and specialist sub-contractors to assume liability to "everyone and forever".

The executed collateral warranty should be a reasonable half-way house between total liability and a workable compromise. Warranties, particularly non-standard forms, should be assessed and entered into with the utmost of care. ■

***It is important to remember that a collateral warranty is an additional contract document so it should be treated with the same caution as the contract itself and appropriately vetted prior to execution***



tenants, etc) regardless of the fact that they may alter the purpose or use of the building.

### Limitations on liability

There are a number of ways in which sub-contractors can reduce their exposure by including a limit on the level of liability provided in a collateral warranty:

- You will have no greater liability to the beneficiary pursuant to the collateral warranty than you would have to your employer for a breach of contract;
- Liability shall be no greater than your level of professional indemnity insurance cover;
- Include a financial cap on the level of losses for which you will be liable;
- Limit your liability to the cost of making good any physical defects in the building, but excluding consequential loss. Due to the case law in this area, it is preferable if the types of indirect or consequential losses are expressly listed so there is no ambiguity about what is and is not covered. Examples include loss of rental income, loss of profits and interest.

recover the entirety of its judgement. In short, the last man standing may be left to pick up 100% of the bill, even if he is only found to be 10% liable.

In a construction context the third party is likely to sue all parties involved in the project and the claim could involve the architect, engineer, main contractor and sub-contractor. If, for example, the main contractor has ceased trading and the architect and engineer have failed to maintain their PI insurance, the sub-contractor will be held jointly and severally liable under the Civil Liability Act, regardless of the fact that only a small contribution of the wrongdoing may be attributable to him.

The inclusion of a net contribution clause in a collateral warranty is an attempt to overcome the provisions of the Act and it is essential that all specialist sub-contractors are alert to this, particularly in the current trading climate. This clause provides that you will be liable for the loss suffered by the beneficiary caused by your level of default and no greater.

# Plumbing TIPS




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

## *Make sure your SMART list has a life/work balance*

Yes, it's that time of the year again, the beginning of a new year when you are full of energy, enthusiasm and determination to make the most of the year ahead. I don't know about you but I am a great man to do lists ... do this, do that, don't do this, don't do that. No doubt, when I review my most recent list in January 2013 there will be more "to do" than "done".

**All in all**, I find it therapeutic to do the list. It helps me focus and set some goals, and makes me feel like I am taking control of my own destiny. One word of advice

though, don't be overly ambitious. Set yourself SMART objectives. SMART is a simple acronym used to set objectives. SMART stands for Specific, Measurable, Achievable, Realistic and Time.

Last year was a difficult market to trade in and, by all accounts, 2012 will be challenging as well.

There is only so much you can do, only

so many hours in the day. With this in mind don't forget to get the life/work balance correct. If you really want to be effective in 2012, be sure to include this in any new year resolution list you generate.

I have always had a simple approach to my own life/work balance. If I can't complete my work within a 9/10-hour working day, I am either inefficient, have not delegated, or there should be two people doing the job.

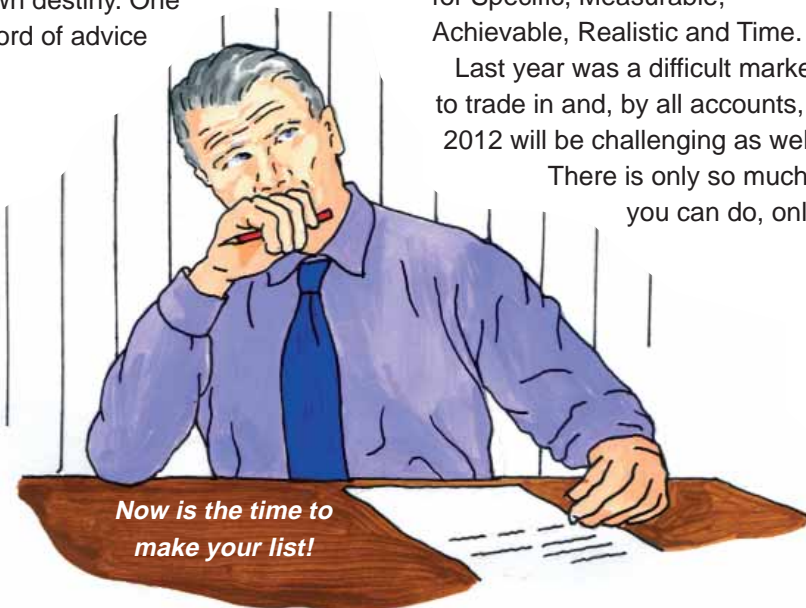
A very wise man told me once that *Life is Work and Work is Life* ... they are mutually interdependent and really should be seamless. We don't live in an ideal world, but we can greatly influence the world we live in for the better.

### **Tip 1**

Give yourself every chance to succeed but, above all, ***Be Realistic.***

### **Tip 2**

Your SMART list should include both work and personal goals – getting the life/work balance right is essential ■



# Early Stage Analysis using BIM with IES <VE> and Ecotect

In this article **Ciarán McCabe** discusses the many benefits of early stage building performance analysis using Building Information Modelling (BIM) for simulation software tools such as IES Virtual Environment and Autodesk's Ecotect.

**Building Information Modelling (BIM)** is a significant move towards integrated design but if you really want to strive towards low-carbon building designs you need to integrate performance analysis right from the start, when shape and form are still only being discussed at high level.

As Revit models contain space definitions and properties, these can be imported into simulation software such as IES <VE> or Ecotect as a gbXML file (Green Building XML), provided that the BIM file is created to an appropriate standard and the necessary steps have been taken in the Revit model before the translation to the building performance model takes place. The gbXML file format was developed to facilitate this transfer of building properties stored in the 3D Revit model to integrate with design/energy performance analysis tools such as IES <VE> and Ecotect.

*Ciarán McCabe is a Sustainability Engineer with Ethos Engineering and holds a Master Degree in Architectural Engineering and an Ordinary Degree in Building Services Engineering. Ciarán specialises in building performance modelling and his experience includes early-stage thermal dynamic modelling*



*building performance, energy assessment, carbon foot printing, building energy rating, natural ventilation strategy, daylighting performance and mechanical services design. Ciarán is a qualified Level 4 Building Energy Assessor using the Virtual Environment software and a Display Energy Assessor. He is also an active member of the Irish Green Building Council.*

From a building performance perspective this concept of integrating architectural models with energy models – if carefully planned and managed – will revolutionise building performance analysis in a way which the industry has not seen before. If fully utilised, it will result in more sustainable building designs.

Both IES <VE> and Ecotect feature a wide range of analysis and simulation capabilities and, with the introduction of the Revit Plug-Ins, will allow the use of these tools much earlier in the design process. This level of early-stage analysis

will help design teams better understand the performance impacts of their designs as they develop and evolve, as they work holistically from a conceptual stage. As a simulation engineer I feel it will allow me to become more creative and definitely more aware of the building design features at a much earlier stage compared to the traditional modelling approach.

Simulation engineers have been reluctant to carry out any building performance analysis until the building design has been finalised. This is because the rebuilding of models is a laborious task with little or no reward, especially so if the bulk of the time has been spent on the model geometry and not on the building performance analysis.

Recently I reviewed the many benefits that early-stage building performance analysis brings. I will outline their individual capabilities, all of which help to visualise building performance data, making it easier for designers to make more informed design decisions.

## Building location

At concept stage we can now utilise these simulation packages to gain a better understanding of how the building will perform in its proposed location. We can produce climate reports providing the headlines we need to know about the weather file selected. This provides us with an understanding of the local climate to inform building design strategy. This information includes diurnal temperature swing, moisture and humidity, wind speeds, precipitation, solar energy and degree days. At this stage in the design process we don't need to know much about the proposed building design.

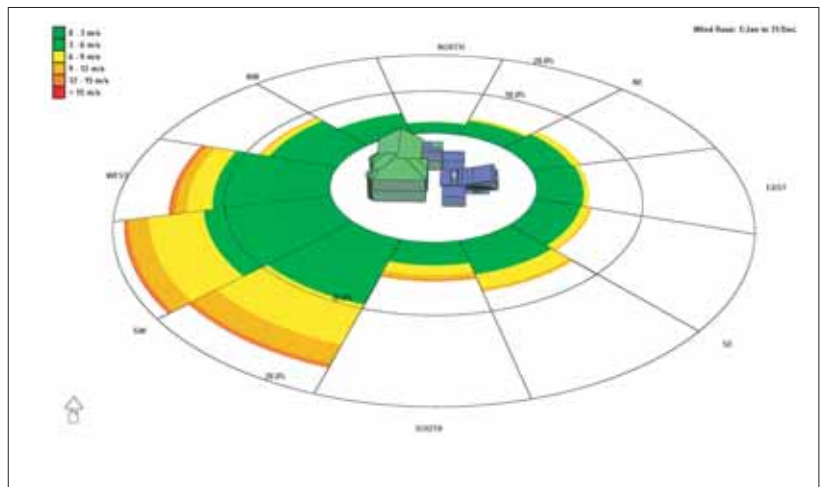


Figure 1 – Location weather assessment with IES<VE>

Figure 2 – Site wind rose with IES<VE>

However, an evaluation of the building location and climate may inform us about what the building design features should be. Figure 1 shows an example of the climate and weather data which can be extracted from IES <VE>. It uses the ASHRAE 90.1 climate classes which are based around the Koeppen-Geiger classification system, which is one of the most widely-used systems. Figure 2 shows a wind rose diagram for the building location demonstrating the prevailing wind direction and the wind speed.

**Building form and orientation**

Traditionally, decisions relating to building form and orientation were

driven by aesthetics, long before a simulation engineer becomes involved in the project. These decisions can impact not only the running cost of the building, but also the overall performance of the internal environment of the building which includes occupancy comfort. Now with the use of the BIM, gbXML file formats are generated from the building model, and the orientation of the proposed building can be easily changed to try and evaluate at an early stage the optimum solution before the planning permission and these design features become fixed.

A useful feature in Ecotect is its ability to automatically create and/or manipulate the geometry of the

model to best meet a set of given design criteria. This is known as generative design and, when used properly, can provide very useful design feedback such as *brise soleil* or glare shading device design, or solar radiation analysis, as shown in Figures 3 and 4.

**Natural ventilation**

Wind speed and wind direction generate positive and negative pressures around buildings which can influence how effective the proposed natural ventilation strategy might perform. As we analyse optimum building form and orientation, parallel to this we can use a zonal airflow model within IES <VE> to calculate bulk air

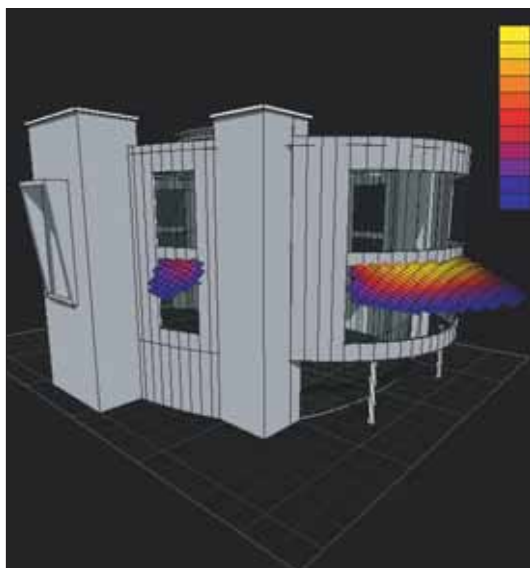


Figure 3 – Solar shading analysis with Ecotect

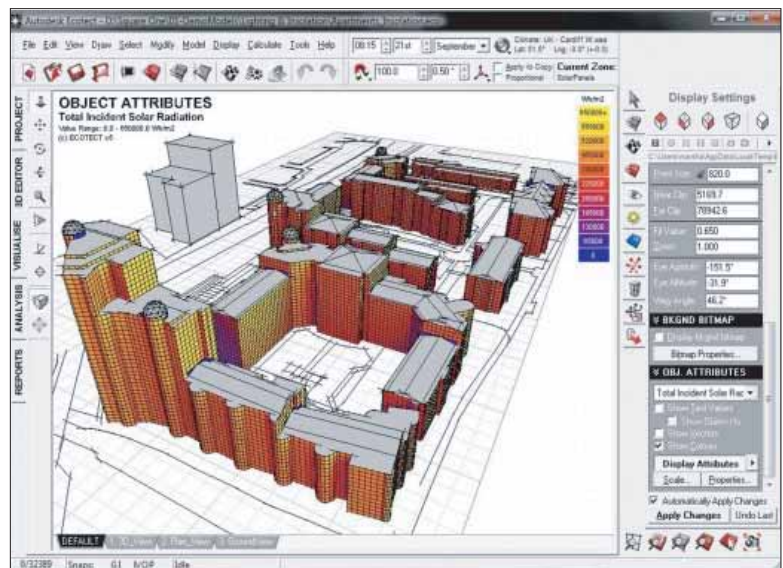


Figure 4 – Incident solar radiation analysis with Ecotect

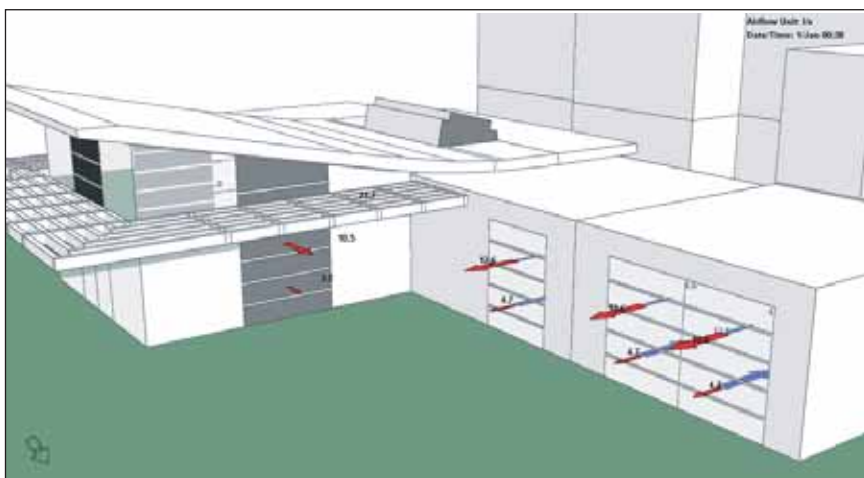


Figure 5 – Natural ventilation opening design with IES<VE>

movement in and through the building, driven by wind and buoyancy-induced pressures. We can thus evaluate the feasibility of different ventilation strategies such as single side or cross ventilation, and different opening types.

Without much detail on natural ventilation openings being required, we can demonstrate how to reduce the need for air conditioning using natural/mixed-mode strategies at a stage in the project when it's not too late to make changes to the building fabric. Natural ventilation can be shown visually and numerically using IES <VE> MacroFlo as shown in Figure 5.

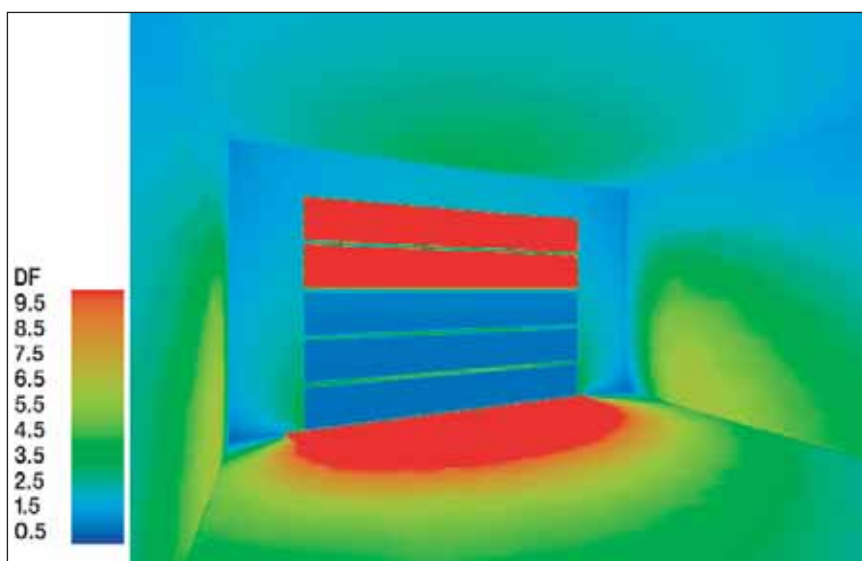


Figure 6 – Average daylight factor analysis with IES<VE>

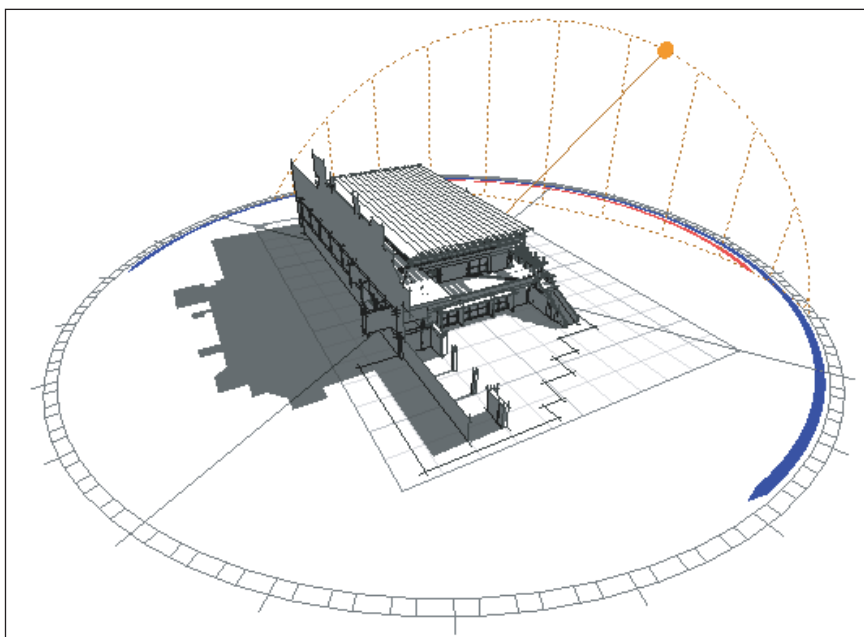


Figure 7 – Building solar shading analysis with Ecotect

**Daylighting**

Many studies have shown that people are more comfortable if they feel connected with the outside and have sufficient access to daylight. The right to light is becoming an increasingly important design consideration as we build denser and higher in our urban environments.

On the other hand, excessive glazing can lead to increased heating and cooling demands, and even complaints of glare. In order to strike the optimum balance daylighting simulations with the

help of BIM can now be run earlier in the design process and evaluated alongside thermal simulation results. This analysis would have been a time-consuming exercise prior to BIM.

Figure 6 shows the results of an IES <VE> radiance daylight factor calculation for a single room using contour lines. The radiance program can simulate the amount of daylight experienced in a space, and allow designers to generate 2D, 3D and photo realistic images.

**Solar shading analysis**

Solar shading analysis at the early stages of the design process is a valuable exercise that can aid passive solar design and is

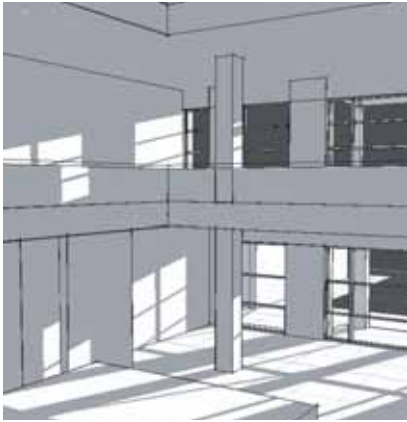


Figure 8 – Building internal solar shading analysis with Ecotect

essential at the planning stage to visualise the effect of the proposed building on surrounding buildings, and indeed the effect of surrounding buildings on the proposed building.

Both IES <VE> and Ecotect provide the facility to generate images and animations quickly and easily which can illustrate other buildings' shading impact on a proposed development or vice versa. Shading effects for different times and dates can be demonstrated by interactively dragging the sun point across the sun path, as shown in Figure 7. An illustration of shading analysis within the internal environment is shown in Figure 8.

No matter what the key driver in the project may be – whether it is voluntary environmental rating schemes such as BREEAM or LEED, annual running costs or the carbon footprint of the project – BIM allows simulation engineers to properly utilise integrated building performance analysis tools to evaluate and inform design decisions throughout the process rather than leave the analysis until later phases of the project. ■

● This series on Building Information Modelling (BIM) is edited by Keith Mellon, Mechanical Project Engineer with Ethos Engineering. He is also a CIBSE Ireland Region committee member, and sits on the CITA BIM and Ethos BIM representative groups.

The CIBSE Christmas lunch took place in the new surroundings of the Davenport Hotel early in December 2011, the decision to change venue being necessitated by the unprecedented demand for tickets.



## CIBSE Lunch breaks all records

**The occasion proved** a massive success and the feedback from the capacity attendance on the new venue and format was very positive. All credit to the organising committee, and especially Gary McKeown of Varmings, who was the principal driving force behind the scenes.

Apart from the CIBSE Conference, the CIBSE lunch is now firmly established as the main meeting place and networking opportunity on the building services industry's calendar of events.

The proceedings began with a pre-lunch drinks reception before Derek Mowlds, CIBSE Chairman and Senior

Project Manager at PM Group, welcomed everybody and delivered a summary of the CIBSE activities conducted in 2011. He also presented an overview of the year ahead and the interesting programme planned for CIBSE members and friends in 2012 (see details on the new CIBSE website, [www.cibseireland.org](http://www.cibseireland.org)).

Principal speaker and guest of honour was Noel Morrin, Senior Vice President Sustainability of international construction firm Skanska. Chairman Derek Mowlds sought him out specifically for the lunch to bring a positive, upbeat air to proceedings. *(continued over)*





An Irishman educated in biology and chemistry and with a background in construction, business and the environment, Noel joined Skanska's head office in 2005 with the mission of continuing the sustainability effort.

His previous positions include Group Environmental Director for RMC, the world's largest producer of ready-mixed concrete, as well as senior roles at

Imperial Chemical Industries, the UK National Environmental Technology Centre and NGO Business in the Environment.

Noel talked about his career and experiences since leaving Ireland, and made some observations on the building boom and property bubble as he saw it from overseas.

He went on to talk about Skanska's business case approach to sustainable

building design and construction, working from the envelope initially, and applying renewable technologies only when the performance of the building fabric has been maximised.

He also spoke of the huge supply chain that services Skanska's enormous project portfolio, and gave some interesting statistics and facts that certainly grabbed the attention of the attendees. ■



*Back Row: Seamus Homan and Peter O'Dowd. Front Row: John Cuthbert, Ted Bourke and Paddy Clonan.*



*Kevin O'Connell with Greg Traynor, JN Traynor & Partners and Kevin Kelly, DIT.*



*Keith Mellon, Ethos Engineering with Declan Kissane, Unitherm Heating.*



*Noel Morrin, principal guest speaker with Derek Mowlds, Chariman CIBSE Ireland Region.*



*John O'Shaughnessy, Daikin with Tony O'Keeffe, Sirus.*



*Joe Donnelly, Standard Control Systems with Brian McPhillips, Derham McPhillips; and Linda Healy and Sean O'Toole, Standard Control Systems.*



*Eamon McGrattan, McGrattan & Kenny with Alan Hughes, Keane Eng and David Blaides, Daveys.*

CIBSE News

# SDAR Journal formal launch

Subsequent to the publication and distribution of the *SDAR Journal* late last year, a formal reception was held in Engineers Ireland in Clyde Road, Dublin 4 recently to mark the occasion.

Guest of honour and principal speaker was Owen Lewis, SEAI Chief Executive. He was especially complimentary about the *Journal* and said that it represented a very important initiative which would contribute enormously to sustainable design in building services.

Dr Kevin Kelly, *SDAR Journal* Editor and Head of Department, Electrical Services Engineering, School of Electrical Engineering Systems, DIT, gave a thorough background as to how the idea for the *Journal* came about.

He also complimented, and thanked, the various parties who helped make it a reality, including the authors, members of the reviewing panel, and of course DIT's primary sponsorship partners, CIBSE and Airtricity. Other speakers on the night included Dr Mike Murphy, Director and Dean, College of Engineering & Built Environment, DIT and Sean O'Dowd, Vice-Chairman, CIBSE Republic of Ireland Region. ■



**Photo 1** – Back row: Owen Lewis, Chief Executive, SEAI and Sean O'Dowd, Vice-Chairman, CIBSE Republic of Ireland Region. Front row: Dr Mike Murphy, Director and Dean, College of Engineering & Built Environment, DIT with Dr Kevin Kelly, SDAR Journal Editor and Head of Department, Electrical Services Engineering, School of Electrical Engineering Systems, DIT and Peter Lord, Airtricity.  
**Photo 2:** Brian West, UCD with Declan Kissane, Unitherm and Gary O'Dowd, Varming. All three are also CIBSE Committee members.  
**Photo 3:** Michael Buckley, The Buckley Consultancy with Gerard Keating, Homan O'Brien and Greg Traynor, Traynor & Partners.



**Pat Benson Memorial Lecture**  
 CIBSE Chairman Derek Mowlds pictured with Niall Treacy prior to the Pat Benson Memorial Lecture in DIT Bolton St recently. Niall gave the primary address and the subject matter was "Adopting First Principles of MEP Engineering Design to the Projects in the Middle East".



# back issues

## What show offs!

Coming at you in March are some key industry exhibitions. They include:

### SEAI Energy Show

The SEAI Energy Show 2012, with its combination formula of seminars, workshops, product awards and stand displays, takes place in the RDS, Dublin on Wednesday/Thursday, 28/29 March next.

### ACR Birmingham

The ACR air conditioning and refrigeration industry show takes place at the NEC in Birmingham, Tuesday/Wednesday/Thursday, 13/14/15 March 2012.

### EcoBuild

Ecobuild is the UK event for sustainable design, construction and the built environment. Venue is ExCel, London and dates are Tuesday/Wednesday/Thursday, 20/21/22 March 2012.



## Ditch the PowerPoint boredom!

A recent survey by the Anti-PowerPoint Party (APPP) of 1000 business men and women in the UK revealed that they “zone out” of meetings after just 17 minutes.

According to the survey, the average business person spends roughly 38 working days in meetings per year, rising up to 40 days and higher for senior managers.

The APPP is a worldwide movement established by Matthias Poehm in May 2011 with the goal of rendering people attentive to the more powerful way of presenting without PowerPoint.

**The PowerPoint Fallacy: Still Presenting or Already Fascinating?** by Matthias Poehm is out now. Visit [www.anti-powerpoint-party.com](http://www.anti-powerpoint-party.com)

## An Edge for GT Phelan

GT Phelan engineer Ian White is all smiles thanks to a recent chance encounter with The Edge. The picture was taken in The Children's Sunshine Home in Leopardstown, Co Dublin, where Ian was on site servicing some units.



Instead of Christmas cards/gifts, GT Phelan services (foc) the ac units for several charities in Dublin throughout the year, including The Children's Sunshine Home, Focus Ireland and Oxfam.

## Nuclear waste fuel of the future?

Reports emanating from the UK suggest the British Government is still considering the possibility of using GE Hitachi's Prism reactor to solve its future energy crises ... and that of its growing nuclear waste stockpile.

Apparently, it has been calculated that a network of Prism fast reactors – fed on the UK's nuclear waste stockpile of 100 tonnes of plutonium and 35,000 tonnes of depleted uranium – could generate enough electricity to power the country for 500 plus years!

In theory at least, Prism seems to offer the ideal solution to two massive problems. So, what's the catch? ... Initial capital cost is one, but venturing into the unknown is another.

## Dave rubbing shoulders with Trap

**Came across this** great pic of Advanced Technical Product's Dave Daly with Giovanni Trapitoni recently. It was taken during last year's Europa Cup final at the Aviva Stadium, at which Dave was UEFA volunteer media centre assistant.

“It was great to be back in the stadium at the time”, said Dave, “as ATP were involved with the supply of trench heating and automatic balancing valves during the construction phase”.

Advanced Technical Products continues to offer a quality service with top product names, both in the mechanical services and maintenance sectors.



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