

11-1-2007

### BS News

Follow this and additional works at: <https://arrow.tudublin.ie/bsn>



Part of the [Civil Engineering Commons](#), [Construction Engineering Commons](#), and the [Construction Engineering and Management Commons](#)

---

#### Recommended Citation

(2007) "BS News," *Building Services Engineering*: Vol. 46: Iss. 10, Article 1.

Available at: <https://arrow.tudublin.ie/bsn/vol46/iss10/1>

This Article is brought to you for free and open access by the Journals at ARROW@TU Dublin. It has been accepted for inclusion in Building Services Engineering by an authorized editor of ARROW@TU Dublin. For more information, please contact [arrow.admin@tudublin.ie](mailto:arrow.admin@tudublin.ie), [aisling.coyne@tudublin.ie](mailto:aisling.coyne@tudublin.ie), [vera.kilshaw@tudublin.ie](mailto:vera.kilshaw@tudublin.ie).

# bs news

building services news

*Specifying LEDs*

*F-Gas  
Regulation  
Compliance*

*Face to Face —  
James Murray, CORGI*

*CER Vision Paper  
Industry Responds*

# High performance cooling/heating multi systems for retail & leisure

- Mitsubishi Heavy Industries high performance cooling/heating systems are designed for a variety of retail and leisure applications
- Simple, low cost installation
- Connect up to 4 indoor units to a single outdoor unit. Indoor units connected by branch piping, just two pipes connected to the outdoor unit
- Up to 28kW cooling or heating with an outdoor unit footprint of just 0.36sq m

New compact, high performance outdoor units with **INVERTER** technology



ecolution:high performance solution



3D Air Sales (Ireland) Ltd,

Tel: 01 - 463 8604 Fax: 01 - 463 8606

ISSN 0791-0878

**Published by:**

Pressline Ltd,  
Carraig Court,  
George's Avenue,  
Blackrock, Co Dublin.  
Tel: 01 - 288 5001/2/3 Fax: 01 - 288 6966  
ISDN: 01 - 211 2338/9  
email: bsnews@pressline.ie  
web: www.buildingservicesnews.com  
www.bsnewsbuyerguide.com  
www.pressline.ie

**Editor:** Pat Lehane

**Advertisement Director:** Joe Warren

**General Manager:** Louise Byrne

**Origination and Design:**

Pressline Ltd. Tel: 01 - 288 5001

**Subscription:** One Year —€70

**Printed by:** C&F Printing Solutions

© All editorial contents and all advertisements prepared by the publishers, Pressline Ltd.

**IN THIS ISSUE**

Trade News & Product Information	2
BTU Golf — Weekend at Glasson	12
BTU Golf — President's Day / The Grange	14
CER Vision Paper — IoPHE, REGII & IHPE Respond	16
Wilo Stratus ECO Comes Out Tops in Survey	20
Designing Building Services	21
Chillers	28
Meet F-Gas Regulations the Smart Way	40
Sanyo Appoints New President	41
Face to Face — James Murray, CORGI	42
Worcester Bosch Links up with METAC	44
Leading Light Who Won't Fade Away!	45
The Harsh Reality of Trying to Specify LEDs	46
Electrical Services Engineering	50
Plumbines	52

opinion

## We've Got You Covered!

This issue of *bs news* has something for everyone in building services.

On the domestic front there is the ongoing matter of the registration of gas installers. Recent publication of the CER's Vision Paper has prompted a great deal of debate and resulted in written responses from various interested parties. See page 16 for the joint IoP, REGII and IHPA submission.

CORGI, which operates a similar scheme in the UK and which sits with other vested-interest parties on the CER's advisory panel, explains its position on the matter in our *Face to Face* profile on page 42.

*Designing Building Services* — which is produced in partnership with PM Group — continues on page 21. This series has proved extremely popular with consultants and contractors. This month features "simulation design in building services".

The use and handling of refrigerant gases is a critical issue for the industry at present. Our 13-page feature (starting page 28) looks at F-Gas Regulations' compliance and the products and services available from leading chiller manufacturers.

On the electrical front we come face to face with Ivan Hammond (page 45) who has just stepped down as a long-serving RECI Director. We talk about his career in general, and especially the battery of 10kW lamps used to floodlight Croke Park in 1966 for 50th Easter Rising celebrations.

Paul Falvey of Axis Engineering continues his series on LEDs (page 46) while Kevin O'Connell of D:T completes the earthing series (page 50).

As always, the news pages are bursting with information while there is also the inevitable golf outing report!

Enjoy!

## trade news + product information

### grundfos magna for 'efficiency & reliability'

Since its launch in 2001, the Grundfos Magna range has been expanded regularly, bringing the total number of pump models up to 28 at the last count. Now the entire scope of the range has been further enhanced to make all Magna pumps as suitable for air conditioning applications as well as heating systems.



For dual or separate systems the redesign means that Magna pumps can be used in separate air conditioning systems, and also in dual systems providing air conditioning and heating. This has been achieved through technical adjustments to the Magna's electronics and the addition of extra protection against condensation.

Introduced last month, the new AC-ready Magna range has already been installed in a number of applications. "Magna pumps are already successfully handling air conditioning in many hotels, office buildings and industrial settings," says Gordon Barry of Grundfos.

When used for air conditioning applications, the Magna can be fitted with customised insulation shells to ensure reliable performance. These are available from Grundfos as optional extras.

Contact: Grundfos (Irl). Tel: 01 - 408 9800; email: [info-ie@grundfos.com](mailto:info-ie@grundfos.com)



### new appointments at moy isover

Moy Isover in Ardfinnan, Clonmel, the only manufacturer of glasswool and non-woven tissue insulation in Ireland, has made three new appointments to its management and sales team. Pictured left, they are Brian Geary, Sales Representative, Munster; Pdraig Barry, Managing Director; and Michael Coleman, Sales Representative, West & North.

### plastic fans for corrosive, polluted air

Irish Fans Distributors has sourced a special range of centrifugal fans which were specifically designed to handle exhaust air containing aggressive pollutants. Leading German plastics manufacturer Hürner Funken is renowned for its use of plastic for ventilation components and systems and it has now teamed up with Irish Fan Distributors to make the range available in Ireland.



Funken HF fans are suitable for handling aggressive, low-aerosol gases and super-clean air, while explosive atmospheres can also be exhausted by the fans using a specially-adapted unit.

All components are made of chemically-resistant plastics and are available in various versions and sizes.

Features include vertical discharge; safety switch; statically and dynamically-balanced centrifugal impeller; asynchronous, fully-enclosed motor which is situated out of the air flow; Class F insulation; and IP55 protection rating.

Contact: Billy Wright, Irish Fan Distributors. Tel: 051 - 852 404; email: [bwright@irishfandist.com](mailto:bwright@irishfandist.com)

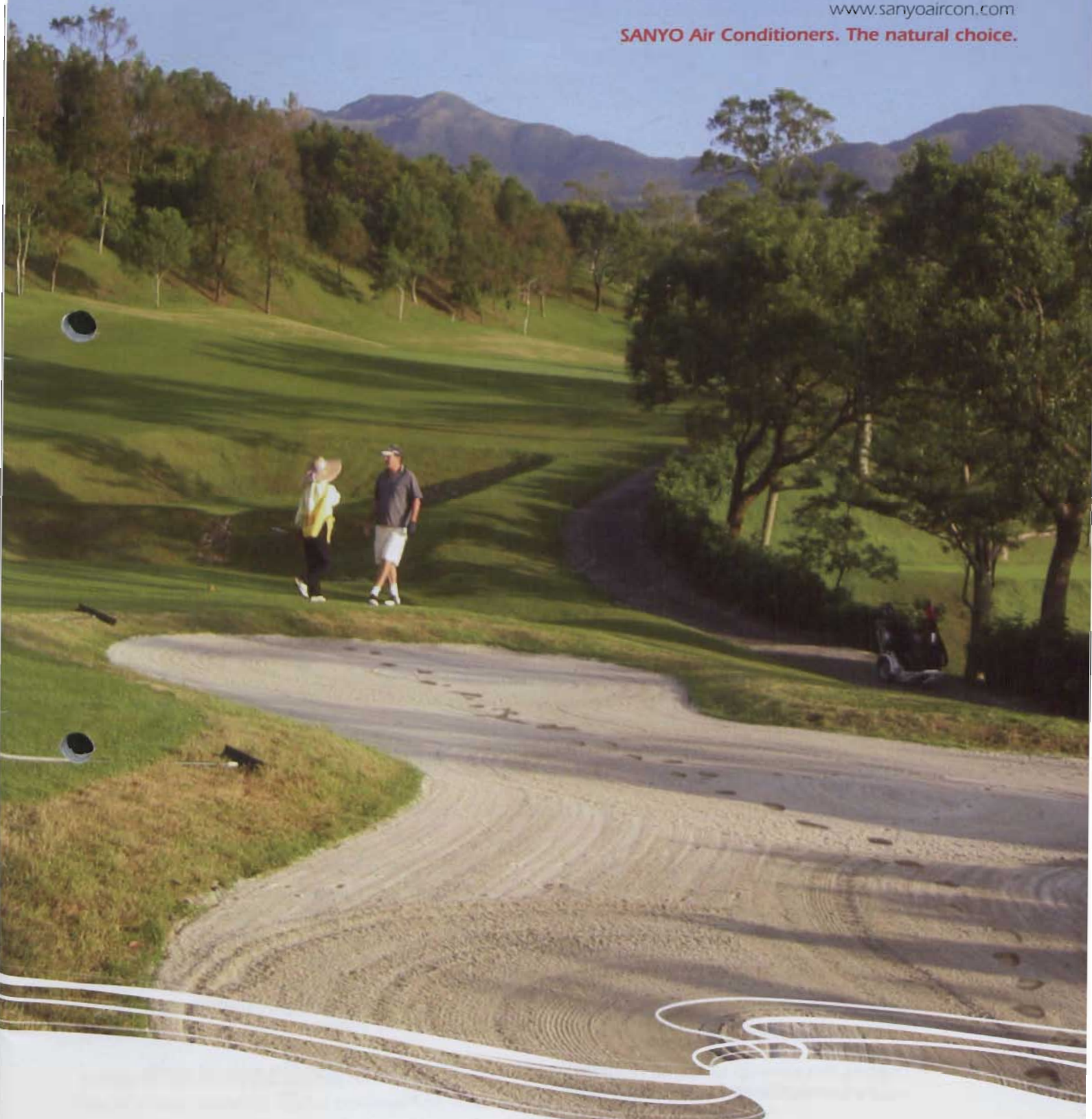
et al.: BS News

# Driving to reduce your carbon footprint.

**SANYO Air Conditioners** are leading the way in sustainable product solutions. We are proud sponsors of the PGA in 2007.

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

**SANYO Air Conditioners. The natural choice.**



**Think GAIA**  
For Life and the Earth

Published by ARROW@TU Dublin, 2007

**PGA**

© PGA is a registered trademark of  
The Professional Golfers' Association Limited.

**SANYO**

## trade news + product information

### toymaster thurles thanks toshiba

Kids and parents visiting the Toymaster store in Thurles can expect a comfortable air conditioned experience when choosing their toys. Specialist contractor Pat Carey recently installed eight Toshiba cassettes and four ceiling units.

The ceiling units were mounted in the bulkhead facing the entrance door, ensuring cooled/heated air is circulated towards the extensive glazed frontage, preventing condensation from forming and creating a comfortable environment.

In conjunction with this, a stratification fan was also installed. The warm air produced by the heat pumps rises into the 8M space, precisely where it is not required. The stratification fan pushes this warm air back to ground level, ensuring even higher energy savings and lower running costs.

The Toshiba heat pump system was designed to ensure maximum comfort conditions, even when the external temperature drops to -5C.

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



### lowara low-energy borehole pumps

A new Z6 range of Lowara pumps is designed to meet the demands of municipalities and engineers for energy-efficient, low-maintenance and easy-to-handle hydraulic borehole pumps.

Highly versatile, the pumps can be used in a range of common borehole applications including municipal water supply and irrigation for agriculture and parks, sports fields and golf courses. They are also efficient for more specific uses such as mines, fire-fighting, water level control and fish-farming.

The pumps are of stainless steel construction rather than cast iron, with stainless steel parts in all areas coming into contact with water, eliminating the risks of water contamination through paint or rust.

A precision cast stainless steel delivery head protects the pump from water hammer and ensures a safe and rigid connection to standard pipes (2.5", 3" and 4" options). The cast stainless steel motor adapter also ensures a robust and rigid connection to the motor.

Contact: Terry Murray, Lowara Ireland. Tel: 01 - 452 0266; email: t.murray@iit.com

### monitor & troubleshoot hvac systems

Manotherm has introduced a self-powered, 5-channel, pressure/temperature/data logger to monitor and troubleshoot HVAC systems, verify energy management systems or track the performance of pneumatically-controlled valves.

Units include an onboard thermistor for ambient temperature measurement and pressure module while a remote humidity/temperature sensor and plug-in humidity sensor are sold separately.

Loggers can store up to 32,768 readings and operate independently from any external power supply with built-in lithium battery.

Contact: Bob Gilbert, Noel Walsh or Robert Gilbert, Manotherm.  
Tel: 01 - 452 2355; email: info@manotherm.ie





## trade news + product information

### valor dimension brings 'real innovation'

Valor Dimension from Potterton Myson (Irl) is a ground-breaking electric fire which uses patented technology to create full-depth, real fuel-bed effect. It currently comes in a choice of three models, including a hole-in-the-wall version for urban chic. Additional models to suit other decor segments will come on stream shortly.

Prior to launch extensive consumer research revealed that people look for certain "triggers of realism" when it comes to electric fires — glow, flame and effect — to provide colour and movement and, most importantly, fuel bed depth. Valor's new Dimension model delivers on all fronts.

Further developments in the Wonderfire range include a restructured version of the Airflame which has a unique deep ambient glow and authentic flickering flames. The extended collection features new controls, fuel beds and high-end finishes.

To meet the demand for high-efficiency products the Valor Homeflame range offers a choice of the contemporary Harmony available in a hearth and wall mounting versions and a new landscape format. The same applies to the stylish Wonderfire range with the Allure models boasting an efficiency rating of 80%.

Meanwhile, the more traditional Dream has a solid cast iron frame and firefront in gold-plate, chrome or black, allowing homeowners flexibility when co-ordinating the fire with a room's interior.

Contact: Sales at Potterton Myson (Irl). Tel: 01 - 459 0870; email: [post@potterton-myson.ie](mailto:post@potterton-myson.ie)



### lindab acquires aervent

Lindab, the Swedish manufacturer of ventilation products, has acquired Aervent for a consideration of €7.36 million.

Aervent employs something like 30 people at its Dublin and Cork outlets and had a reported turnover of €12 million for the 12-month period ending June 2007.

Lindab is said to employ 5000 people in 29 countries throughout the world and to have had revenues of €825 million in 2006.

Contact: Jim Bollard, Aervent. Tel: 01 - 456 8200; [sales@aerventgroup.com](mailto:sales@aerventgroup.com)

### chipsensors breakthrough sensor technology

ChipSensors Ltd, an Irish semiconductor start-up company, has unveiled a breakthrough in semiconductor technology that enables the surface of the chip itself to sense parameters such as temperature, humidity, certain gases and pathogens.

The 0.13  $\mu\text{m}$  sensor chip has obvious applications as an all-electronic replacement for the type of electromechanical thermostats and humidistats used in building management and environmental monitoring systems.

Until now, most sensors have been manufactured on glass or ceramic substrates, using specialist materials and manufacturing processes, and have proved difficult, if not impossible, to accommodate within mainstream foundry CMOS processes.

However, ChipSensors' proprietary technology enables sensors, signal conditioning circuits — including high-resolution analog-to-digital converters and RF transceiver functions, together with the microcontroller and memory — to be integrated on a single chip, fabricated entirely from standard CMOS.

Contact: Tim Cummins, CEO, ChipSensors. Tel: 061- 635732; email: [tim.cummins@chipsensors.com](mailto:tim.cummins@chipsensors.com)

# MLCP Press Fittings Product Development

# Uponor

Uponor are pleased to announce the launch of the improved MLC Press Fittings. Now featuring a stop ring which is colour coded to indicate the fitting size, and fall away to indicate a joint has been successfully completed.



Positioning : the jaws are fitted up to the stop ring



Pressing : the stop ring falls away once the fitting is pressed



Completion : the slim design fitting is completed



Existing Uponor jaws and inserts can be used with the new fitting range, and prices & product codes do not change.

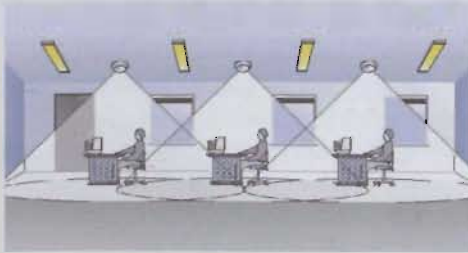
[www.uponorhousingsolutions.ie](http://www.uponorhousingsolutions.ie)

**Uponor Housing Solutions**

T: 01 895 7430

E: [sales@uponorhousingsolutions.ie](mailto:sales@uponorhousingsolutions.ie)

## trade news + product information



### busch-watchdog — sensing the difference

ABB's Busch-Watchdog Presence Tech is claimed to be the most intelligent way to save energy as it senses when a room is empty and switches lighting, heating and/or ventilation off accordingly.

The Presence Tech is based on infrared radiation — or heat radiation — detected when a person enters the room. Monitoring this heat radiation allows the Presence Tech to save maximum energy by allowing the systems to switch on/off depending on the conditions.

An off-delay for the lighting can be selected using the "time/light" feature, bridging standstill periods and irregularities (ie when a person leaves the room briefly). This setting is available for all applications, allowing the HVAC output switches to operate independently from brightness.

Finally, the Intelligent on-delay, which is dependent on the HVAC, enables the Presence Tech to consider specific requirements defined in connection with the off-delay. This ensures that the HVAC output is only switched on if continuing movement is detected.

Contact: Jim Menton, ABB Ltd. Tel: 01 - 405 7300; email: [marketing@ie.abb.com](mailto:marketing@ie.abb.com)

### ipfma examines high rise option

The highly-topical issue of high rise intensification of city development with mixed use schemes was debated at this year's Irish Property & Facility Management Association's (IPFMA) conference in Dublin.

Distinguished Irish and overseas professionals in architecture, construction and investment examined the considerable challenges currently facing developers and investors. The key focus was on whether highly-intensified vertical landmark buildings, with mixed leisure, office, retail and residential use, is the way forward.

Conference speakers included John Bruder, Managing Director of Treasury Holdings in Ireland, and Eric Kuhne, an internationally-acclaimed architect whose company is currently building major mixed-use centres in the UK and Northern Ireland.

Contact: David O'Brien, Chairman, IPFMA. Tel: 01 - 241 2200.



David O'Brien, Chairman of the IPFMA, with speaker John Bruder, Managing Director, Treasury Holdings in Ireland.

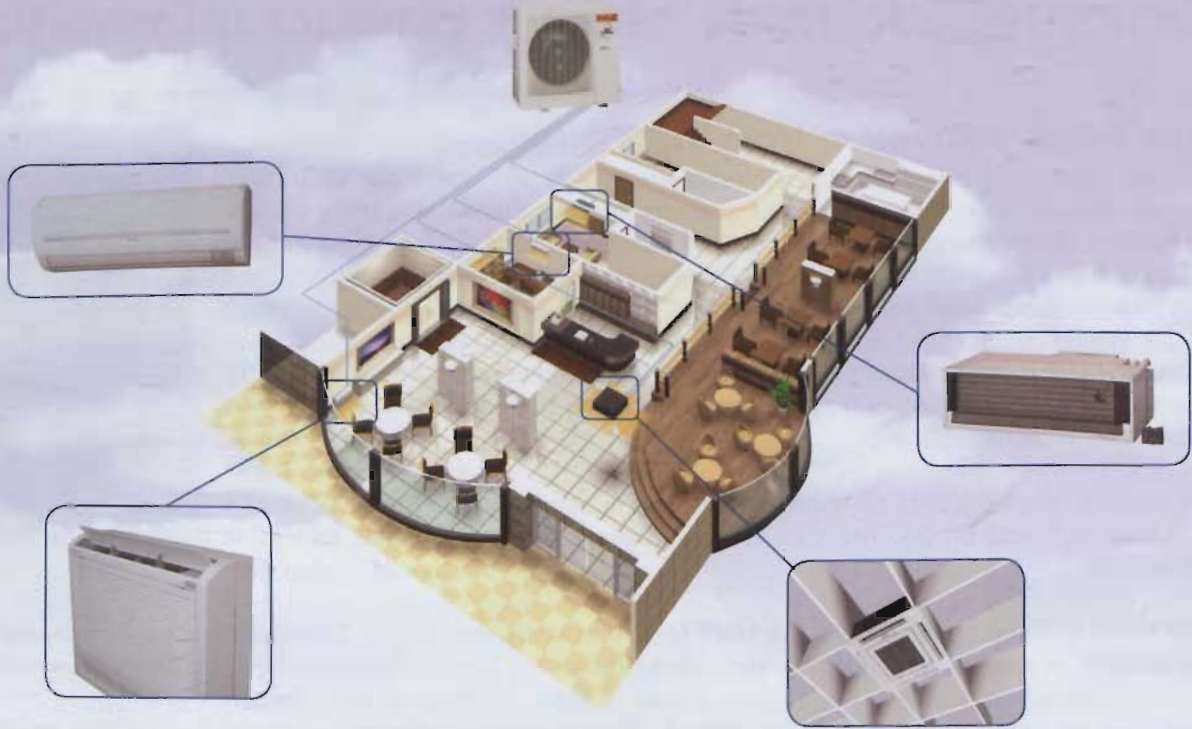
### dri-steem awarded honours at pharमतex 2007

Dri-Steem was awarded the "Product Innovation Award" for its innovative "Ultra-Sorb and Rapid-Sorb Insulated Tube Option" at the recent Pharmatex 2007 show. Distributed by Intelligent Building Controls, the new insulated tubes for Dri-Steem's dispersion systems provide:

- Reduction of wasted energy by up to 85%;
- Reduction of air stream heat gain;
- Reduction of dispersion-generated condensation production.

Substantial cost-saving improvements are achieved by reducing the thermal conductivity of dispersion tubes with polyvinylidene fluoride (PVDF), an advanced insulation that meets stringent duct/AHU requirements. This material is fire/smoke plenum rated and supports continuous temperatures of 149°C. The closed cell technology will not absorb water or support microbial growth.

Contact: Rich Costa, Intelligent Building Controls. Tel: 01- 458 1420; email: [richc@intelcontrols.com](mailto:richc@intelcontrols.com).



# You'll wish your family got along this well

The innovative Hitachi Monozone/Multizone range just works - no arguments.

Delivering unparalleled performance and efficient cooling or heating for up to four rooms, the range also offers a range of performance-related benefits.

The award-winning DC inverter PAM technology reaches temperature settings rapidly and achieves energy savings of up to 30% with no loss of comfort.

DC-driven fans and compressors deliver a 10% increase in performance.

Cooling available down to -10°C ambient temperature.

Heating available down to -15°C ambient temperature.

You can choose and connect freely from different types of indoor units and outdoor units depending on the number of rooms, width and shape of the room and preferences.

To find out more call:

**HITACHI**  
Direct + 353 1 2164406

**MONO**  
**MULTI**  
**ZONE**



**HITACHI**  
Inspire the Next

## trade news + product information

### mcr-eco latest innovation from mark eire

Mark has been fabricating climate control products since 1945 and is now one of Europe's biggest producers with an extensive range of products for the industrial and utility market. Based in Holland, it has a wholly-owned subsidiary operating out of Coolea, Macroom, Co Cork since 1987 and this plant has constantly been to the forefront with the introduction of innovative new products.

In recent years Mark Eire has invested large sums in both research and development and production facilities and the fruits of that effort are now being realised in a whole series of new product introductions.

The Mark product range consists of air heaters, radiant heating, ventilation products, air handling units and pipe bending machines. These product groups can also be separated into gas fired, oil fired or indirect water or steam heating products.

One of the latest to come on stream are the Mark MHR and MHR-eco ranges. These units are delivered to site as complete systems, in one piece and inplug-and-play fashion.

With these units air displacement from 800m<sup>3</sup>/h to 4.000m<sup>3</sup>/h can be delivered for indoor and outdoor solutions while the isolator switch is mounted as standard. TACTech control is also part of the unit.

Applications include offices, shops, dressing rooms, shopping centres, hotels and car showrooms.

Contact: Mike O'Donoghue or Mairead Twomey, Mark Eire. Tel: 026 - 45334;  
email: sales@markeire.com



### renewable energy launch

Pictured at the carbon neutral launch of renewable energy company Imperative Energy at the Davenport Hotel, Dublin, recently — where guests were presented with a birch sapling — were Eamonn Ryan, TD, Minister for Energy & Communication and directors of the new operation Mossie T Ryan, Greenbelt Ltd and John R Bowen, the Bowen Group.

### duct-mounted airflow measurement station

The Series FLST airflow measurement station from Manotherm is easy to install — simply connect the tubing to the station fittings, then to a differential pressure manometer, gauge, transmitter or switch.

Single or multiple airflow elements are factory-mounted and pre-piped in a casing designed for flanged connection to the ductwork. Standard materials consist of G90 galvanised casing and 6063-T5 anodised aluminium flow sensors, suitable for most HVAC applications.



The Series FLST utilises an airflow averaging element in a head-type device, generating a differential (velocity) pressure signal similar to the orifice, venturi and other, head-producing, primary elements.

Strategically-located sensing ports continually sample the total and static pressure when inserted normal to flow.

Contact: Bob Gilbert, Noel Walsh or Robert Gilbert, Manotherm. Tel: 01 - 452 2355;  
email: info@manotherm.ie



Paul Sexton, Mitsubishi Electric with Declan Kissane, Unitherm Heating Systems

## mitsubishi appoints unitherm

Mitsubishi Electric has appointed Unitherm to distribute its Mr Slim Heat Pump Boiler hot water and heating system. Using inverter-driven heat pump technology, this new unit offers a low-carbon alternative to traditional boilers in modern buildings, whether they are new-build or refurbishment.

Benefits include:—

- Low running costs;
- Low maintenance;
- Simple installation;
- Single-phase power supply;
- Summer cooling option.

There are two versions of the Mr Slim Heat Pump Boiler available — either heating only or combined heating and cooling. Both come in a 9kW size and are capable of heating water to 60°C.

Contact: Declan Kissane, Unitherm. Tel: 01 - 621 2939;  
Peter Lyskey, Unitherm. Tel: 091 - 380 038; email: [info@uni-therm.net](mailto:info@uni-therm.net)

## Lowara pumps and booster sets. Controlled pressure at the office.

Safety in any workplace should be a priority. As well as the building's water supply, Lowara pressure booster sets and pumps maintain supply for its fire fighting applications. Certified to European standards, high levels of performance and reliability guaranteed.  
**Excellence in water technology.**

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

**LOWARA**

**ITT**  
*Engineered for life*

Lowara Ireland Ltd. | 59 Broomhill Drive | Tallaght Industrial Estate - Dublin 24 | Tel. (01) 4520266 | [lowara.ireland@itt.com](mailto:lowara.ireland@itt.com)

# glasson weekend

Great golf, good company and great craic were in abundance at the BTU Golf society weekend away in Glasson. The weather too played its part with the pleasant dry conditions resulting in some fine scores.

The by now standard mix of a superb location with top-class accommodation were topped off by the presence of a generous sponsor in Versatile Heating Solutions. Bill and Catherine Treacy's input was not limited to the provision of prizes but also included a very active and enthusiastic contribution to the overall proceedings.

The overall men's prize on Saturday went to Mick Matthews with Angela Brady winning the ladies section. The proceedings concluded with an X-factor style talent contest with the hilarious trio of Gerry Tobin, Geraldine Hutchinson and Michael Brady acting as music industry moguls.

Captain Jim Bolard thanked the sponsors and all those who attended to round off a truly memorable weekend.



Overall ladies winner Angela Brady (right) with sponsor Catherine Treacy, Versatile Heating Solutions



Mick Matthews with Gerry Tobin and Graham Fay



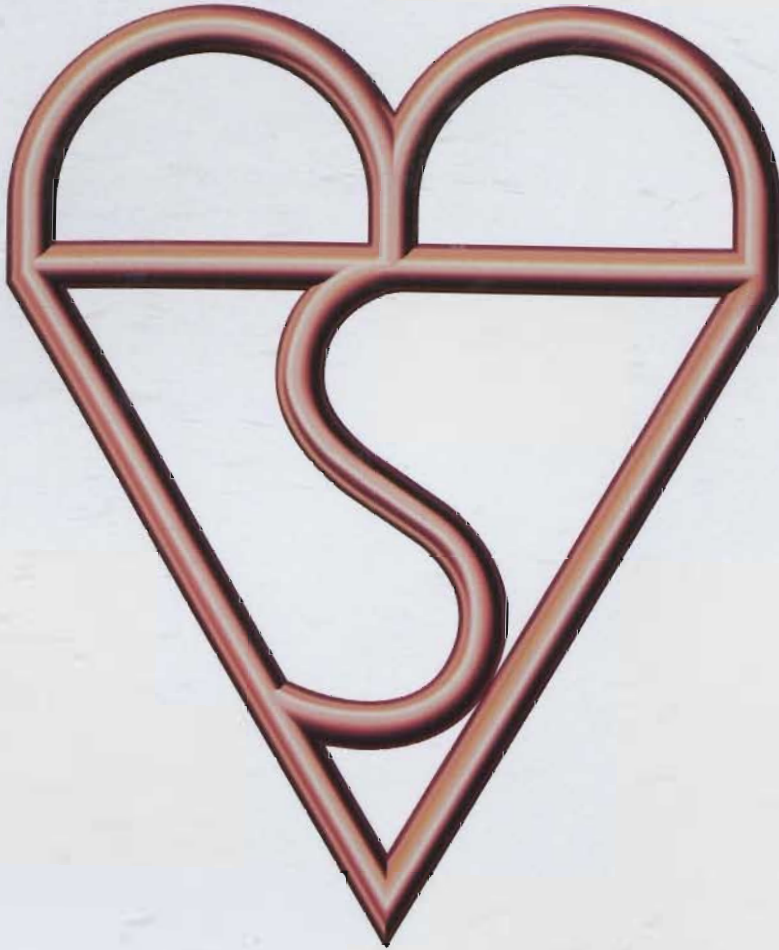
Overall gents winner Mick Matthews with sponsor Catherine Treacy, Versatile Heating Solutions



Andrew and Bill Treacy, Versatile Heating Solutions, sponsors of the weekend

Dave Harris, BTU with winners of the scramble on Friday, John & Pauline Littlefield, Catherine Treacy, sponsor and Jim Bollard, BTU Captain





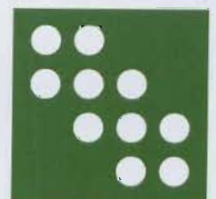
➔ **YORKSHIRE MEDICAL:  
FROM IRISH METAL INDUSTRIES**

NOW KITEMARK CERTIFIED TO BS EN 13348

**COPPER TUBE FOR MEDICAL GAS, OXYGEN OR VACUUM LINES**

Now Kitemark certified for the full range covered by BS EN 13348, Yorkshire Medical Gas tubes provide safe and reliable service in environments where safety is paramount. Special quality control, cleaning and packing procedures ensure that all Yorkshire Medical Gas tubes are of a consistently high standard for medical usage.

That's why Yorkshire Medical Gas tubes are the products of choice for customers throughout the world. You're safe with Yorkshire - specify it from Irish Metal Industries.



**Irish Metal  
Industries**



## president's day at newlands



Garvin Evans with Jim Bollard and Brendan Bracken

The President's Prize was held in Newlands Golf Club with 45 people playing golf on the day. It was a wonderful and enjoyable occasion, thanks in no small measure to the beautiful weather and the excellent condition of the course. The golf was followed by a great meal in the clubhouse.

Congratulations to Sean Stenson who won the President's Prize with a fantastic score of 40 points. Special thanks also to sponsors on the day, C & F Quadrant Ltd.



John Duignan, C&F Quadrant, sponsor with John White, Winner, Front 9

Full list of winners is as follows:—

### Overall Winner

Sean Stenson (40 pts).

### Class 1 (1-13)

Winner — Mick Matthews (34.5 pts);

Second — Brian Molloy (34 pts);

Third — Graham Fay (34 pts).

### Class 2 (14-17)

Winner — Gerry Tobin (34 pts);

Second — Bernie Costelloe (34 pts);

Third — Seamus Kiernan (33.5 pts).

### Class 3 (18 +)

Winner — Ben McMahon (35 pts);

Second — Martin McKeon (32 pts);

Third — George Larkin (29.5 pts).

### Visitors

Winner — Gerard Birmingham (35 pts).

### Front 9

Winner — John White (20 pts).

### Back 9

Winner — Steve Jones (18 pts)

## grange results

The Gods looked favourably on the BTU for the outing at The Grange with dry sunny conditions and pleasant temperatures making for an excellent day's golf.

Over 50 golfers enjoyed the day which was sponsored by Danfoss Ireland. The course itself, while well presented, proved a stern test for the 50 participants with tales of missed putts and difficulty negotiating the trees commonplace in the post-golf analysis.

Full list of winners is as follows:—

### Overall Winner

Robert Kenny (35 pts).

### Class 1 (1-13)

Winner — Des Prendergast (32 pts);

Second — Michael Morrissey (31.5 pts);

Third — Kieron Ryan (30.5 pts).

### Class 2 (14-17)

Winner — George Carlton (29 pts);

Second — Bernie Costelloe (28 pts);

Third — Dave Cranston (27.5 pts).

### Class 3 (18 +)

Winner — Martin McKeon (31 pts);

Second — Garvin Evans (31 pts);

Third — Noel McKeon (30.5 pts).



John Duignan, C&F Quadrant, sponsor with Gerry Tobin, Winner, Class 2

Brian Molloy, Second, Class 1



Incredible 3D depth that  
no one has captured before.



**Potterton Myson (Irl) Ltd**

Belgard Road, Tallaght, Dublin 24

Tel: 01 - 459 0870 Fax: 01 - 459 0880

email: [post@potterton-myson.ie](mailto:post@potterton-myson.ie)

[www.valor.co.uk](http://www.valor.co.uk)

# IoPHE, REGII & IHPA Response to CER Gas Installer Regulation Vision Document

The IoPHE, REGII and the IHPA appreciate and very much welcome this very important initiative that all installers and service agents will be qualified and licensed to work on natural gas appliances and installations. This will go a long way to improving the safety and indeed the overall delivery of quality and customer service of natural gas installations in Ireland.

Regulation of the natural gas industry and natural gas installers with respect to safety will also ensure that the days are finally over for rogue elements that have blighted our industry and preyed on unsuspecting customers.

## Key Objectives

The key objectives for our organisations and members are as follows:

- To protect life and property while minimising the safety risks related to natural gas installations;
- To aggressively promote public awareness of gas safety;
- To educate customers on the risks of using Non-Registered Installers.

## Financial/Funding

The issue of funding and who pays in the short, medium and long term is a critical issue that needs to be addressed by the CER at the outset. In general, when this issue arises you will invariably get responses such as "installers will have to pay" or "the customer will have to bear the additional cost". It is not

surprising that the people who give those responses are neither installers nor customers. For this process to be successful it is critical that a budget is secured to fund the new regime in the short and medium terms.

It will also be a key objective for our organisations moving forward that any additional costs arising from this process will be paid by the overall gas industry and not just installers/service companies. The CER, Bord Gais Networks, Bord Gais Energy Supply, manufactures, training bodies and indeed the HSE — all whom have a vested interest and will benefit from improved risk-based public awareness of gas safety — must contribute to the funding. The issue of voluntary contributions should also be explored.

## Gas Safety Supervisory Body

The CER will designate a Gas Safety Supervisory Body to operate the day-to-day regulation of Registered Gas Installers. While there is obviously a requirement to go out to tender for the body, the CER must ensure that equal opportunities and support is afforded to all interested parties and, in particular, to home-based organisations and/or individuals. There is huge knowledge and experience, both within and on the periphery of the natural gas industry in Ireland. This invaluable resource should be tapped into to successfully operate the Gas Safety Supervisory Body, especially in the critical first five-

year period of the scheme.

## Landlords

The issues around the rented accommodation sector and the absence of responsible landlords continues to be an area of specific concern. This sector throws up a high number of "near misses" and safety instances each year. The changing dynamics in our society, particularly related to the movement of foreign nationals and indeed students, has resulted in approximately 80,000 change-of-occupancy of cases. It is a very difficult sector to manage and is one of the highest risk areas.

An annual safety check certificate must become mandatory and perhaps could be linked to the Energy Performance Building Directive (EPBD) initiative. In our opinion it is critical to ensure the new tenants receive a copy of an up-to-date safety certificate.

## Non-Registered Installers

We have often been led to believe that the operation of the CORGI scheme in the UK means that they do not have a problem regarding unregistered installers. This is not so. While there are a lot of positives with the CORGI operation in the UK, the issue of non-registered installers operating in that marketplace is an area that they have not been able to crack. Despite the prevalence of illegal activity there have been very few successful prosecutions, much to the frustration of *bona fide*



# CHOOSE MAGNA FOR EFFICIENCY AND RELIABILITY

Making pump selection simple



## THE RANGE THAT SAVES

The A-labelled MAGNA range handle flows from 1 to 39m<sup>3</sup>/h using the minimum of precious energy. Easily installed and complete with the unique Grundfos AUTOADAPT function, MAGNAs help save time, money and the environment.

Learn more about MAGNA efficiency in commercial buildings at: [www.energyproject.com](http://www.energyproject.com)



# IoPHE, REGII & IHPA Response to CER Gas Installer Regulation Vision Document

CORGI-registered Installers. The lack of successful prosecutions and the limited action taken against illegal installers has been seen as an insufficiently effective deterrent.

There won't be any easy "one fix fits all" solution available in Ireland either. There are, however, a number of "quick wins" available to us and we also need to use both the carrot and stick, and name and shame, approach.

## Competency Levels

While the registration body must focus on the category of non-registered installers, there are some concerns regarding the competence of registered installers. Inspection levels need to be increased to improve overall standards across the industry.

## Certificates of Conformance

Safety and commissioning certificates must be issued for all gas works carried out, i.e., new installations, upgrades, new appliances, servicing and repairs. Regrettably, the certification process operated by Bord Gais for the past 20 years has not been entirely successful, mainly because of the following reasons:—

- (1) Absence of a formal process for return of certs to BGE;
- (2) BGE only requiring certs for new meter fits;
- (3) Certs issued by people who are not competent and accepted by BGE;
- (4) Certs not issued at the time of the tests;

- (5) Commissioning certs issued prior to gas being introduced, rendering cert useless;
- (6) Customers not receiving their copy of the cert;
- (7) Certs not viewed as an important and/or valuable document by all parties;
- (8) Installers not retaining their copies of the cert for audit purposes.

Other important issues regarding certification that need to be debated and clarified are as follows:—

- How long is a cert valid for?
- When issuing a cert for an appliance fit-only, are you also accepting responsibility for the rest of the existing installation and appliances?
- When servicing or repairing an appliance, you are not responsible for other appliances on the same premises that may — unknown to you — be unsafe. Yes or No?
- Is there a requirement to issue a second cert when working on an appliance following a warranty callout? e.g., 15 days after original repair?
- For operational reasons BGE currently looks for certs to be completed and left on site before BGE has introduced gas to the installation. You cannot fully certify and commission an installation/appliance unless gas has been introduced. This serious anomaly needs to be addressed to protect both

the installer and integrity of the certification process.

## Conclusion

The aforementioned points represents our initial comments on the Vision Paper. They also relate to some of the problems and issues we as organisations, and our respective members, have experienced with the current process operated by BGE.

It is important that we learn from the mistakes and errors of judgement made by others, particularly our nearest neighbour in the UK. The UK scheme managed and overseen by the HSE and CORGI has been promoted as the model to follow. However, research has identified a disturbingly low (<50%) public awareness of the risks of carbon monoxide poisoning (CO).

In addition, the very high number of non-CORGI registered installers operating in that marketplace has led to a lot of disquiet among the registered installers, culminating with a review by the HSE. This has led to the reforming of the domestic gas safety regime to improve safety standards for gas customers.

We look forward to working together with all stakeholders regarding the significant challenges facing our industry and particularly regarding the number one priority for us all and that is to ensure customer safety.

# MYSON the made in Ireland brand

Built specifically for Ireland, only Myson supply 1/2" valves directly from their new state of the art factory at Newcastle West, Co Limerick, including the robust Matchmate and the ever popular TRV 2 WAY.

Come and see for yourself. To arrange your factory visit or for more information please call Gerard Costelloe on 069 62277.

**Myson Controls - Made here for you.**



Newcastle West  
Co. Limerick



TRV 2 WAY



Motorised valves



Matchmaster



Matchmate

**heatingthroughinnovation.**

**MYSON CONTROLS** Newcastle West, Co. Limerick, Ireland.  
enquiries@myson.ie www.myson.ie Telephone: 069 62277

# Wilo Stratos ECO Comes Out Tops in Survey

Wilo's high-efficiency Stratos ECO pump has been given the overall mark "excellent" by the German consumers' association Stiftung Warentest. It prevailed as the best of the test in energy efficiency and the price-performance ratio compared to all other heating pumps included in the recent survey.

Stiftung Warentest was established in 1964 by the German Bundestag and since then it has been testing products and services by means of scientific methods in independent institutes. The anonymous manner in which the products concerned are sourced and tested has reinforced the independence of the test results and made their findings all the more valued and significant.

In the current heating pump test the Wilo-Stratos ECO obtained the best of all evaluations concerning energy efficiency with the mark 1.3. It is confirmed by Stiftung Warentest that within a period of 20 years in "typical single-family house" applications, the product produces electricity costs of only €238. This implies that the long-term electricity costs of the Stratos ECO are about 23% below the costs of the second-placed pump in the survey, and as much as 80% less when compared to the lowest-ranked pump in the survey.

Moreover, in the category entitled "handling" — which covers the operating manual, installation and commissioning, operation and maintenance — the Wilo-Stratos ECO was also given an "excellent" rating.

Regarding the pumps with

energy efficiency Class A rating, Stiftung Warentest found the Wilo-Stratos ECO price of €360 to be "middle-price", whereas the prices of the two competitor products, which were also tested, amount to €375 or €450 respectively.

Compared to all heating pumps tested, the survey found that the Wilo-Stratos ECO — with its purchase and operating costs under €600 — to be the most economical product over a 20-year operational period..

"Wilo appreciates the fact that Stiftung Warentest raised awareness about efficiencies and life-cycle costs among consumers", says Wilo Engineering's Tony Cusack, "as this will continue to accelerate the market penetration of the high-efficiency and cost-saving Wilo-Stratos ECO and also highlight its CO<sub>2</sub> reduction benefits.

"The reference value table contained in the test survey is especially helpful as it compares the old energy-guzzling pumps, which cost between €100 and €150 in electricity charges per year for a 3-person household

with 520-800 KWh, with the new high-efficiency pumps, which cost only €11 to €29 annually with a consumption of 60/150 KWh".

Given the survey's findings Stiftung Warentest recommends that householders don't wait until the old pump fails but to replace it immediately with the new pump generation.

Tony Cusack concludes: "We consider the results of this famous test institute as a real gift and will use them for a major marketing offensive. The advantages of saving on electricity running costs and reducing CO<sub>2</sub> emissions are an integral part of our current publicity campaign. We will work closely with skilled installers so they can advise their customers systematically at the start of the heating season just how important it is to make the change".

The results of the heating pumps test can be read at [www.stiftung-warentest.de](http://www.stiftung-warentest.de) or at [www.wilo.de](http://www.wilo.de)





Enda Gilroy

e: enda.gilroy@pmg.ie

# designing BUILDING SERVICES

## simulation design in building services

In this article we will discuss the benefits available to engineers when employing simulation software in their design. With today's increased complexity in building designs, engineers are turning to simulation models to aid them in producing a comfortable and energy-efficient building.

Buildings in the EU use over 40% of Europe's energy and create over 40% of its carbon dioxide emissions, a proportion which is constantly increasing. In order to better understand our building energy requirements and, more importantly energy usage, we need more complex solutions than the standard steady-state calculation methods. Now, more than ever, designers are turning to simulation software.

This is especially true at the early design stage in the case of a new build. Today's modern designs have led to an increased use of glass with the façade being incorporated as an integral part of the building. The introduction of the Energy Performance of Buildings Directive (EPBD) aims to improve and reduce the energy consumption of buildings through cost-effective measures.

To achieve this reduction, designers must look at all aspects of the building, from its orientation through to solar loading, building mass, ventilation options, its HVAC services and its electrical demands. By using simulation software we can use this to better understand how buildings will react to their environment and help predict their environmental impact in terms of energy usage and CO2 output.

### **CIBSE Steady State calculations v Dynamic Thermal Simulations**

The main difference between the CIBSE steady state heat loss/admittance procedures and dynamic thermal simulation is that dynamic thermal simulation has the ability to take account of variations in weather over the course of an entire year, and to carry forward conditions from previous days.

Steady state heat loss is the equivalent of running a 24-hour heated building with no internal heat gains for a long period of time at a constant outside air temperature and no solar income. Remove the internal heat gains from a dynamic thermal simulation model, run

the model using a weather file with a constant outside air temperature and no sunshine. At the end of a 30-day period the simulated heating load is exactly the same as the steady state heat loss calculation.

The admittance procedure uses a 24-hour harmonic to predict summer design day performance using idealised weather data for the design day. The procedure does not have the ability to carry forward the influence on performance of previous days. In fact, the procedure assumes that the design day has been preceded by an infinite number of identical days. To reproduce this type of analysis with dynamic simulation software an extended period of weather data is used. This weather data contains repeated days of the same idealised weather used in the admittance procedure. At the end of a 30-day simulation on repeated day weather the simulated performance is very close to that predicted by the admittance method.

### **Sustainable Building Design**

To achieve sustainable building design a new innovative building design is needed. This



# simulation design in building services

method is based on a 3-D computer model of the building and dynamic simulation methods. The integrated data model (IDM) for the computer includes the building geometry, building constructions, occupancy profiles, etc which describe fully the use and construction of the proposed building design.

This IDM is used with the dynamic simulation methods to predict the energy, comfort and visual aspects of the building. The environmental impact of the building in terms of CO<sub>2</sub> emissions is also predicted. The design process continues until the environmental impact of the building is reduced as much as possible. Many innovative techniques such as daylight

design, passive solar design, thermal mass, night cooling, brise soleil, natural ventilation, etc can be evaluated.

By modelling the effect of natural ventilation and night purging combined with the exposed thermal mass of the building, the peak internal temperatures can be brought within the recommended criteria. Using dynamic modelling we can predict areas of a building where excessive temperatures occur, we can then take remedial action to reduce these temperatures. Simulation software allows the designer to model open-able windows, roof-vents, and mechanical ventilation; these can be brought on individually or in tandem with operating

parameters assigned to them.

An example could include high-level windows to open when the internal temperature rises above 22°C, or open when the outside temperature is between 15°C and 20°C. This can be then used to simulate the effectiveness of night purging.

## Computational Fluid Dynamics (CFD)

The increased use of simulation programs has enabled engineers to focus on more complicated designs. With the increased use of Computational Fluid Dynamics (CFD) we can now use a mathematical model to predict almost every scenario within a space. By using CFD a designer can see the outcome of his/her design before it reaches construction. We can now predict air velocity, air movement, temperature gradients and how equipment in a space effects its surrounding environment. By using this information we can determine, for example, the best points of air distribution outlets.

**Figure 1** left indicates the effectiveness of the use of CFD. Here air is supplied at high level over an operating table. This is used to ensure that the operating area has adequate air distribution to ensure the patient's health and well being. By using CFD the air velocities and temperature gradients can

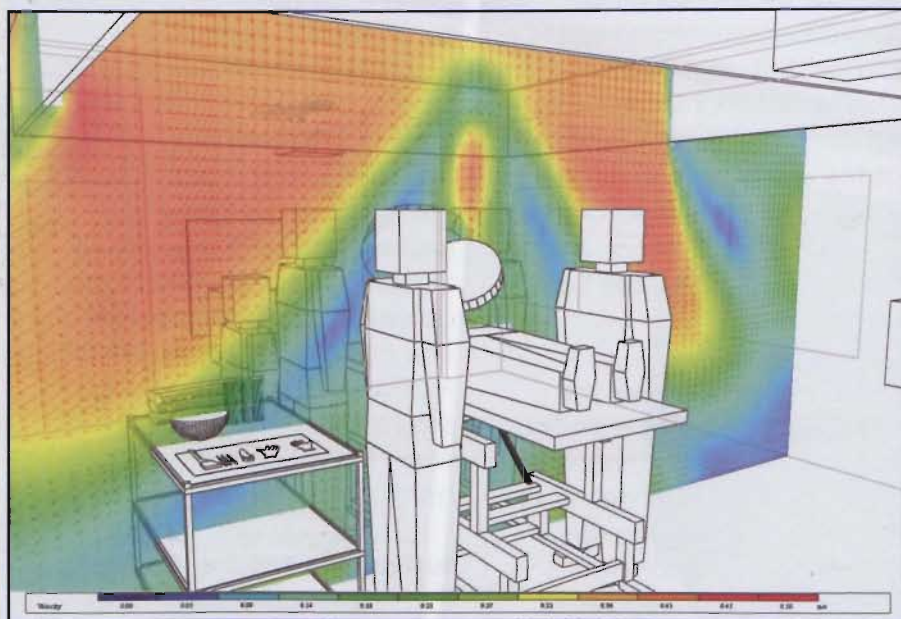


Figure 1 — Computational Fluid Dynamics (CFD) of an operating area (Image courtesy of Integrated Environmental Solutions (IES))

**Your Comfort is our Business**

Mark Eire BV has been supplying the building services industry with heating, cooling and ventilation solutions — along with bespoke control panels — for 20 years. Its state-of-the-art manufacturing plant is ISO 9000/2000 and CE-approved, time-related warranties of 10 years being common for the equipment.

**Key Products**

- Gas-fired suspended unit air heaters;
- Gas-fired make up air units;
- Warm water units, LPHW;
- Ventilation and recirculation units (Eco-fan);
- Industrial burner equipment;
- Air handling units;
- Tube benders;
- Cabinet Heaters (oil/gas — horizontal & vertical);
- Radiant heating (tube/plaque/quartz/aqua panel and complete ceiling).

**Mark Eire BV**Coolea  
Macroom  
Co Cork

Tel: 026 - 45334

Fax: 026 - 45383

email: [sales@markeire.com](mailto:sales@markeire.com)web: [www.mark.nl](http://www.mark.nl)

## simulation design in building services

be modelled within a space to identify any stagnant zones where poor air distribution may be occurring. CFD is also used to model air flow around a building which can be used to see the effects of exhaust points from a building and how these points will interact with their surrounding environment.

CFD is also being employed into the effectiveness of double facades. Although these facades may be aesthetically pleasing, detailed analysis has shown that the effectiveness of these facades is somewhat limited. Double facades take quite a considerable time to design correctly and sometimes are not suited to the building

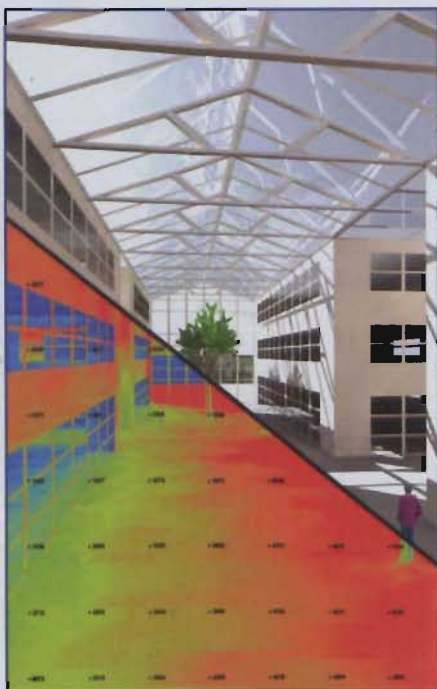


Figure 2 — Radiance Simulation imaging (Image courtesy of IES)



Figure 3 — Simulation to demonstrate what effects glazing will have internally within a building (Image courtesy of IES)

initially anticipated. These results may be conveyed to both the architect and client at an early stage, as they can be costly in design time and, more importantly, are a costly part of the building's construction. Simulation packages are used to show how these facades interact with the building over the course of a year and demonstrate their positive and negative effects to the space.

### Daylight Analysis

People are more comfortable if they can relate to outside weather conditions and enjoy daylight. The Radiance program can simulate the amount of daylight experienced in the space and allow designers a three-dimensional

view of the working conditions that occupants will be using. Excessive window area can lead to glare, particularly if people are working at computer monitors. The Radiance simulation program can also provide information on the possibility of glare.

It can be difficult to determine the time of day and season when glare could be a problem on computer screens. This can be made more difficult if the sun can reach the workstation from the perimeter windows or from an atrium. By using the Radiance Simulation (Figure 2), areas of interest or concern can be identified quickly and remedial action can be taken.

# simulation design in building services

## **Solar Analysis and Site Conditions**

Simulation packages are now used to determine how a building will react within its proposed environment, parameters such as solar shading, and how surrounding buildings effect not only shading but wind velocities around the proposed model. The orientation of the model can be easily changed to optimise the best location for the building, where before these aspects were previously too complicated or time-consuming to be analysed.

We can use simulation to demonstrate to a client what effects glazing will have internally within a building (Figure 3, previous page) and produce detailed studies of lighting effects within a space. This can prove useful in determining the amount of natural light and how light affects the visual aspects within the building.

## **Complete Building Services Design**

Simulation software may also be used in conjunction with HVAC system sizing software packages. This allows the results of simulations to be directly imported into the sizing programs of the mechanical and lighting services within a building. This has the added advantage during design

development, where changes in the design can be incorporated with the click of a button.

We can also now employ the use of renewable technologies, wind generation, CHP and solar technology which can be inputted into the software. This can now be used to offset the buildings carbon emissions, which in turn may lead to a higher building energy rating. An engineer can now check for compliance with the Building Regulations and for the incoming Building Energy Rating (BER). These packages let the engineer explore different alternatives to reducing the building energy consumption and carbon dioxide emissions.

## **Conclusion**

More than ever, young engineers are taking advantage of these simulation packages and, while they may have the technical and academic ability, they may lack in some practical "real world" experience. With some basic training anyone can build a model and get some basic results. However, it is the understanding of these results and how they will affect the size and type of services required within a project that counts. All results should be cross-checked against the CIBSE rule of thumb books, as these can provide a quick check to see if the results obtained from the simulation are

in line with industry norms.

The increased public awareness of energy usage means that simulation packages are becoming more important when designing our buildings. Clients want a prediction of how their building will perform before it is constructed. By modelling a building, we can contribute more during the early stages of design and, working with the architect, can productively influence the shape and form of buildings to achieve more efficient designs.

## **References**

CIBSE Briefing 8 Reducing emissions through energy efficiency;

Beattie K. Thesis; An Improved Design Methodology for Sustainable Building Design.

*Enda Gilroy, Dip. Eng, B. Eng, joined Project Management Group as a Graduate Engineer from DIT Bolton St and has been with PMG for one and a half years. He works in the building services department as a design engineer and is part of the internal simulation design team. He has a diploma and honours degree in building services engineering and has previous experience from the mechanical contracting side of the industry. He is also a part-time lecturer in DIT Bolton St.*



# HOW CAN YOU **DROP** HOT WATER COSTS AND CO<sub>2</sub> EMISSIONS?

# Easy... Mitsubishi Electric's revolutionary Mr Slim Heat Pump Boiler provides substantial reductions in running costs and carbon emissions.

Our unique Heat Pump Boiler provides domestic hot water and heating, with incredible design flexibility and excellent use of energy.

Heat pumps are much more efficient than a conventional gas or electric boiler and by utilising heat energy from natural sources such as air, earth or water; they reduce carbon emissions by up to **45%**.

**Available from summer 2007**

Call **(01) 419 8800** today to **Drop** your running costs and carbon emissions.



 **MITSUBISHI  
ELECTRIC**

Telephone: **(01) 419 8800**

email: [sales@meirmee.com](mailto:sales@meirmee.com)

web: [www.mitsubishielectric.ie](http://www.mitsubishielectric.ie)

## F-Gas Regulations — Recent Important Developments

Earlier this month, the F-gas Regulatory Committee met in Brussels to agree the final version of three Commission Regulations pertaining to the refrigeration and air-conditioning sector. Each of these Regulations is pursuant to Regulation (EC) No 842/2006 on Certain Fluorinated Greenhouse Gases (F-Gas Regulations). *Enda Hogan, MIRI, has prepared this special report for bs news on behalf of the Institute of Refrigeration of Ireland.*

These new Commission Regulations establish:—

- (a) Standard leakage checking requirements for stationary refrigeration, air conditioning and heat pump equipment containing certain fluorinated greenhouse gases (due to enter into force 20 days after publication in the Official Journal of the EU);
- (b) The format of labels and additional labelling requirements as

regards products and equipment containing certain fluorinated greenhouse gases (effective on 1 April, 2008);

- (c) The format for the report to be submitted by producers, importers and exporters of certain fluorinated greenhouse gases (will enter into force 20 days after publication in the OJ of EU).

These documents are now available on the website of the Institute of Refrigeration Ireland and it is recommended that everyone involved with — or who has a professional interest in — refrigeration, should read them. Of particular importance is the regulation setting out the standard leak-checking requirements. The text of the articles contained in this regulation is given below. The Regulation is due to be published in the Official Journal before the end of the year and without further changes.

Standard leak-checking

requirements for stationary refrigeration, air conditioning and heat pump equipment:—

### Article 1 — Subject matter and scope

This Regulation establishes, pursuant to Regulation (EC) No 842/2006, the standard leakage checking requirements for working and temporarily out-of-operation stationary refrigeration, air conditioning and heat pump equipment containing 3kg or more of fluorinated greenhouse gases.

This Regulation will not apply to equipment with hermetically-sealed systems which are labelled as such and contain less than 6kg of fluorinated greenhouse gases.

### Article 2 — Equipment records

- (1) The operator shall indicate his name, postal address and telephone number in the records referred to in Article 3(6) of Regulation (EC) No 842/2006, hereinafter "equipment records";
- (2) The fluorinated greenhouse gas

charge for the refrigeration, air conditioning or heat pump equipment shall be indicated in the equipment records;

- (3) Where the fluorinated greenhouse gas charge for refrigeration, air conditioning or heat pump equipment is not indicated in the manufacturer's technical specifications or on the label of that system, the operator shall ensure that it is determined by certified personnel;
- (4) Where the cause of the leakage has been identified, it shall be indicated in the equipment records.

### Article 3 — Checking equipment records

- (1) Before carrying out leakage checks, certified personnel shall check the equipment records;
- (2) Special attention shall be paid to relevant information on any repeating issues and problem areas.

## MARREN ENGINEERING AND MCQUAY

### An engineered solution to air conditioning

Marren Engineering works in partnership with McQuay International - global leaders in system solutions for air conditioning, heating, ventilating and refrigeration - to provide a complete range of quality chillers designed for reliability and high-energy efficiency. By combining the Marren Engineering expertise with the high performance of McQuay products, we deliver the most flexible, innovative and turnkey solutions for our clients.

#### MCQUAY AIR COOLED CHILLERS

Sizes range from 35 kW to 1580 kW. Designed for quiet, reliable and efficient operation. McQuay offer two main ranges of air cooled chillers run on the energy efficient R134A; the ALS Range (600kW - 1580kW) and the McEnergy Range (180 - 580kW). Standard or High efficiency options are available each offering as many as 5 different acoustic versions down to 62dB(A) at 1m. McQuay provide a range of screw compressor R407C chillers known as the McPower range and for smaller applications, the scroll compressor R407C McSmart range (35 - 160 kW).

#### MCQUAY WATER COOLED CHILLERS

Sizes range from 35 kW to over 9450 kW. The WHS range (335kW - 1893kW) feature McQuay's efficient single screw compressor especially designed and optimised for use with HFC 134a. For smaller applications, the single screw Ecoplus range starts from 165kW to 540kW. McQuay also offer a cost effective R410A screw compressor chiller called the Proximus Range (kW). For larger scale needs up to and over 9450kW, McQuay's offers its range of WCS-WDC Centrifugal chillers.

Marren Engineering is the sole agent for McQuay in Ireland.



Water Cooled  
WHS Range



Air Cooled  
McEnergy  
Range



Air Cooled  
ALS Range



**Marren Engineering Limited**  
1 The Seapoint Building  
Clontarf, Dublin 3

Tel : 01 8334144 Fax : 01 8334182  
[www.marrenengineering.ie](http://www.marrenengineering.ie)  
email : [info@marrenengineering.ie](mailto:info@marrenengineering.ie)



## F-Gas Regulations — Recent Important Developments

### Article 4 — Systematic checks

- (1) The following parts of the refrigeration, air conditioning or heat pump equipment shall be systematically checked: —
- joints;
  - valves including stems;
  - seals, including seals on replaceable driers and filters;
  - parts of the system subject to vibration;
  - connections to safety or operational devices.



analysed, referred to in Article 7(1), give reliable information on the fluorinated greenhouse gas charge indicated in the records of the equipment and the likelihood of leakage.

### Article 5 — Choice of measuring method

- (1) Certified personnel shall apply a direct measuring method as specified in Article 6 or an indirect measuring method as specified in Article 7 when carrying out a leakage check in relation to refrigeration, air conditioning or heat pump equipment;
- (2) Direct measuring methods may always be applied;
- (3) Indirect measuring methods shall only be applied where the parameters of the equipment to be

### Article 6 — Direct measuring methods

- (1) To identify leakage, certified personnel shall use one or more of the following direct measuring methods:—
- check of circuits and components representing a risk of leakage with gas detection devices adapted to the refrigerant in the system;
  - application of ultraviolet (UV) detection fluid or suitable dye in the

- circuit;
- proprietary bubble solutions/soapsuds;
- (2) Gas detection devices referred to in paragraph 1(a) shall be checked every 12 months to ensure their proper functioning. The sensitivity of portable gas detection devices shall be at least five grams per year;
- (3) The application of UV detection fluid or suitable dye in the refrigeration circuit shall only be undertaken if the manufacturer of the equipment has approved that such detection methods are technically possible. The method shall only be undertaken by personnel certified to

undertake activities which entail breaking into the refrigeration circuit containing fluorinated greenhouse gases;

- (4) Where the methods specified in paragraph 1 of this Article do not identify a leakage; the parts referred to in Article 4 show no sign of leakage; and the certified personnel deems that there is a leak, he shall inspect other parts of the equipment;
- (5) Prior to pressure testing with Oxygen-Free Nitrogen (OFN) or another suitable pressure testing gas to check for leakage, fluorinated greenhouse gases shall be recovered from the whole system by personnel certified to recover fluorinated greenhouse gases from the specific type of equipment.

### Article 7 — Indirect measuring methods

- (1) To identify a leakage, certified personnel shall carry out a visual and



# AQUAFORCE™

AIR-COOLED LIQUID CHILLER  
WITH DX-FREE COOLING

## THE FORCE IS WITHIN



AIR CONDITIONING LTD

Published by ARROW@TU Dublin, 2007

Unit A6, Centre Point Business Park, Oak Road,  
Clondalkin, Dublin 22

Tel: 01 - 409 8912

Fax: 01 - 409 8916

email: [info@coreac.com](mailto:info@coreac.com)

web: [www.coreac.com](http://www.coreac.com)

## F-Gas Regulations — Recent Important Developments

out a visual and manual check of the equipment and analyse one or more of the following parameters:—

- (a) pressure;
  - (b) temperature;
  - (c) compressor current;
  - (d) liquid levels;
  - (e) recharge volume.
- (2) Any presumption of fluorinated greenhouse gas leakage shall be followed by an examination for leakage using a direct method as specified in Article 6;
- (3) One or more of the following situations shall constitute a presumption of leakage:—
- (a) a fixed leakage detection system indicates leakage;
  - (b) the equipment produces abnormal noises or vibration or ice formation or insufficient cooling capacity;
  - (c) indications of corrosion, oil leaks and component or material damage at possible leakage points;
  - (d) indications of leakage from sight glasses or level indicators or other

visual aids;

- (e) indications of damage in safety switches, pressure switches, gauges and sensor connections;
- (f) deviations from normal operational conditions indicated by the parameters analysed, including readings from real time electronic systems;
- (g) other signs indicating refrigerant charge loss.

### Article 8 — Repair of leakage

- (1) The operator shall ensure that the repair is carried out by personnel

certified to undertake that specific activity. Prior to repair, a pump-down or recovery shall be carried out, where necessary;

- (2) The operator shall ensure that a leakage test with Oxygen Free Nitrogen (OFN) or another suitable pressure testing and drying gas is carried out where necessary, followed by evacuation, recharge and leakage-test. Prior to pressure testing with Oxygen-Free Nitrogen (OFN) or another suitable pressure testing gas,

fluorinated greenhouse gases shall be recovered from the whole application where necessary;

- (3) The cause of the leakage shall be identified as far as possible, to avoid recurrence.

### Article 9 — Follow-up check

Certified personnel shall, when carrying out the follow-up check referred to in the second subparagraph of Article 3(2) of Regulation (EC) No 842/2006, focus on those areas where leakages have been found and repaired as well as on adjacent areas in cases



# *Symphony*<sup>™</sup>

## Air-Cooled Variable Speed Drive Screw Chillers

Super Efficient • Super Quiet

Cooling Capacity  
Range 540 - 1405 kW  
R134a



***Performance Matters...***

## F-Gas Regulations — Recent Important Developments

where stress has been applied during the repair.

### Article 10 — Requirements for newly commissioned equipment

Newly installed equipment shall be checked for leakage immediately after it has been put into service.

### Article 11 — Entry into force

This Regulation shall enter into force on the 20th day following that of its publication in the Official Journal of the European Union.

Also published in October 2007 was the latest version (dated

2007-10-05) of the Commission interpretation paper relating to the Regulation 842/2006, i.e., the F-Gas Regulations. Included in the content are the following:—

- (a) a detailed definition of the term "operator";
- (b) an explanation of the "operator/owner" relationship;
- (c) the specific circumstances under which an "owner" can devolve "operator responsibilities" to a third party;
- (d) identification of applications and calculation of their charge;

- (e) additional clarification on the prohibition from placing on the market of "non-refillable containers";
- (f) application of labelling obligations to containers;
- (g) application of containment and labelling obligations to refrigeration containing insulation foam blown with fluorinated greenhouse gases;
- (h) scope of the Regulation in relation to application containing less than 3kg (containment, recovery, training and certification);
- (i) issues related to the timescale for full

implementation of the Regulations

Again this document is available on the IRI website and is recommended reading for OEMs, distributors, contractors and end-users of refrigeration, air conditioning and heat pumps.

### Minimum qualifications and certification

According to IRI sources, the final version of the Commission Regulation on minimum qualifications and certification requirements will be available mid-November. We were told that, most probably, no further comments will be accepted at this point. According to the present schedule, the gas Regulatory Committee should meet in Brussels on 7 December to approve it. Thus we may expect its publication in the Official Journal in late December or early 2008.

Contact: Enda Hogan,  
Tel: 086 - 815 4769;  
email:  
refskill@eircom.net;  
www.institute of  
refrigerationireland.ie;  
www.figaroo.org





# Harmon Air Conditioning Services

## Cutting Edge ACM Chillers

ACM Kalte Klima is the leading Italian manufacturer of air cooled water chillers and air cooled condensing units which are distributed in Ireland by Harmon Air Conditioning. This cutting-edge range of equipment can be installed internally as a range of products come fitted with centrifugal fans so they can be ducted to the outside from inside the building. They incorporate innovative design features devised to ensure optimum performance, low energy usage and minimum CO2 impact. Brief details of the range are outlined below.



**SMAE R407c**

48kW - 325kW  
Cooling Capacity

49kW - 336kW  
Heating Capacity



**SCAE R407c**

43kW - 295kW  
Cooling Capacity

49kW - 332kW  
Heating Capacity



**SCAE R407c**

**Free Cooling**

46kW - 356kW  
Cooling Capacity



**LCAEX R134a**

380kW - 1513kW  
Cooling Capacity

430kW - 647kW  
Heating Capacity



**SCW-P R407c**

22kW - 352kW  
Cooling Capacity

23kW - 442kW  
Heating Capacity



**SCL-F R407c**

40kW - 340kW  
Cooling Capacity

These units require a remote condensor located externally and piped back to internal chiller.

**Harmon Air Conditioning Services**  
Unit No. 4, Long Mile Business Park, Long Mile Road, Dublin 12.



**Enquiries please contact:**

## chillers

## Carrier's Aquaforce Liquid Chiller



Carrier's Aquaforce range is the result of several years of extensive laboratory research and subsequent field testing aimed at producing an advanced air-cooled liquid chiller to meet current and future market requirements in respect of environmental issues and performance efficiencies.

Aquaforce is available in two versions — one offering superior energy efficiency coupled with extremely low noise levels, and the other catering for situations where stringent energy efficiency and reduced operating costs are the prime consideration. In all there are a total of 20 models to choose from, with outputs from 270kW through to 1700kW.

Aquaforce has a number of innovative features, such as the MCHX heat exchanger. Unlike conventional coils, this is made entirely of aluminium, the one-metal concept eliminating the galvanic currents that are

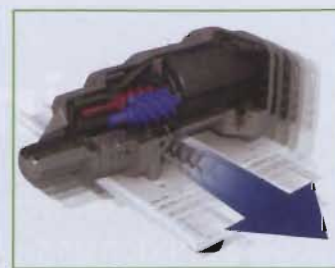
generated when different metals touch in conventional coils. Exhaustive comparative tests, including the salt mist and ammonium sulphate test, demonstrate that MCHX heat exchangers offer three and a half times higher corrosion-resistance than copper/aluminium coils. Also, because of its micro-channels, the MCHX heat exchanger ensures improved refrigerant circulation. It permits a 30% reduction in the refrigerant charge for the chiller, and increased performance.

Carrier has also developed the DX Free Cooling system for buildings that require year-round cooling, even in the coldest of regions. When the outside temperature falls below a threshold value the DX Free Cooling system kicks in to provide significant energy savings. The system uses the principle of natural migration of a gas from the evaporator to the condenser. A cooling-mode pump micro-pump ensures the continuity of the cycle and allows the compressors to switch off. Only the fans and the micro-pump

operate. With an average energy efficiency rating (EER) of 3.15, Aquaforce is at the top of the Eurovent energy efficiency classification — Class A. Full load operation is only required one percent of the machine operating time.

Extremely low noise levels of 94 dB(A) is another benefit. To achieve these results Aquaforce has reduced the noise levels of all components — fan, compressor and condenser. The fan is of the 4th generation Flying Bird type which is made of composite materials. Its aerodynamic shroud displaces the air without turbulence and generates a sound spectrum without irritating low-frequency peaks.

The screw compressor includes a discharge damper located inside the oil separator to absorb refrigerant pulsations. It is also equipped with flexible connections on the suction piping to prevent noise transmission. The compressors are enclosed by noise-absorbing casings to limit sound transmission further.



Installation and maintenance is also very user-friendly. Aquaforce can be installed simply and quickly, thanks to it being an integrated, hydronic, module. The complete system is pre-tested at the factory and arrives on site immediately operational. For maintenance the MCHX coils can be cleaned with a high-pressure water jet while the compressors are mounted on slide rails to facilitate easy on-site technical intervention.

The same user-friendly features apply to operator interface with Aquaforce. A large-format touch-screen gives easy access to all information and controls with clear texts presented on screen to access all operating parameters. Up to eight screens can be personalised.

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



## A Fresh Approach to Cooling

In partnership with Thermax, CESenergy now offers the latest eco friendly cooling solution - Absorption Chillers. By using existing heat instead of mechanical energy to provide cooling, an Absorption Chiller can substantially reduce your cooling and air conditioning costs.

Thermax Absorption Chillers are designed to utilize the heat from CHP units, existing heat from on-site process or can be directly gas fired thereby eliminating the need for electrical chillers.

The installation of an Absorption Chiller will:

- Reduce overall electrical costs
- Lower CO<sub>2</sub> emissions
- Reduce on-going operating costs
- Displace current electrical demand



Hot Water Driven Chiller



Multi-Energy Vapour Absorption Chiller



Steam Driven Chiller



**For more information contact:** Brendan Marren  
CESenergy, 1 Seapoint Building, Clontarf, Dublin 3  
t 353 1 853 0290 f 353 1 833 4182 e info@cesenergy.ie

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



## Real-World Energy Performance from York

York MaxE centrifugal chillers provide the best route to real-world energy performance, taking full account of the combined performance at all operating conditions, not just design. Because chillers in the real world operate nearly 99% of the time at off-design conditions, off-design performance is the major factor on energy consumption. That's why York's MaxE centrifugal chillers are engineered for maximum efficiency at both design and off-design conditions.

Versatility and flexibility is assured as MaxE chillers offer one of the broadest ranges of energy sources and compressor configurations in the industry. In addition to high-efficiency, electric-drive motors, the MaxE chiller line is also available with a natural gas engine driveline, while process or utility-supplied steam is another possible power source. A compound-compressor design that handles brine chilling, heat pump applications and other unusually demanding applications is also available.

MaxE centrifugal chillers are charged with HFC-134a refrigerant which has zero-depletion and no phase-out schedule. In addition, compatibility

with future refrigerants is assured because York uses an open-drive design that is proven to allow quick and economical changeovers to alternative refrigerants.

When these highly-efficient units are fitted with a York OptiSpeed variable speed drive they reduce energy-usage ratios still further to new lows of 0.40, 0.30 and even 0.20 kW/TR at off-design conditions. OptiSpeed incorporates advanced adaptive capacity control logic which continuously optimises chiller operation. It closely examines critical operating parameters and then determines the most efficient way to operate. It also allows for savings to be optimised using intelligent control strategies such as chilled-water reset.

Unlike some chillers which require entering-condensate-water-temperature (ECWT) from the cooling tower to be held artificially high, York MaxE centrifugal chillers can use lower ECWT. This lowers the compressor workload and leads to dramatic energy savings throughout the chiller's lifetime.

MaxE chillers also feature the OptiView control centre which



The York MaxE centrifugal chiller

uses microprocessor capabilities to provide additional energy savings. Operation at just 17°C below the design chilled-water-temperature setpoint can increase chiller energy consumption by as much as 3%, wasting thousands kilowatt-hours, and euros, each year. The digital precision of the OptiView control centre means that the chilled-water temperature can be set to a resolution of  $\pm 1.7^\circ\text{C}$ . As a result, the energy wasted by drifting a degree or more from setpoint is eliminated.

Despite the advanced and sophisticated nature of the microprocessor control centre, users still get code-free, plain-language data they are accustomed to getting from York. Thanks to a large, full-colour screen using active-matrix

display technology, it is even easier to read. More data is displayed on the screen with far less button-pushing required. This makes it much quicker and easier to operate the chiller.

A dedicated keypad for numerical input minimises keystroke errors. Cursor controls for screen navigation make it easy to access all input, control and monitoring functions while a special "navigation bar" quickly guides the user to the level of information required.

Contact: Dublin — Andrew McEvitt, York ACR.

Tel: 01 - 466 0177; email: andrew.mcevitt@jci.com;

Cork — Brenda O'Sullivan, York ACR.

Tel: 021 - 434 6580; email:

brenda.o'sullivan@jci.com

## CESEnergy Enters Partnership Agreement with Thermax

CESEnergy has entered a partnership agreement with Thermax, the pioneer of absorption cooling technology and leading global specialist in providing sustainable energy and environment solutions.

CESEnergy's expertise in engineering better energy solutions sees it continuing to lead the market in providing total energy savings for businesses in Ireland and

abroad. With the integration of the latest technology absorption chillers from Thermax — with capacities ranging from 70kW to 7000kW — it can now deliver the most reliable eco-friendly solution across all business sectors.

Thermax absorption chillers are designed to utilise the heat from CHP units, existing heat from on-site process, or can be directly gas-fired, thereby eliminating the

need for electrical chillers.

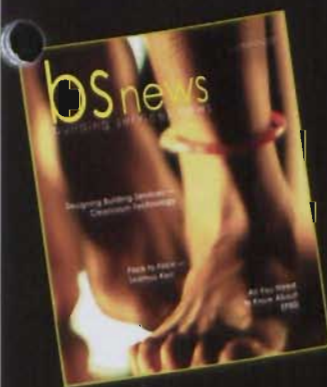
CESEnergy is an Irish-owned company with a proven track record in the successful design, implementation and management of combined heat and power (CHP), tri-generation and district heating and cooling solutions. It provides a complete turnkey solution, from the design stage through to commissioning, which is carried out by its own

team of experienced in-house engineers.

Ultimately, CESEnergy's primary objective is to devise better energy solutions giving substantial financial savings and reducing CO<sub>2</sub> emissions.

Contact : Brendan Marren, General Manager, CESEnergy.  
Tel: 01 - 853 0290;  
email: info@cesenergy.ie;  
www.cesenergy.ie

brochures  
price lists  
catalogues  
leaflets



Need a company brochure, product catalogue or price list? Pressline Ltd can devise an effective, tailor-made solution to achieve that goal.

As a bs news reader you are already familiar with the quality, style and professionalism of Pressline Ltd, who publish the magazine.

Now you can avail of these services when preparing your sales brochure, product catalogue, price list or product information leaflets.

**Pressline Ltd**  
Carrig Court, George's Avenue  
Blackrock, Co Dublin  
Tel: 01 - 288 5001 Fax: 01 - 288 6966

Contact: [pat@pressline.ie](mailto:pat@pressline.ie)  
Visit: [www.pressline.ie](http://www.pressline.ie)

# Meet F-Gas Regulations The Smart Way!

F-Gas Regulations compliance is a key priority for all involved in the refrigeration sector.

While the general content of the new regulations is generally well known and understood by all, the critical issue now is the availability of programmes and services which will allow the industry meet its obligations in respect of the regulations.

The regulations cover all matters relating to refrigeration, one of the most important and contentious being the safe disposal of reclaimed gases. Up to recently there was no one in Ireland licensed to carry out this task but now Gasco — in association with Smart Waste Solutions, its environmental services provider — has solved the problem.

Smart Waste Solutions specialises in the provision of environmental technology services. It is fully licensed by the relevant authorities to collect and transport refrigerant gas cylinders, and to oversee their shipment abroad for disposal by accredited agencies. As the officially-appointed service provider to Gasco, it now offers this service to Gasco clients.

"This is a major breakthrough in relation to F-Gas Regulations compliance", says Mark Kiely, Managing Director, Gasco, "and something which is long overdue. As everyone knows, there are significant amounts of reclaimed gas in cylinders stockpiled at various locations throughout the country. Up to now there has been no

legitimate way of disposing of it and so it has been put in storage.

"However, now that we have appointed Smart Waste Solutions our specialist service provider, we can address this problem. While we at Gasco manage the provision of the service, it is Smart Waste Solutions which actually delivers it. It is the only one licensed to handle the cylinders containing the reclaimed gases and it carries out the entire procedure on our behalf. The service is available nationwide and is delivered using a licensed waste transfer station.

"We only offer this service to Gasco clients at present. Our cylinders are clearly identified by the distinctive yellow colour which most people in the industry are familiar with. Because of the unique serial number on each cylinder, they can be tracked from a to z.

"Smart Waste Solutions is not new to the refrigeration sector. For some time now it has been the leading provider of disposal services for the hardware side of the business, renowned as an expert in the safe de-commissioning and removal of refrigeration display cabinets, air conditioning units and related equipment. It has a thorough knowledge and understanding of the refrigeration sector and enjoys a positive standing with all the relevant regulatory and licensing authorities.

"Managing Director Francis Corr sits on various committees and advisory panels and is available to conduct audits and surveys. Indeed, all our

clients receive a specially-prepared Environmental Pack on F-Gas Regulation when Smart Waste Solutions are acting on our behalf.

Furthermore, all the necessary paperwork — including Waste Removal Notes and Disposal Certificates — is handled by Smart Waste Solutions."

This new service from Gasco complements the already-extensive range of products and services it supplies to the refrigeration sector, particularly the gas recovery machines, manifolds and tools from the Yellow Jacket range.

"Thanks to this new arrangement with Smart Waste Solutions", concludes Kiely, "Gasco now provides a comprehensive refrigeration service incorporating not just refrigeration components, accessories, gases and ancillary products, but also the means to ensure F-Gas Regulations compliance."

Contact: Mark Kiely, Gasco.  
Tel: 01 - 462 7311;  
email: gidublin@gasco.eu



Mark Kiely, Managing Director, Gasco looks on as Neil Stewart, Ritchie Yellow Jackets, shows Colin O'Connor, Artic Air, one of the latest electronic manifold from the range

# Sanyo Airconditioners Europe Appoints New President

conditioning project. As President, Mr Morisaki has made a huge contribution to SAE's spectacular growth, which has far surpassed the industry average, making Sanyo one of the leading air conditioning suppliers in Europe.

"Notably, during this time both the Italian and Spanish branches turned from distributor to direct sales businesses and new branches of Sanyo Airconditioners were set up across Europe, including Ireland, France, UK, Greece, Hungary and Scandinavia. In addition to this, Mr Morisaki oversaw the establishment of Sanyo's European Technical Centre in Munich.

"The new Budapest facility came on stream earlier this year. Standing next to an existing Sanyo plant which already produces the advanced HIT solar cells, it will continue to manufacture indoor units from Sanyo's ECOi and PACi ranges including wall, cassette and ducted units. It will provide customers in the region with an even faster supply and delivery service, as well as improved stock availability.

"After a long and successful career at Sanyo Mr Morisaki has now reached retirement age. We will miss his energy and enthusiasm and wish him well in his retirement. I am very excited about the future and am delighted to take on the mantle of our operations throughout Europe."

Mr Yoda has over 15 years experience working in Europe, including his position as Executive General Manager for Sanyo's European business headquarters. As President Mr Yoda has a clear mission to make Sanyo the leading provider of energy-

efficient, environmental solutions and is committed to further expand the company's air conditioning business in Europe. Mr Yoda continued: "I am thrilled to have been appointed to such a pivotal role within Sanyo. Air conditioning and refrigeration is one of Sanyo's three core businesses while Europe remains the most important region for the growth of the air conditioning business. This division therefore has a key role to play in the company's strategic global plans over the next few years.

"This year has already been a very busy year for us with the opening of our new European manufacturing facility in Budapest in April, and the launch of exciting ground-breaking products such as CO<sub>2</sub> water heaters, the Virus Washer and solar PV air conditioning. All these products are in line with the 'Think GAIA — for earth and its people' environmental philosophy which Sanyo has based its whole corporate ethos on.

"Under this vision Sanyo is committed to using its global resources and skills to develop solutions for a sustainable coexistence on earth, resulting in the development of environment-friendly products. There are many more efficiency-driven products to be launched in 2008 — including the world's first cogeneration gas heat pump. As President I am committed to progressing this environmental focus and innovation to ensure that Sanyo becomes the leading provider of energy-efficient and environmental solutions."

Contact: Dave Colbert, Sanyo Airconditioners.  
Tel: 01 - 403 9900;  
email: davidcolbert@sanyoaircon.com



Mr Yoda, President, Sanyo Airconditioners Europe

**S**anyo Airconditioners Europe has appointed Mr Yoda President following the recent retirement of his predecessor, Mr Morisaki. Formerly Executive Vice-President, Mr Yoda officially took up the role on 1 October and the intention is for Mr Morisaki to remain on as a senior sales and marketing advisor until mid-2008.

As we went to press Mr Yoda told *bs news*: "Mr Morisaki has served 38 years at Sanyo, mostly in Europe and Africa. From 1998-2002 he was President of Sanyo Airconditioners Europe (SAE) and then returned as a President of SAE in 2004 in order to follow through a corporate air

# face to face

JAMES MURRAY



**A**s consultation on the new regulation of domestic gas installers continues, James Murray, Area Operations Manager from CORGI, explains his involvement in the process and what he feels will be the biggest challenges in introducing the new regulation.

CORGI operates the mandatory gas registration schemes in England, Wales, Scotland, Northern Ireland, Isle of Man and Guernsey, along with the voluntary scheme in Jersey. Currently there are over 120,000 installers registered.

James is responsible for Northern Ireland, Isle of Man and the Channel Islands and spends some of his time travelling all over Ireland, talking to installers who work across the border. Before joining CORGI, James worked for Calor Gas Northern Ireland for 12 years and a few independent installers prior to that. He has been with CORGI since 1995.

James' time is spent in the day-to-day running of CORGI's operations outside of Great Britain. This means dealing with all aspects of the gas industry, from installers to suppliers and governing bodies. "We tend to take the approach of regulating by support, guidance and information", says James. "We have learned the carrot approach is far more effective than the stick. By working closely with the registered businesses we can get to know the issues they are facing on a day-to-day basis."

Since the announcement of the new gas regulations to be introduced in Ireland, James has been invited to work with CER during the consultation stage as it develops the criteria for the new registration scheme. Other key stakeholders have also been involved such as installers, training providers and assessment bodies, along with NSAI and Bord Gáis.

James is an obvious choice to work with CER given the scope and depth of his experience. He is also in a position to share the lessons learned by CORGI as it has been operating a scheme for the past 15 years. "We have had good working relationships with all parts of the gas industry in Ireland for many years now, and have been keeping a close eye on how legislation has been developing", says James.

The new mandatory scheme will undoubtedly have an impact on the CORGI-registered installers based in Northern Ireland, particularly those who work across the border. James is currently considering how mutual recognition of competencies would work, but there is still much to be decided before it is clear exactly what the impact will be.

Recently James was invited to speak with members of the Installer Review Panel (IRP). The panel, which is also involved in the consultation process currently being undertaken by CER, was keen to understand some of the principles that CORGI uses to operate the registration scheme in the UK.

JAMES MURRAY

"We have had good working relationships with all parts of the gas industry in Ireland for many years now, and have been keeping a close eye on how legislation has been developing."



James Murray

James says: "I'm always happy to speak with people who have questions about how gas safety is managed — we at CORGI have an open door policy where safety is concerned."

Obviously CORGI also has an interest in the introduction of the new scheme in terms of bidding to operate it. Having spoken to many installers, James is aware of some speculation about whether or not CORGI will be one of the contenders bidding to operate the scheme.

"At this stage it is too early to say whether or not CORGI will be bidding to operate the scheme as there are still some key decisions to be made by CER about how the scheme will operate. We will have a clearer idea about what the scheme provider would be required to do at the end of this year when the criteria document is published. What is clear to us though is that the new scheme will require effort from all areas of the industry to get it off the ground and it won't happen overnight."

The regulation of domestic gas installers is intended to improve gas safety in Ireland and help protect consumers. However, understandably, many installers will be anxious about the changes being introduced and the impact it will have on them and their businesses. Having seen the safety benefits of regulation in Northern Ireland, James

feels that it is a positive move forward for the gas industry in Ireland.

That said, he is realistic about the challenges facing the new regime. "In the UK and Northern Ireland, one of the biggest challenges we face is eliminating those installers who choose to work on gas without being qualified or registered. These people undermine safety and put lives at risk. One of the ways we have tried to tackle this in the UK is to encourage installers to take responsibility for their own industry and to work together to make sure these illegal workers are forced out of the market. I would say to any installer, this is your industry and the only way to eliminate these people is to make the appropriate authorities aware of their existence."

In the UK CORGI recently set up a team of inspectors specifically focused on tracking down non-registered installers. They are currently holding events around the country talking directly to non-registered installers to find out why they choose not to register, and working with them to get them working legally.

James also says that it is important for installers to promote themselves and their registered status to their customers. Once installers begin to see the benefits of being recognised as professional trades people, their customers will too.

# Worcester Bosch Links up with METAC

**L**eading boiler manufacturer Worcester (part of the Bosch Group) has further improved its links with installers in Ireland with the opening of the METAC (Midland Energy Training and Assessment Centre). Located at Unit 3, Mountrath Enterprise Park, Portlaoise Road, Mountrath, Co Laois, it was set up by Dominic Dunne and is managed by Aidan Lawless.

The training centre was officially opened earlier this year by Noel Dempsey, the former Minister for the Environment and Natural Resources, and is now fully up and running for heating installers to book training courses.

The centre offers a wide selection of Worcester courses for installers to choose from, including courses on all Greenstar natural gas and LPG boilers and Greenskies solar thermal packages. The centre also offers oil-fired boiler and heat pump training, along with many other related courses. Worcester has provided the centre with seven high-efficiency Greenstar condensing boilers and Greenskies solar panels for teaching hands-on

installation techniques and fault finding.

Alex Thomas, Technical Sales Manager for Worcester Bosch Group in Ireland, said: "The opening of METAC Mountrath has already been a huge plus for Worcester and the industry, aiding our support to heating installers. We are going through changing times with concern for energy efficiency, fossil fuel consumption and climate change at an all time high in Ireland. Worcester only promotes SEDBUK 'A' rated gas and oil boilers in Ireland, which is assisting the Government by reducing carbon emissions. METAC has a fantastic central location and the facility is well suited to providing first-class training. "Environmental issues and sustainability are more prominent than ever since the Green Party took partial Government in Ireland. Worcester is highly dedicated to the reduction of harmful

carbon emissions through various initiatives and governing bodies. Its commitment to manufacturing energy-efficient and renewable heating solutions means that installers are very keen to train using our products and this facility will make that much easier for them."

The METAC training facility is part of an £3 million investment (Ireland and UK) for Worcester in training this year, which has also seen the company's facilities at the Worcester headquarters in the UK upgraded to a "training village". Having trained over 12,000 people in 2006, Worcester has set a target to increase that figure to 14,000 this year.

Contact: [www.worcester-bosch.ie](http://www.worcester-bosch.ie);  
Aidan Lawless, METAC,  
Tel: 057 - 875 6540;  
email [info@metac.ie](mailto:info@metac.ie);  
[www.metac.ie](http://www.metac.ie).



Alex Thomas, Technical Sales Manager, Worcester Bosch with Dominic Dunne (who established METAC) and Aidan Lawless, Manager, METAC

# Leading Light Who Won't Fade Away!



Ivan Hammond showing Paul Byrne of Enlighten one of the massive 10kW lamps used to light Croke Park in 1966 for the 50th anniversary celebrations marking the 1916 Easter Rising

When it comes to electrical contracting — and lighting in particular — Ivan Hammond is widely regarded as one of Ireland's foremost experts. For almost 40 years at the helm of Breen Electrical he pioneered the use of innovative lighting technology, designing and installing bespoke lighting solutions for all manner of applications.

Ivan is an engineer by profession but he first entered electrical contracting when he joined Breen Electrical in 1967, a company established by his late father-in-law, AK Breen, in 1936. Ivan initially joined the firm as a temporary arrangement but ended up running the business for almost 40 years before selling it to Lynch & Co two years ago.

Back in 1936 Breen Electrical was one of a dozen leading electrical contractors — known as the 12 apostles! — in Ireland with AK himself recognised as the foremost authority when it came to lighting. At a time when festive seasonal lighting was in its infancy, Breen Electrical was responsible for all the major

outdoor street displays in Dublin, AK designing and sourcing unique presentations which were always at the cutting-edge of the business. Over the years the company also worked extensively on the famous illuminations in Blackpool in the UK.

Ivan took on the mantle on assuming control of the business and he too became synonymous with innovative lighting solutions. As the years progressed these displays became far more sophisticated with tungsten halogen lamps coming to the fore in the early 1970s before they were superseded by high-power sodium units which are now, in turn, being replaced by LEDs.

In the early days outdoor festive displays were limited to major holiday periods, especially Christmas. However, there was the odd historical occasion over the years which deserved, and was given, special recognition. The 1916 Easter Rising 50th anniversary in 1966 was a case in point. A great deal of the festivities centered in Croke Park and

Ivan was commissioned to handle the specialist lighting requirements for the occasion. Part of the brief called for temporary floodlighting and, to achieve the desired solution, Ivan and his Breen Electrical colleagues employed a battery of Philips 10kW lamps. By today's standards these were massive units and, as our picture shows, dwarf the modern-day equivalent.

As time went on and Ireland became more prosperous, lighting of public buildings, churches and places of historical interest became more commonplace. Once again Ivan was very much to the fore, his design expertise and contracting experience being sought out by leading architects, city councils and local authorities throughout the entire country.

For many of these commissions he worked very closely with Fantasy Lights which in turn is now a pioneering force in decorative and festive lighting solutions. Its sister company, Enlighten, provides professional LED and architectural lighting solutions and has, to date, been responsible for many prestigious projects such as Dáil Éireann and Áras an Uachtaráin.

Apart from developing his own business, Ivan has also contributed enormously to the industry as a whole. He has played an active role in quite a number of industry representative bodies — both in Ireland and internationally — participating at executive and officer level, and serving as Chairman. As we went to press he had just stepped down as a long-serving Director of RECI. While he intends to curtail his involvement in the industry, he has no intention of fully retiring. Thankfully, we can expect regular contributions from him on key issues relating to electrical contracting, and lighting in particular, well into the future.

This leading light just won't fade away!





Mr Paul Falvey, Axis Engineering  
Tel: 01 - 491 0044  
email: pfalvey@axiseng.ie

## The Harsh Reality of Trying to Specify LEDs

**I**n last month's article in *bs news* I referred to a number of technical issues that should be explored by anyone considering the use of LEDs in commercial lighting applications. There are many articles published by National and European suppliers of LED luminaires but I thought that a review of my personal experience on the application of LED solutions to a number of recent projects would inform other designers and installers of the challenges they will face, and perhaps prompt a response from LED manufacturers and suppliers. The comments and views expressed below are not the result of exhaustive research but reflect the level of enquiry that we normally apply to a project element.

As a project engineer with Axis Engineering I am obliged to protect my clients interests by ensuring that all equipment specified for use on our projects complies with certain fundamental conditions. These conditions are set out here, together with a review of how LEDs met these conditions.

**Standardisation and quality**  
All equipment specified by us

must comply with an Irish or European Standard and have the CE mark. Currently there are no international standards for the manufacture or performance of LED luminaires. Some of the predominant luminaire manufacturers invest heavily in LED R&D and select LEDs from very reputable manufacturers. Nonetheless, a very significant portion of the LEDs presented to the Irish market are sourced in the Far East and the quality of the product is determined by an invasive examination of the product by Irish agents, supported by visits to the manufacturing process. Specifiers are therefore reliant on the word of such suppliers in relation to the quality of the product.

### Performance

We carry out independent lighting calculations for luminaires specified by us, using software such as Dialux, and most luminaire manufacturers provide sufficient information on their luminaires to allow us to carry out these calculations. While LED manufacturers will publish the lumen output for particular LED arrays in spotlight type luminaires, we were unable to source a manufacturer who would, or could, publish sufficient technical information on their fittings to allow us to perform independent lighting calculations. Again we are reliant on word of

suppliers in relation to the prospective lighting levels that will be achieved.

### Value for money

We usually invite a number of firms to submit quotations for multiple repetitive devices such as luminaires, based on the particular project criteria, to ensure that we specify the most economic solutions available. In the case of LEDs we found it very difficult to establish a common technical document that would allow a number of suppliers to quote on a "like for like" basis.

Until we can rely on compliance with international standards for assurance on quality, carry out independent calculations on the lighting levels achieved by LED luminaires, and compare the value of alternative comparable products, we will be obliged to restrict the use of LEDs to special project applications where their current proven attributes such as long life, low power consumption, low heat of lit objects and flexibility are of more importance than the issues discussed above.

One of our recent special project applications was the illumination of a number of meeting rooms. We were advised that the rooms would be occupied for long periods of time and that intense negotiations would take place in

# enlighten™ Professional LED & Architectural Lighting Solutions

With lighting accounting for an incredible 20% of national electricity use, more and more specifiers and clients are turning to Enlighten to solve their lighting requirements. Enlighten takes a holistic view of every application and devises the most appropriate, cost effective, bespoke solutions.

Enlighten provides engineering-led, professional LED and architectural lighting solutions across all industry sectors, including:—

- In-store retail display
- Exterior signage
- Safety lighting
- Promotional/advertising displays
- Fountain displays
- Art gallery displays
- Showcase lighting of corporate premises, public buildings, and national monuments



In addition to light performance functions, Enlighten considers and analyses critical issues such as:—

- Energy usage
- Regulation compliance
- Environmental impact
- Life-cycle costs
- Heat gain
- Health and safety

As engineering-based service providers Enlighten provides site surveys, problem analyses, system design and installation guidance.

It carries a comprehensive range of specialist LED fittings and fixtures from leading international suppliers, but also provides customised fittings and fixtures which it designs specifically — and manufactures — to suit each particular application.

# enlighten™

Professional LED & Architectural Lighting Solutions

*Enlighten is a Fantasy Lights Company*

Published by ARROW@TU Dublin, 2007

Mulcahy Keane Estate,  
Greenhills Road,  
Walkinstown, Dublin 12.  
t: 01 - 460 1052  
f: 01 - 460 1054  
e: sales@enlighten.ie  
w: www.enlighten.ie



Mr Kevin O'Connell,  
School of Control Systems  
and Electrical Engineering,  
DIT Kevin Street.

email: kevin.oconnell@dit.ie



## System Earthing & Equipotential Bonding

The application of earthing principles in low voltage (<600V) installations was discussed in the previous two articles. Weaknesses that are inherent in systems were pointed out and also the measures taken to minimise the ensuing risks. This article looks outside the consumer's installation at system earthing and also examines the need for equipotential bonding within the installation.

### System Earthing

Figure 1 depicts a simplified rural distribution system that includes ESB 10,000V and 230V overhead lines. In this situation the ESB three-phase 10kV line supplies a transformer which in turn supplies a two-phase 230V line connected to a domestic or

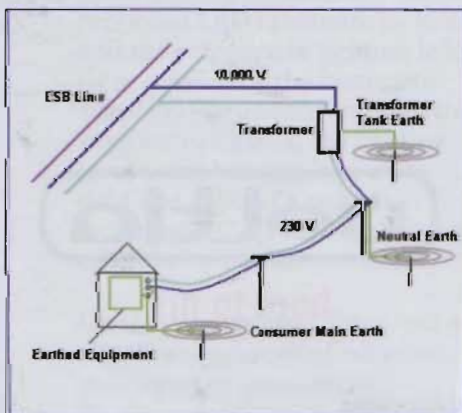


Figure 1 — Figure 1 depicts a simplified rural distribution system that includes ESB 10,000V and 230V overhead lines



Figure 2 — The Faraday Cage Experiment. (Image courtesy of Tesladownunder.com)

small business building. The neutral earth connects one of the low-voltage phases to earth and this defines this phase as the neutral conductor. One should always be mindful of the fact that the neutral conductor has full phase status and, under certain fault conditions, may rise above earth potential and cause an electric shock. Should the tank of the transformer become connected to 10kV due to a transformer fault or storm damage, there is a risk that this very dangerous voltage may be conveyed through the neutral to the earthed

equipment in the building. To reduce this risk there must be physical separation between the transformer tank earth and the neutral earth (see **Figure 1**).

If this scenario is not bad enough, then consider what would happen if a lightning strike occurred on the overhead line? The lightning surge would be conveyed through the neutral conductor on to the consumer's main earth terminal and, from there, to every earthed piece of equipment in the building, including

## System Earthing & Equipotential Bonding

baths, showers, etc. This time the voltage concerned may exceed 100,000V!

### The Faraday Cage

Before one despairs and stops using the bath or shower enter Michael Faraday! (1791-1867). Described by some as the "father of electricity", Faraday discovered that if you are surrounded completely by conducting material, then you would not be adversely affected if the conducting material reached a high voltage. This phenomenon may be demonstrated experimentally using the Faraday Cage. From an electrical safety point of view, the objective is to avoid being part of a conducting path. The effectiveness of this strategy is demonstrated daily by birds that alight on high voltage electricity lines without suffering any ill effects.

### Equipotential Bonding

Equipotential bonding is introduced in a building to create an effective Faraday Cage. This is achieved by connecting all conducting material together with bonding conductors. Equipotential zones are created in bathrooms, kitchen/utility rooms, milking parlours, areas where assembly of electronic components is carried out, etc. All occupants should now be safe if the earthed equipment in a building should reach a very high potential due to a lightning strike or high voltage equipment fault.

As an additional safety measure, all

services such as water, gas, heating pipes plus structural steel etc are made to form part of the equipotential system by bonding them together at point of entry to the building. The equipotential bonding system is then connected to the consumer's earth terminal.

One of the problems relating to equipotential bonding encountered in practice is the high fault currents that can sometimes flow for prolonged periods under fault conditions. It is therefore necessary to carry out an assessment on an installation to ensure that equipotential bonding conductors are of adequate size to withstand the fault currents without overheating. The size of these bonding cables is related to the size of the service cables. A minimum size limitation also applies.

It is the job of the professional to be always aware of what can go wrong. As can be seen by this series of articles, there is indeed a lot that can go wrong and this is not an area that unqualified or inexperienced people should enter. A lot of thought and the accumulated experience of many years has gone into providing the best possible protection for users of electricity. Once systems are installed, however, they should be checked on a regular basis to ensure that they continue to provide the safest working/living environment possible.

## Find that Product ... Fast!

### bs news Building Services Product Specification Guide

contains 6000 cross-referenced, index-linked, product entries across 400 primary and sub-category headings, along with 8000 individual contacts including company names, telephone numbers, fax numbers, email and web addresses.

As such it is the definitive "who represents whom?" of the industry and the primary point of reference when specifying and sourcing virtually any building services-related product. It is available in both printed and online versions.

### online

To access the online version simply log on to [www.bsnewsbuyerguide.com](http://www.bsnewsbuyerguide.com) and register as a user.

### printed version

Because of requests for extra **Buyer Guides** we have done an additional print-run and copies are now available at a specially-reduced rate of €50.

Please send cheques — made payable to Pressline Ltd — to Pressline Ltd, Carraig Court, George's Avenue, Blackrock, Co Dublin.

# Plumb Lines

heard it on the grapevine ...



## MARTY SURPRISE FOR JIM!

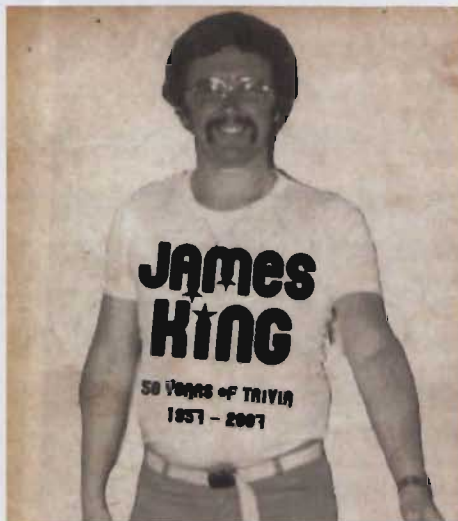
Jim King celebrated a major birthday milestone recently with family and friends throwing a huge bash at which Marty Whelan made a this-is-your-life type presentation. The venue was adorned (if that is the correct word!) with large-scale photo montages of Jim in various poses down through the years.

There was also a special publication to mark the occasion which cleverly linked major world events with an event in Jim's life for each of the years 1957 through to 2007. Congratulations Jim!

### BRIAN McTERNAN RETIRES

Brian McTernan of Heat Merchants (Wolsey Group) retired last month having served both the company — and the industry at large — with distinction for many years.

He was one of a handful of Heat Merchants directors back in the early days and was instrumental in the



development of the Group into a large-scale operation, even before the Wolsey take-over.

Since then he continued to play a pivotal role in the company's expansion, contributing enormously to its growth, development and success.

Enjoy your retirement Brian.

### LIGHTS OUT BY 2012 IN THE UK!

Following a Government agreement reached earlier this month UK retailers will phase out the sale of traditional light bulbs by the year 2012. This is a voluntary agreement and one which critics say does not go far enough. For instance, Australia has banned conventional bulbs from 2009.

However, individual retailers in the UK are acting on the spirit of the initiative. Currys intends to stop selling traditional light bulbs by the end of this year; Habitat by 2009; Woolworths, the Co-op, Asda, Morrison's and Sainsbury's by 2010; and Tesco by 2011. Suppliers and retailers in Ireland take note!

### APOLOGIES COLIN

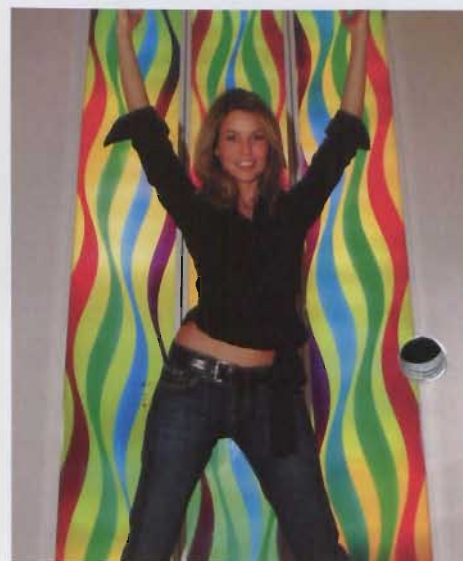
My sincerest apologies to Colin Murphy of Varmings ... yes Varmings!!!

Unfortunately, in last month's *Plumb Lines* I referred to him as still working with one of his former employers.

*Mea Culpa* Colin. Unfortunately, as the years progress the old grey cells sometimes behave like ... old grey cells!

### LIGHT+BUILDING — IS THIS FOR REAL?

Light+Building (Frankfurt, 6 to 11 April 2008) is the foremost international trade fair for the industry. It invariably features trends and products which are at the cutting edge of technology and is well worth a visit.



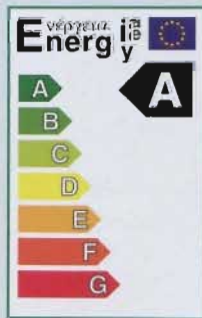
However, be warned. According to a recent press release from the organisers, what you can expect to see next Spring in Frankfurt are products which "call for the cross-over and combination of disciplines, as well as more precise concepts, and which contain a plethora of emotional references and symbolism."

I suggest a visit to your therapist before trying to assess what will be on show!

# Best in energy saving.



1



2



3

*Wilo-Stratos ECO high-efficiency pump.*

„Stiftung Warentest“ is the internationally recognised, independent German institute responsible for testing products and services under the premise of absolute neutrality. It recently tested a total of nine heating pumps. The result: a definitive „very good“ for the Wilo-Stratos ECO. With a grade of 1.3 for energy efficiency, it is in fact the test winner, and that with a 23 % lower energy consumption than the runner-up. Impressive? We call that Pumpen Intelligenz.

# Fit & Forget Instruments & Controls

Manotherm Ltd provides a broad range of precision instruments for measuring, transmitting and controlling pressure, temperature, level and flow. In addition to providing quality precision instruments, Manotherm is committed to exceptional customer service, including knowledgeable, courteous technical support that generates and maintains long-term relations.



Flow  
Level  
Sanitary  
Pressure  
Calibration  
Environment  
Signal Isolators  
Leak Detection  
Temperature/RH  
Valves & Steam Traps  
Data Loggers & Recorders



The Controls Centre,  
4 Walkinstown Road, Dublin 12.

Tel: 01 - 452 2355/452 2229

Fax: 01 - 451 6919

<https://arrow.tudublin.ie/bsn/vol46/iss10/1>

email: [info@manotherm.ie](mailto:info@manotherm.ie)

web: [www.manotherm.ie](http://www.manotherm.ie)