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### BS News

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# bs news

building services news

Building Regulations Part L  
Will they really solve energy  
usage & CO<sub>2</sub> issues?

PHEX 2008

Electrical Services Engineering

Domestic Boilers



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opinion

## Part L — Keep the Head Down & Get on With It!

While there is a great deal of debate, and even concern, about some elements of Part L of the new Building Regulations 2007, the vast majority of the building services sector — be it consultants, contractors or product suppliers — welcome and support the intention behind them.

The revised Regulations cover new and existing dwellings and deal with the entire building envelope. Everything from thermal conductivity and transference through to renewable technologies, the building fabric, and building services is affected.

Obviously, *bs news* is most concerned with the latter, and especially so this month as the main product feature is domestic boilers. Part L has particular significance for those involved with domestic boilers, not least because of the 31 March 2008 implementation date.

If rigorously applied, this has huge implications for boiler suppliers, system designers, installers and even developers. Such a short lead-time is unrealistic and, quite frankly, unworkable. That said, this cut-off date is not something to get too hung up on. Based on past experience, it is highly unlikely that prosecutions will be brought in the short-term in respect of non-compliance.

Those affected by Part L should proceed by embracing the spirit and intention of the changes while, at the same time, making pragmatic decisions about work in progress and product held in stock. With such an approach the problem will resolve itself sooner rather than later.

See also page 34 for the full extract on Building Services from the Government's Part L Technical Guidance Document.

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## trade news + product information

### minister unveils tesco's first chp facility

Tesco Ireland's first CHP installation, located at the Tesco Nutgrove site in Dublin, was recently opened by Eamonn Ryan, TD, Minister for Communications, Energy & Natural Resources. This CHP plant produces approximately 90% of the site's electrical and thermal demand during the winter operating months, and modulates its output according to the site's heating and electricity requirements.

The plant is rated at 334kW maximum electrical output and 497kW maximum thermal output. Heat is produced in the form of low pressure hot water, piped directly to the site's main headers and a synchronized electricity supply is supplied to the site switchgear.

The CHP plant was supplied, installed and commissioned by F4energy and delivers a 20% annual energy cost saving to the Nutgrove site. By obtaining overall efficiency in excess of 80%, this on-site production of heat and power is more than twice as efficient as the national grid's electricity production, resulting in a reduction in Tesco Nutgrove's carbon footprint of approximately 650 tonnes of CO<sub>2</sub> per annum.

Under the government's CHP Grants Scheme companies like Tesco receive 30% grant aid to help fund CHP investment costs, a factor which significantly shortens the project payback period.



At Tesco Ireland's Combined Heat and Power Facility are Michael Mc Nemy, Energy Manager, Tesco Ireland with Aidan McDonnell, Business Manager, F4energy; and Minister Eamon Ryan, Department of Communications, Energy and Natural Resources.

### racgs to visit top courses

The RACGS has announced an exciting programme of outings for 2008 which will take in some of the premier courses in the country. This includes the PGA National in Palmerstown House on Friday, 28 March, which will be sponsored by Danfoss Ireland.

The full list of outings, including venues and dates, is as follows:—

- PGA National, Friday 28 March, Sponsor Danfoss Ireland;
- Carlow Golf Club Thursday 24th April-Sponsor MSS Building Services;
- Fota Island in Cork Friday 30th May-Sponsor *bs news*/Pressline;
- Hermitage Golf Club Lucan(Presidents Prize) Thursday 26th June-Refrigeration Skillnets;
- Ryder Cup RACGS IRE v RACGS UK 14th-15th August Blackpool UK-Sponsor Sauermann;
- RACGS v BTU Baltray Golf Club Thursday 11th September-Sponsor BOC;
- Dungarvan Golf Club(Captain Day) Friday 19th September-Sponsor TBC;
- European GC Brittas Bay Wicklow Friday 7th November. Sponsor TBC.

Contact: Mark Kiely. Tel: 086 - 850 8482; email: mark@racgs.com; www.racgs.com

### irish projects to feature in st gobain international final

Three building projects — Today FM Studio, Dublin; Carton House, Co Kildare; and Limerick County Council Offices — have been selected to represent Ireland in the Saint Gobain Gypsum International Trophy, which will be held in Belgium in June 2008.

The aim of the awards is to promote craftsmanship skills in the areas of traditional plastering and modern plasterboard systems and to reward work which shows originality and an optimal level of performance.

In order to meet the high levels of sound performance required between adjacent studios at its new building, Today FM's acoustic advisors developed a "triple wall" to run between adjacent studios. These triple walls contain 12 layers of Gyproc Plasterboard, which are all different types and thicknesses.

In this project, the innovative use of Gypsum Industries' products to form unique custom-built systems allowed the client's requirements to be met, while still providing a reasonably lightweight solution.







## The Commercial Split System that everyone's talking about.

No wonder everyone's talking about SANYO's Commercial Split Range, with its propriety DC inverter technology and non-ozone depleting R410A refrigerant vastly reducing life cycle running costs. Renowned for reliability, our flexible indoor range offers solutions from 5.5 kW to 28 kW.

Up to four indoor units of different types can be operated with just one outdoor unit, greatly reducing installation costs. With consistent control across the range and full BMS integration, it's time to speak to SANYO.

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### COMMERCIAL SPLIT SYSTEMS

GAS DRIVEN VRF

ELECTRIC VRF

ROOM AIR CONDITIONERS





## trade news + product information

### SLL under lights at Croke Park

In his capacity as the Society of Light & Lighting (SLL) representative for CIBSE, Kevin Kelly of DIT is currently organising a series of seminars for the coming 12 months. The first event has already been confirmed and will take place on Thursday, 10 April next, at 6.30pm in DIT Kevin St. The topic will be the specialist lighting requirements of football stadia.



The opening address will be given by Mark Reilly, the Young Lighter winner in London in 2007 and a graduate of the Electrical Services Engineering Programme in Kevin Street. He also has a Diploma in Light & Lighting from the South Bank University in London and currently works as a design engineer with Arup Consulting Engineers. He will present his award-winning paper on the theories behind stadia floodlighting.

He will be followed by Huu Chi Tran, the world-leading lighting designer and academic based in Paris who designed the lighting scheme of Croke Park for Thorn Lighting. Other projects he was involved with include the Super Bowl XLI in Miami; Wembley Stadium; the world's largest lit golf course in Shenzhen, China; and the Telstra Stadium in Sydney.

As is customary, the evening will conclude with a "questions and answers" session chaired by Kevin Kelly.

### contract service from Terry's Bathrooms (Cork)

For the past 10 years Terry's Bathrooms of Cork has specialised in the supply of top-end products to the domestic and commercial market in Munster. Now it has extended this service to provide nationwide coverage aimed at the supply of quality German brands for large-scale developments in the public and private sector.

The prestigious brands of sanitary ware, baths and shower trays, showers and brassware, accessories and cabinets on offer include — Villeroy & Boch, Duravit, Laufen, Alape, Kaldewei, Betty, Dornbracht, Grohe, Handgrohe, Vola, Geberit, Schneider and Keuco.

Contact: [www.terrys.ie](http://www.terrys.ie)

### btu 2008 officers & programme

The BTU annual general meeting took place at Morans Red Cow Hotel in Dublin on 26 February last.

The incoming Captain Michael Kearney presided over an eventful meeting which was attended by 31 members. The election of officers and new committee members was one of the main focal points. In addition, John Littlefield presented an introduction to new members on the online tee-booking system. Members will shortly receive their pin numbers by post.

Officers and committee members elected were as follows:—

Captain: Michael Kearney; Vice-Captain: Michael Matthews; Honorary Secretary: Dave Harris; Ex-Officio: Jim Bollard; President: Noel Mckeon.

Committee: John Littlefield, David Daly, Vincent Broderick, Graham Fay and Kieron Ryan.

Fixtures for 2008 are:— Dun Laoghaire, 18 April; Roganstown, 14 May; BTU Nationals, Wales, 5/6 June; Carton House, 13 June; Forrest Little, 4 July; Captain's Day: Knightsbrook, weekend away, 22/23 August; Newlands, 5 September, President's Prize; Castleknock Golf Club, 17 October; Hermitage, 1 December.

There are a small number of memberships available for industry personnel interested in joining the BTU.

Contact: David Daly. Tel: 01- 885 3792; email: [info@atpireland.com](mailto:info@atpireland.com)



# 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
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evolution:high performance solution



3D Air Sales (Ireland) Ltd,

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





### o'regan appointed business development manager at CESenergy

Conor O'Regan has been appointed Business Development Manager at CESenergy in Dublin.

Prior to his appointment, Conor spent nine years with ESB International where he worked in commissioning, project management and was divisional manager of ESBI (UK) sub-stations projects division.

Conor then moved to GE Power Systems for three years as Commercial Manager where he was involved in projects throughout Europe and Nigeria. Following his return to Ireland last year, he joined one of Ireland's leading providers of engineering solutions designed to reduce carbon footprints for Irish business – CESenergy.

His new appointment is effective immediately.

Contact: Conor O'Regan, CESenergy. Tel: 01 - 833 4144; email: conoro@cesenergy.ie

### essco easy-fit actuators 220 series

Valves and actuators manufacturer Essco Controls has added considerably to the capacity and scope of its Total Control Range with the introduction of the new, self-adjusting, easy-fit, lift-lay 220 Series of actuators.

A key feature is simple screw assembly of actuator to valve without using special tools. As each actuator is "torque-switched", matching of valve stroke to actuator is automatic, thereby significantly reducing expensive commissioning time.

Other features include a valve position indicator and facility for manual over-ride. To overcome any need to break into the actuator enclosure, a flying lead is provided.

Vital motorised components are designed to reliably control heating, cooling and hot water systems in all building types. The valve and actuator assemblies provide a quality product renowned for long-term reliability

Contact: John Docwra, Technical Sales, Essco Controls. Tel: 0044 - 1491 824449; [www.esscocontrols.co.uk](http://www.esscocontrols.co.uk) or [www.esbe.se](http://www.esbe.se)



Dave Higgins, Building Materials Director and Nicky McCann, Product Manager

### new appointments at wolseley ireland

Wolseley Ireland has appointed Dave Higgins to the new role of Building Materials Director and Nicky McCann to the new role of Product Manager for doors, floors, ironmongery and private label. Both men will be based at Brooks head office in Bluebell, Dublin.

Dave will be responsible for increasing market share within the building materials sector, product development and negotiations with purchasers and suppliers. Nicky will be responsible for new business development and growing relationships with existing suppliers in this sector.

Wolseley Ireland is part of Wolseley plc, the world's leading distributor of heating and plumbing products and a leading supplier of builders' products to the professional market. In Ireland, it owns Brooks Group, Heat Merchants, Tubs & Tiles and Electric Merchants.



et al.: BS News

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## trade news + product information

### infrared thermometers from manotherm

The TP8 infrared thermometer from Manotherm is particularly suited for the reliable diagnosis and servicing of heating, air conditioning and ventilation systems, as well as general maintenance in industry.



Ideal for complex measuring tasks requiring extremely precise resolution, its large temperature-measuring range goes from  $-50^{\circ}\text{C}$  to  $+1000^{\circ}\text{C}$ , while the optical resolution is as high as 50:1.

Additionally, TP8 automatically determines the maximum, minimum, differential and average values for each measurement and shows these values on the easily-readable display by means of a function call.

Even objects at a great distance can be measured easily thanks to the bright laser spot.

Contact: Bob Gilbert, Robert Gilbert or Conor Steed, Manotherm. Tel: 01 - 452 2355; email: [info@manotherm.ie](mailto:info@manotherm.ie)

### ipfma lunch & diploma presentations

Over 350 members and guests attended the annual Members' Lunch of the Irish Property & Facility Management Association (IPFMA) which took place in Dublin recently.



Twenty-four diplomas were also presented at the lunch to graduates of the Property and Facility Management course (a one-year diploma course) run by the Association.

Pictured are Joe Behan, Chairman of the Chartered Institute of Arbitration; David O'Brien, Chairman of the Irish Property & Facility Management Association; and Jack Golden of Engineering Ireland.

## trade news + product information

### lowara A class variable speed circulator

Lowara's new range of high-efficiency, A Class, variable speed circulators are suitable for heating, air conditioning and chilling systems of every kind. Thanks to a synchronous permanent magnet motor combined with a frequency inverter, their use can lead to energy savings of up to 80%.



They are ideal for new applications but, thanks to excellent speed control, they allow an optimisation in the case of renewal or extension of an existing system. The wet rotor design and frequency converter also means less noise.

Key features are built-in electronic protection against overload; pump filter; electronic module with non-volatile memory to protect programmed data in case of power failure; anti-jamming function; automatic operation; simple electrical connections; easy programming; and multi-functional frontal display.

Other features include synchronous permanent magnets ECM (electronically-commuted motor) motor with speed from 1400 to 4800rpm; built-in frequency inverter; capacity up to 107 m<sup>3</sup>/h (twin version) and heads up to 13m.

Contact: Terry Murray, Lowara Ireland. Tel: 01 - 452 0266; email: [terry.murray@itt.com](mailto:terry.murray@itt.com)

### refrigeration skillnet training courses

Forthcoming events in the Refrigeration Skillnet training programme include:—

- Design of Energy Efficient Refrigeration Systems, Galway, Tuesday, 1 April 2008;
- Effective Project Management for Refrigeration Engineers, Dublin, Thursday, 3 April 2008;
- Design of Energy Efficient Refrigeration Systems, Cork, Thursday, 10 April 2008.

You can find details of these, and all Refrigeration Skillnet training courses at [www.refrigerationskillnet.ie](http://www.refrigerationskillnet.ie)

Contact: Enda Hogan, Refrigeration Skillnet Network Manager. Tel: 058 - 44211; email: [refskill@eircom.net](mailto:refskill@eircom.net)

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WIRELESS CONTROL**



## trade news + product information



Michael Buckley with Kevin O'Connell, DIT; Peter Roche, Chairperson EI Accreditation Panel; and Eugene Coyle, DIT

### engineers ireland accreditation of DIT level 7 programmes

Engineers Ireland hosted an accreditation event in DIT Bolton St recently in which nine Level 7 programmes in the Faculty of Engineering received five-year accreditation.

This is a very important achievement for the Faculty as, via Engineers Ireland and under the Sydney Accord, international recognition is given to EI Level 7 accredited programmes. This will allow programme graduates travel the world and practice with recognised qualifications. It also enhances the profile of companies who employ these graduates, especially when tendering for international contracts.

The event was also very important for Engineers Ireland who were themselves being accredited at the same time by EUR-ACE, the European body set up for the accreditation of engineering programmes in the European Higher Education Area (Bologna Process).

### ces — engineering better energy solutions

The forthcoming Energy Show (Main Hall, RDS, 16 & 17 April 2008) is the ideal showcase opportunity for CESenergy, one of Ireland's leading providers of energy solutions. It has a proven track record in the successful design, build and management of CHP, tri-generation and district heating, energy-efficient solutions, not just in Ireland but across the UK, Europe and even Australia.

Its team of highly-qualified and experienced engineers provide consistently high quality work and is especially renowned for working closely with consultants, architects, developers and contractors to deliver projects on time and within budget.

Ultimately, CESenergy delivers better energy solutions which in turn give substantial financial savings and reduce CO<sub>2</sub> emissions. For a complete turnkey solution, including finance options through its ESCo model, visit CESenergy at The Energy Show.

Contact: CESenergy. Tel: 01 - 953 0290; email: [info@cesenergy.ie](mailto:info@cesenergy.ie)

### giblin welcomes finance bill initiative

Sean Giblin of Cylon Controls has welcomed the recent Green Finance Bill which outlines plans to offer tax incentives aimed at supporting investment in new energy-saving equipment such building energy management systems (BEMS).

According to Giblin, this new incentive will encourage the installation of high-quality BEMS and enable businesses to upgrade to a more cost-effective comprehensive system – allowing real energy savings in the long run.

Cylon will continue to educate businesses on the value of a high-quality BEMS and plans two CPD seminars next month. The first will take place at its Dublin headquarters on 11 April with the second in the Clarion Hotel in Cork on 25 April.

Contact: Stiofán O'Flannabhra, Cylon Controls. Tel: 01- 245 0500; email: [info@cylon.com](mailto:info@cylon.com)





## Toshiba VRF. Maximum energy savings and flexibility.

The new Toshiba VRF systems are state-of-the-art for energy efficiency and modularity. The new MiNi-SMMS heat pump system, ideal for residential applications, compliments the successful SMMS heat pump and SHRM heat recovery range. Toshiba's VRF systems now deliver capacities from 12 to 150 kW to fulfill both residential and commercial needs.

Every unit incorporates a sophisticated twin rotary compressor. Distribution of demand on the compressor is optimized, the best energy efficiency is achieved and compressor longevity and reliability is enhanced.

Compact, lightweight and delivering COPs of 4.25\* these systems operate extremely quietly and are compatible with over 86 indoor unit sizes, available in 14 designs.

\*For 8HP unit



Email: [info@gtpnelan.ie](mailto:info@gtpnelan.ie) Tel: 01 286 4377



## trade news + product information

### sunvic select xls range of heating programmers

The Select XLS range of central heating programmers from Sunvic Controls — available in single-channel, 2-channel and the 3-channel models — is now available from Chronotherm Controls. The XLS series is an all-in-one, easy to use and set up range offering 7-day, 5/2 day and 24-hour options in the one unit. The easy-to-read back-lit display shows real time, with automatic summer/winter changeover and programme status. All programmers are also available in a stylish silver finish.

The XLS range single-channel and 2-channel models have the industry-standard backplate and are compatible with the current XL series.

Contact: Tom Noone, Chronotherm Controls. Tel: 01 - 864 3793; email: [chronotherm@eircom.net](mailto:chronotherm@eircom.net)



### oventrop control valves at the shelbourne

To simplify and speed installation and commissioning of the heating and cooling systems during the refurbishment of the recently re-opened Shelbourne Hotel in Dublin, Mercury Engineering used over 1000 Oventrop Cocon 4 fan coil control valves.

All the guest rooms and public areas have local control air conditioning with fan coil units either in ceiling voids above room lobbies or as floor-standing units within the space. All are fitted with Oventrop Cocon 4 control valves which control room temperature by changing the share of water to the terminal unit via an actuator.

The compact valves, with 40mm centres, are designed to be installed in close proximity to the terminal unit and can also be used to carry out the hydronic balancing using the double regulating function, while measuring the pressure drop across the fixed orifice and relating this to flow charts.

With six functions in a compact single valve, installation times can be reduced by as much as 25%. A full range of Oventrop electrothermal and electromotive actuators is available to provide on/off, proportional or 3-point control. EIB and LON actuators are available for connection to network control systems.

As well as the Cocon 4s, Oventrop supplied all the double regulating and butterfly isolation valves and strainers for the complete project.

### carrier diamond class

Carrier's newly-introduced Diamond range of air conditioning units features a unique design incorporating "invisible" solutions devised to preserve the architectural aesthetics of the application.

Suitable for wall or corner installation, the innovative vertical design was developed in collaboration with a leading Italian designer and finalised through extensive market research. Four different colour panels — ivory, aluminium, coral and artic blue — mean the units complement virtually every interior design option.

The double A Class rating in cooling and heating provides maximum comfort yet very high energy efficiencies, while the special filter surface results in an advanced air purification system.

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







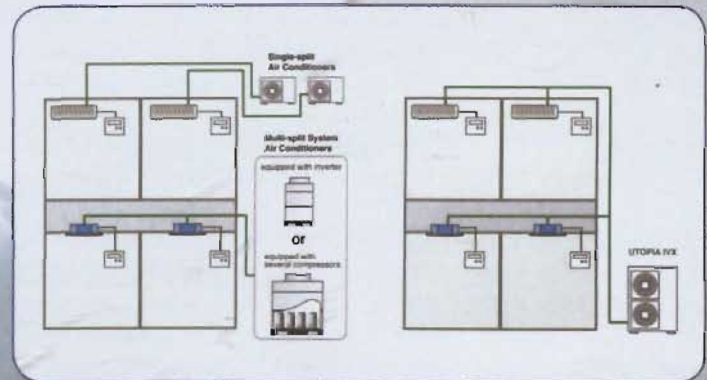
## Utopia IVX Technical Description

- Compact and Lightweight
- Minimum use of refrigerant
- Wide operating range down to -15° cooling and -20°
- Individual unit control
- Award winning Energy Efficiency – High COP of 4.24 (8HP models)

The Utopia IVX is a very efficient product boasting an extremely high COP of 4.24 (8HP models) and is a further development on its predecessor which was presented the "Shoene Taishou" (Energy Efficiency Award) by the Japanese Government. The unit uses a horizontal discharge twin fan design allowing for a more efficient use of floor space and is available in 20, 25 and 30 kW models.

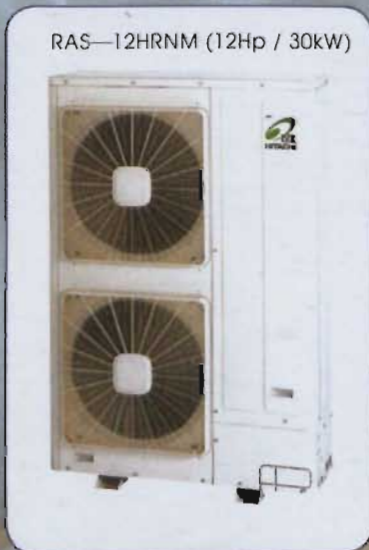
### Greater Installation Flexibility

The IVX changes the way we think about twin, triple and quad split configurations and is the perfect choice for installations requiring individual unit control but have no need for the piping length capabilities available with more expensive VRF systems.



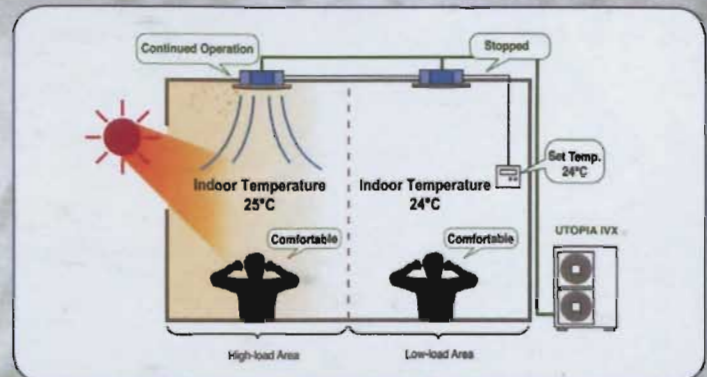
# Utopia IVX

RAS—12HRNM (12Hp / 30kW)



### More Efficient Control

By the use of individual control we can create a more comfortable environment for rooms that have unbalanced loads. This also leads to more economical operation as units not requiring operation will stop, reducing wasted energy.



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## trade news + product information

### unitherm gets agrément approval for multi-layer pipes & fittings

As we went to press Declan Kissane of Unitherm informed *bs news* that the company has secured Irish Agrément Board approval for its range of multilayer pipes and fittings. Specifically, these approvals cover its ranges:—

- Alpex-duo multi-layer pipes for plumbing, central and underfloor heating systems;
- Turatec multi-layer pipes for plumbing, central and underfloor heating systems;
- ff-therm PEX pipes and fittings for underfloor heating.

*bs news* will have further details in our next issue.

Contact: Declan Kissane, Unitherm Heating Systems. Tel: 01 - 610 9153; email: info@uni-therm.net

### hitachi dc inverter utopia ivx

Hitachi's new DC inverter Utopia IVX brings variant refrigerant flow and independent control to the Utopia range of air conditioners.

Boasting a COP of 4.24 (8HP models), these units use a horizontal discharge twin fan design which allows for a more efficient use of floor space. Fully compatible with the Hitachi System Free range of indoor units, Utopia IVX is suitable for twin, triple and quad split installations.

The range comes in 20kW, 25kW and 30kW models. Compact and lightweight, the operating range is down to -15°C cooling and -20°C heating.

As IVX uses variable refrigerant flow, indoor units can be controlled individually. This means a reduction in the amount of energy used and related cheaper running costs. This, coupled with the reduced refrigerant used, makes Utopia IVX extremely environment friendly.



Contact: Fergus Daly, Hitachi Europe. Tel: 01 - 216 4066; email: fergus.daly@hitachi-eu.com

### intelligent smart start from myson

Myson's new Smart Start programmable room thermostats vary start-up times to ensure that the building achieves set temperature only when required. It continually learns the temperature rise requirement, delaying the start-up time and therefore saving energy during milder weather.

Available in both hard-wired (MPRT) and radio frequency (MPRT RF) versions, these new room stats incorporate:—



#### MPRT Features

- Three, easily-adjustable, temperature settings;
- 2-in-1 programmable thermostat 24-hour or 7-day (installer set-up option);
- Backlit display with easy-to-follow instructions;
- All 24-hour temperature settings shown on display;
- One-hour high-temperature boost option;
- Volt-free 2-wire connection, ideal for combination boilers;
- Service required indicator (installer set-up option);
- Holiday override 1 to 99 days.

#### MPRT RF Features

- This model incorporates all the features of the MPRT with the addition of:—
- Wireless, radio frequency, connection;
  - Special controller stand which makes it easy to locate and use.

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



# cesenergy



*Engineering Better Energy Solutions*



**The Energy Show**  
 16 & 17 April 2008  
 RDS, Dublin 4  
 Stand: E5 & E6

CESenergy is one of Ireland's leading providers of energy solutions with a proven track record in the successful design, build and management of CHP, Tri-generation, District Heating energy efficient solutions in Ireland, England, Europe and Australia. With a team of qualified and experienced engineers providing consistently high quality work we have worked with the leading consultants, architects, developers and contractors to deliver projects on time and within budget.

We pride ourselves on running an effective and thorough quality control system which covers all areas of health and safety ensuring that our clients receive a consistently high quality of service and finished project.

**PRODUCTS AND SERVICES:**

**CHP/Trigeneration**

- **Design**
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- **Operate/Maintain**
- **Finance** - ESCo

**District Heating**

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- **Instaliation and Project Management**
- **PEWO** - Consumer Unit
- **CESenergy Control** - Maintenance, Monitoring, Billing

CESenergy engineer better energy solutions giving substantial financial savings and reducing CO<sub>2</sub> emissions through the highest standards of engineering excellence. We offer a complete turnkey solution including finance options through our ESCo model.



**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)



## trade news + product information

### grundfos alpha2 'best energy-efficient circulator'

The Grundfos Alpha2 range won two categories in this year's Energy+Pumps awards which were presented at the recent Mostra Convegno in Milan, Italy. Energy+Pumps is an EU-sponsored project devised to promote the development and use of high-efficiency circulating pumps.

This year, the prestigious "Best energy-efficient circulator" award was given to pumps in three different ranges. The Grundfos Alpha2 circulator won two out of three awards in the two different flow ranges representing domestic applications.

According to Energy+ Pumps, more than 100 million circulators throughout Europe currently consume approximately 50 TWh per year. The excessive electricity consumption causes an emission of 30 million tons of CO<sub>2</sub> per year.

By choosing A-labelled, energy-efficient circulators as the new standard for circulators in Europe, a reduction in CO<sub>2</sub> emissions of more than 60% can be achieved. That corresponds to a decrease in energy consumption of more than 30 TWh.

Contact: [www.energypluspumps.eu](http://www.energypluspumps.eu)



## BLÜCHER® EuroPipe

### The drainage system for tall buildings

#### Lightweight

At 2.8kg per metre (110mm dia) one man can handle BLÜCHER® EuroPipe

#### Requires fewer supports

Only requires brackets at 3m centres  
No need for additional anchors

#### Longer pipe lengths

Available in a range of standard lengths from 150mm to 6m

#### Faster installation

Push fit joints make it faster to install than other metallic systems

#### Non combustible

BLÜCHER® EuroPipe does not require fire collars and will not cause fire to spread up or down within a building

BLÜCHER®



BLÜCHER® EuroPipe stainless steel push fit pipework. The perfect solution for soil, waste, rainwater and process applications.

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KEEPING UP THE FLOW



## trade news + product information

### dwyer refrigerant leak detector

The Model RLD1 Dwyer leak detector from Manotherm detects and pinpoints even the smallest leaks of refrigerant gases. It is effective in detecting all existing refrigerants, including HFC, HCFC, CFC, SF6, R134a and R123.

The unit features thumbwheel operation to increase sensitivity and audio-visual indication. An increasing tick rate sounds as a leak is pinpointed and the red indication light flashes more rapidly. The flexible gooseneck probe is ideal for hard-to-reach areas.

Applications include domestic and commercial refrigerant systems, air conditioning, automotive, and quality control testing environments.

Contact: Bob Gilbert, Robert Gilbert or Conor Steed, Manotherm. Tel: 01 - 452 2355; email: [info@manotherm.ie](mailto:info@manotherm.ie)



## Jobs Corner Jobs Corner

### Versatile

versatile  
BATHTUBS • TILES • STONE • HEATING

Versatile, one of Ireland's leading suppliers of heating, cooling and ventilation products, requires a **Technical Sales & Business Development Engineer** to spearhead further expansion in the Dublin region. The Versatile portfolio has expanded considerably in recent months with the new additions very firmly focussed on the sustainable energy field.

#### Role

- Managing selected mechanical consultant engineers and architectural practices, mainly in the Dublin area;
- Taking direct responsibility for development of new innovative and sustainable products;
- Supporting the existing sales team with these products for the 32 counties;
- Liaising with design teams and contractors on projects;
- Delivering sales growth;
- Delivering successful projects to satisfied end users.

#### The Person Required

- Strong technical background or sales experience in this field;
- An electrical/electronics/controls or AC background would be advantageous;
- Excellent intercommunication skills;
- Strong organisational skills;
- Ability to work under pressure and embrace challenges;
- Ability to work within and be part of a team;
- Ability to identify new route to market and key decision makers;
- A positive energetic frame of mind.

An inquiring open mind to product developments is also essential. The position might well suit a consultant mechanical or electrical engineer with no sales experience but who wishes to enter the field.

#### How to apply

Applications and full CV details:—  
Bernice Reid, Human Resources, Versatile Group.  
Tel: 046 - 902 9444; email: [breid@versatile.ie](mailto:breid@versatile.ie)

*Please make reference to bs news when applying to this advert.*



# **NEW** Wolf KG Top: Klima Redefining air-

Erleben Sie jetzt die neue Dimension der Klimatechnik: das neue Wolf KG Top. Für höchste Flexibilität bei Ihrer Planungsarbeit, einfache Handhabung bei Transport und Montage sowie maximale Effizienz für die Betreiber.

*Experience a new dimension in air-conditioning technology: the new Wolf KG Top. For flexible planning, easy handling during transport and installation, and maximum efficiency for the operator.*





technik neu definiert.  
*conditioning technology.*





# VRVIII Heat Recovery System Introduced by Daikin Europe

Because of a typographical error last month, the operating ranges of the unit featured in this article were incorrect. Hence it is reproduced here in full with the correct capacities (editor's note).

**D**aikin Europe's new VRVIII heat recovery system complements the VRVIII heat pump/cooling only models introduced in 2006, plus the more recent mini VRVIII-S, and replaces the earlier VRVII heat recovery system.

However, the new system — incorporating the best features of its VRVII predecessor — represents a significant step forward in addressing both existing and forthcoming environmental regulations. In addition to its heat recovery

facility, it also offers consultants, contractors, service engineers and end-users many design, installation and maintenance-friendly refinements.

Among its most important new features is the ability to connect up to 64 indoor units (40 for VRVII) to a single outdoor unit in increments of 2HP up to 48HP. Outdoor unit modules can be configured on a combined "multi" basis between 18HP and 48HP with a single heat exchanger per unit, as well as in stand-alone format from 8HP to 16HP with two heat exchangers.

VRVIII HR also offers up to 200% unit diversity ratio for a single outdoor module system and 160% to 130% on double or triple multi modules. Operating range is wide at -5°C to 43°C in cooling and -20°C to 15.5°C in heating. The system supports 14 different-format indoor fan coil units, including the new 360° radial airflow Roundflow ceiling cassette.

Unlike contemporary VRF systems, alternate defrosting of the heat exchangers on VRVIII HR multi module outdoor allows continuous heating to be supplied from the indoor units

throughout these cycles, thereby avoiding the transmission of cold draughts of air into the room area.

Leakage prevention is ensured by the use of brazed joints in place of flanged and flared connections before the shut-off valves, as well as by brazed pressure sensors and electronic gauges instead of sensors and gauge ports. There is also an average 10% less refrigerant charge compared to a similar VRVII system.

A new design BSVQ branch selector box enables the cooling/heating changeover function to be activated by pressure equalisation at the box itself rather than for the entire system, while the "night quiet" mode can be set automatically to cut in 8 hours after peak daytime temperature and run for 10 hours before reverting to normal operating mode. Design flexibility is also enhanced by the incorporation of a powerful new inverter-driven outdoor unit fan, which provides a higher ESP of 78.4Pa (58.8Pa for VRVII). Outdoor unit footprint is less than similar capacity VRVII models and piping lengths are the highest in the industry at 1000m

(total system), 165m (maximum run), 90m (maximum level difference) and 90m (longest branch).

Daikin's strict adherence to 'F' Gas Regulations are reflected in the unique VRVIII capacity for refrigerant containment during both charging and system operation. This important facility enables the amount of additional refrigerant charging during commissioning to be controlled automatically. VRVIII HR takes full account of all legislative efficiency requirements by returning a 14% average increase in efficiency and 20% increase in single unit efficiency over VRVII HR. COPs and EERs of up to 4.4 and 4.2 respectively are obtained at 100% connection.

Also, a new 3-wall heat exchanger increases effective coil surface. Friction losses are also reduced by virtue of its high thrust mechanism, which reduces operating noise as well as generating improved efficiency.

Contact: Richard Smith, Daikin Europe NV (Ireland Office). Tel: 01 — 642 3430; email: [info@daikin.ie](mailto:info@daikin.ie)





# Sanyo Introduces Sustainable Solutions at Mostra Convegno et al.: BS News

**S**anyo is this year celebrating its 50th anniversary. As part of the celebrations SAE unveiled ground-breaking sustainable solutions at Mostra Convegno Expocomfort in Milan. "With global warming already affecting climate change", says Sanyo Ireland General Manager Vincent Mahony, "sustainability is a major issue for the air conditioning sector. The theme of our stand at Mostra Convegno was in keeping with our brand vision which follows the concept of "Think GAIA – For Life and the Earth".



Among the ground-breaking solutions introduced were:—

- the revolutionary ECO G Power GHP, a gas-driven VRF air conditioning system which supplies heating and cooling while co-generating hot water and electricity;
- the CO<sub>2</sub> ECO water heater, a dramatic air to water heat pump for domestic hot water and space heating;
- the new K-Type wall-mounted range of room air conditioners.

Sanyo's ECO G Power is claimed to be a world-first in air conditioning design supplying heating or cooling while co-

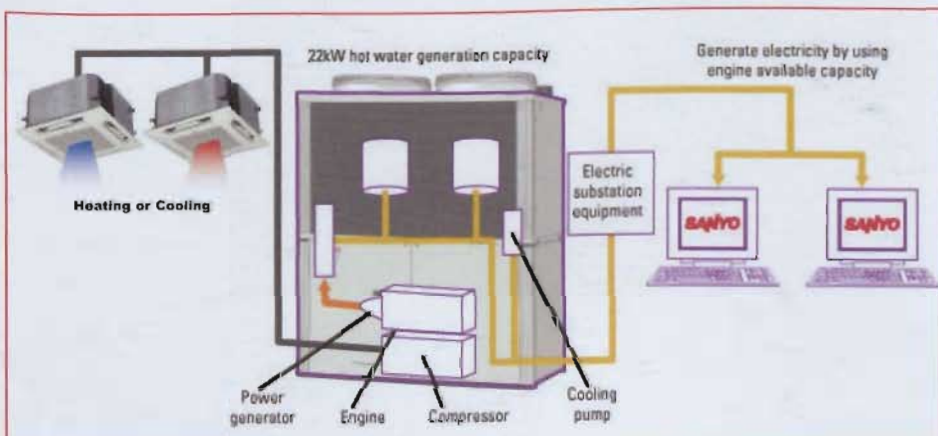
generating both hot water and electrical power. Each ECO G Power unit has a 4.0kW generator which provides enough power to run 40 indoor air conditioning units or the equivalent of eight computers. This innovative technology also reduces CO<sub>2</sub> emissions by up to 30%.

The emergence of Sanyo's new CO<sub>2</sub> ECO water heater has resulted in a dramatic technological leap forward. New to Ireland, this type of unit is particularly attractive because of its high COP, high water temperature and environmental refrigerant. For instance, it can generate hot water up to 65°C at a COP of 3.75,

Finally, there was the new K-Type wall-mounted range of room air conditioners. This stylish new series of air conditioners features a discreet design that will harmonise with any interior decor scheme. Offering energy-efficient heating and cooling, each unit is light-weight and compact for easy mounting and installation. Maximum end-user comfort is ensured in heating mode by the "cold draft prevention" function.

"We anticipate a very positive market response to these developments", says Sanyo Ireland's Dave Colbert. "Our turnover in Europe grew by 46% in 2006 and is on course to grow by a further 25% in the current financial year. Our 'Think GAIA' brand vision is now showing results through a number of successful product ranges, including solar cells with the world's highest energy conversion rate, ready-to-use rechargeable batteries, and extremely efficient air conditioning systems."

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



Typical application showing the electricity provided by Sanyo's ECO G Power



# Mick Homston — An Appreciation

The recent death of Michael "Mick" Homston marks the passing of yet another long-time industry servant. Michael was of the old school, having entered the trade as an apprentice plumber in 1948. That class intake included a number of other noted industry figures, among them Liam Sands and Jimmy Hamilton. Indeed, such was the strength of the friendship these three young lads forged that over the years they became affectionately known as "The Three Amigos".

Mick started out as a first-year apprentice in Bolton St Tech on the princely sum of Seven Shillings & Six old pence (7/6) per week, rising to 12/6 in the second year. Then he went out into industry to serve the rest of his 7-year apprenticeship working in the field. Over the years he worked with Hallet & Ingram, Leo Lynch, McGovern Engineering, Hamilton & Fay and Purcell & Clarke. He worked down the country on the Galway Regional Hospital, and later Sligo General Hospital, before eventually returning to Dublin to set up in business on his own.



Michael  
Homston

Mick was widely known and respected throughout the business and enjoyed considerable success down through the years. He is fondly remembered by all who dealt with him, from fellow-plumbing professionals to wholesale merchants and product manufacturers.

While he was committed to his business and worked extremely long hours at times, he was also very much involved with local community affairs. In the late 1950s Mick and his father founded Mourne Celtic Football Club which provided a healthy outlet for many young lads in the locality. Mick, the goalkeeper, was Captain of the team and they went on to win many trophies.

He also established the Kimmage Residents Association and shortly afterwards got the local Neighbourhood Watch programme underway, working closely with local MEP Gay Mitchell and the Crumlin Police Station. In addition, he organised a campaign to get the old folks apartments on Rathland Road refurbished and, after a long battle and a great deal of agitation, was successful.

He also somehow found time to support the Dublin Football team, Shamrock Rovers, and Chelsea FC.

As the foregoing illustrates, Mick was a driven individual whose great energy and strength of character touched all who came into contact with him, be it professionally or socially. On behalf of the industry at large, *bs news* extends sincere condolences to his ex-wife Alice, daughter Janet and son Michael.

In conclusion, Gay Mitchell, MEP writes:—

"Michael Homston was a dear friend of mine and I am shocked to learn of his passing. He was a gentleman who always put a smile on, even in the most difficult circumstances. He was a person with a real concern for his neighbour and his community, and always showed concern for the vulnerable.

"Michael enjoyed a quiet pint and a chat and was an uncomplicated man — what you saw was what you got. I was very fond of him. He will be greatly missed by all who knew him, not least of all his local community. Ar dheis De go raibh a hanam.



**INTRODUCING** et al.: BS News

# ECO-MAN





Mr. SLIM™

- Energy Rating AA
- Easy installation and versatility
- Replace technology – reuse existing pipework
- Silent operation
- Quick clean design – automatic electric filter lowering function
- 360° I-See Air Distribution Sensor



ECOMAN FROM MITSUBI  
WHATEVER THE APPLICAT  
ELECTRICS COMPREHENS  
AND AIR CONDITIONING  
TO PROVIDE THE ULTIM  
EFFICIENCY AND GUAR  
ENERGY DEMAND ANI

- City Multi exceeds current demands for efficiency, Seasonal Energy Efficiency Rating (SEER) of 6.26
- High sensible cooling function
- Up to 50 indoor units can be connected to a single system
- BMS compatible
- 100% inverter control on all outdoor units
- Quiet operation

CITY MULTI



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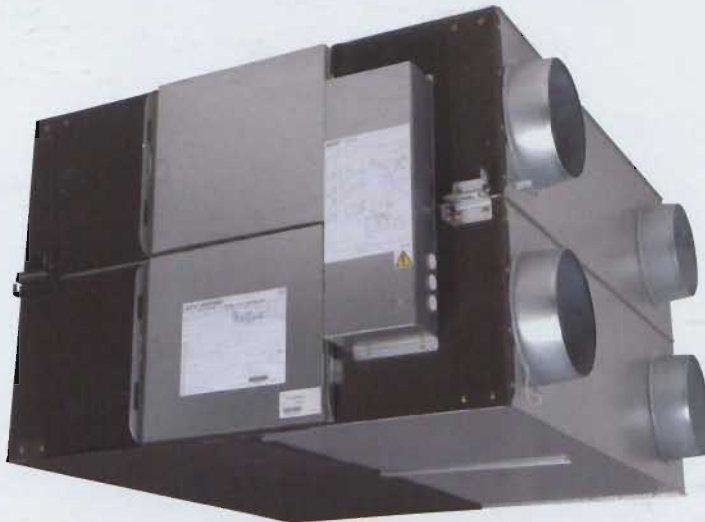
MITSUBISHI ELECTRIC HERE,  
 A WIDE RANGE OF HEATING  
 SYSTEMS ARE DESIGNED  
 TO SAVE IN ENERGY SAVING  
 GUARANTEED TO CUT YOUR  
 RUNNING COSTS.



et al.: BS News



- Effective ventilation – fresh air and extract
- 80% recovery of waste energy
- Up to 30% reduction on heating and cooling plant
- Free cooling function
- Built in sound attenuation



- Alternative to Gas and Oil boilers
- Easy to install – no DX pipework required
- Low operating costs – offers a 30% saving on running costs
- Converts free energy from the air and upgrades it to higher temperatures suitable for heating
- SEI Grant available
- Low carbon emissions





# ECO-MAN

**THE HERO  
THAT SAVES**



**FOR MORE INFORMATION CALL  
01 419 8800**





## Belfast

**Kings Hall Conference Centre**  
**14 & 15 April 2008**

## Dublin

**Red Cow Moran's Hotel**  
**16 & 17 April 2008**

### Keep Abreast of Latest Plumbing & Heating Developments

Since the first Phex domestic plumbing and heating exhibition over ten years ago, the series has grown considerably in stature and respect within the industry and is now regarded as the primary show for the sector in England, Scotland, Northern Ireland and the Republic of Ireland.

The basis of the exhibition format is a series of two-day shows at keynote venues in strategic locations which ensure ease of access for visitors and maximum exposure for the exhibitors. In Ireland the shows are held in Dublin and Belfast on consecutive days, thereby creating a strong impact across the entire country.

The Belfast venue is the Kings Hall Conference Centre and the dates are Monday, 14 April and Tuesday, 15 April 2008. The entire ensemble then moves on to Moran's Red Cow Hotel on Wednesday, 16 April and Thursday, 17 April to conclude the series. Opening times at both venues is 6pm to 9.30pm on day one and 11am to 3pm on the second day.

The core theme of the series is domestic plumbing and heating products, and related services. All of the leading players in this industry sector participate, many of them doing so in partnership with their Irish sister-companies or distributors.

The target audience is primarily heating and plumbing installers, along with merchants and building materials supply outlets. However, given the growing sophistication of many of the products on display, the number of consulting engineers and other building professionals visiting the shows has increased year on year.

Apart from an excellent opportunity to keep up with the latest developments from manufacturers, Phex is also the perfect networking opportunity. That is made all the easier thanks to the free buffet meal for all visitors and the very enjoyable Phex Ireland Roulette evening.



Keep up with the latest developments in the domestic heating and plumbing industry.

See the latest in energy efficiency and design.

Discuss your needs with the manufacturers and distributors.

Each visitor will receive a free buffet.

Win spot prizes at PHEX Ireland Roulette evening.

## BELFAST

KINGS HALL CONFERENCE CENTRE

15TH APRIL 2008 (TUESDAY LUNCH 11AM - 3.00PM)

## DUBLIN

RED COW MORAN'S HOTEL

16TH APRIL 2008 (WEDNESDAY EVENING 6PM - 9.30PM)

17TH APRIL 2008 (THURSDAY LUNCH 11AM - 3.00PM)

## TICKET REQUEST

To request tickets for PHEX Ireland 2008, please contact:

Tel: (0044) 20 8680 4200

Fax: (0044) 20 8681 5049

Email: [info@phexshow.co.uk](mailto:info@phexshow.co.uk)

Website: [www.phexshow.co.uk](http://www.phexshow.co.uk)





## Belfast

**Kings Hall Conference Centre  
14 & 15 April 2008**

**PHEX**  
THE PLUMBING & HEATING EXHIBITION

## Dublin

**Red Cow Moran's Hotel  
16 & 17 April 2008**

### Sentinel Performance Solutions

Sentinel provides a range of high-quality products for the cleaning, protection and noise reduction of domestic heating systems which improve system reliability, increase energy efficiency and extend system life. At PHEX Sentinel will introduce its new System Filter that removes magnetic and non-magnetic debris in a system. It requires no energy to operate, so it is very environmentally friendly. Moreover, it allows the heating system to operate at optimum efficiency levels, helping to reduce energy usage and as a result, CO<sub>2</sub> emissions.

Sentinel will also introduce its new lightweight, Jetflush Junior unit and it's 'X' range of liquid and concentrate chemical treatments. Installers can also sign up to the Sentinel Energy Efficiency Campaign.



**Contact**

Sentinel Performance Solutions  
Tel: +44 1928 588330  
email: [sales@sentinel-solutions.net](mailto:sales@sentinel-solutions.net)  
[www.sentinel-solutions.net](http://www.sentinel-solutions.net)

### Mira Showers — Modern Plant

Mira Showers will show exciting new products on Modern Plant's stand, including examples from the new range of Mini mixers and the new satin-chrome-finished Elite ST integrated pumped shower. Despite being half the size of conventional mixing valves, the new units still deliver the same high performance.

Meanwhile, the Elite ST has been introduced in a new satin-chrome finish, offering a stylish alternative to the white and chrome model. Integrated pumped showers, such as the Mira Elite, have gained popularity where traditional gravity water systems and low-pressure main supplies fail to give a good shower from a mixer shower.

Complementing the Mira products will be a range of commercial shower fittings from Rada, including the Unitherm and Thermotap.



**Contact**

Modern Plant  
Tel: 01 - 459 1344;  
email: [sales@modernplant.ie](mailto:sales@modernplant.ie)

### Potterton Myson Ireland

Potterton Myson Ireland is showing a selection of its industry-leading, high-efficiency heating solutions at PHEX, including:—

- The new Potterton Solar domestic hot water system;
- The Potterton Promax Combi HE Plus, available in three outputs: 24, 28 and 33 kW;
- The Potterton Promax System HE Plus, available in 12, 15, 18, 24 and 32 kW outputs.

All have a SEDBUK Band A rating, have ultra-low NOx emissions, are fully modulating and can be sited in unvented compartments, making them suitable for installation in a wide range of applications.

Also featured will be the Potterton Promax FSB 30 HE floor-standing boiler. It includes a built-in condensate pump which means it can even be situated in a basement.



**Contact**

Potterton Myson Ireland Ltd  
Tel: 01 - 459 0870  
email: [post@potterton-myson.ie](mailto:post@potterton-myson.ie)  
[www.potterton-myson.ie](http://www.potterton-myson.ie)

### Chronotherm — Sunvic

The forthcoming PHEX series of shows in Belfast and Dublin will feature the first public showing of Sunvic's new Select Range of programmers for central heating systems. This new all-in-one range comprises single channel, 2-channel and t3-channel variations, all incorporating 24-hour, 5/2-day and 7-day features, with large backlit display showing system status, and automatic Summer/Winter changeover. The single and 2-channel units have industry-standard backplates which allow change without wiring alterations, large extra hour and advance buttons for simplicity of use by the consumer, and simple set-up buttons for programme set-up and use.

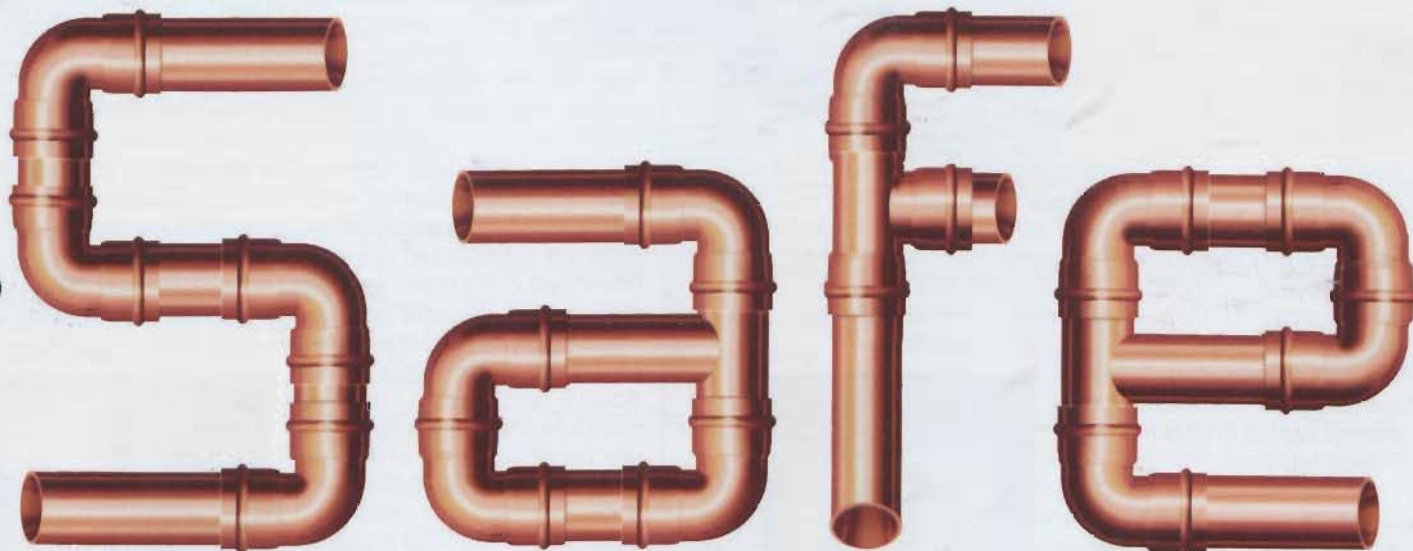
The new programmers complement the recently-introduced "spring return valves" range with Irish copper fittings and "neon valve open" indicator.



**Contact**

Chronotherm Controls  
Tel: 01 - 410 5756  
email: [chronotherm@eircom.net](mailto:chronotherm@eircom.net)



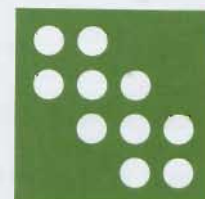


## SAFE AND RELIABLE COPPER TUBE

Copper tube systems have been helping to keep the water supply safe over thousands of years, thanks to copper's effectiveness in fighting the growth of bacteria.

Irish Metal Industries offers you the widest possible choice of copper tube for drinking water applications, as well as for chilled water, heating and gas. With its 25 year guarantee and carrying either the Irish Standard Mark or BSI Kitemark, you can be confident our copper tube will provide years of reliable service.

You are safe with copper tube from IMI – so ask for it by name.



**Irish Metal  
Industries**





# PHEX

THE PLUMBING & HEATING EXHIBITION

## Belfast

**Kings Hall Conference Centre  
14 & 15 April 2008**

## Dublin

**Red Cow Moran's Hotel  
16 & 17 April 2008**

### Honeywell Control Systems

Visitors to Honeywell's stand will see the new CM900 programmable room thermostat and ST9000 programmers, which introduce Line of Text (LoT™) display. This innovation makes every installation easier to commission, set up and hand over. LoT™ will also reduce customer call-backs. With the growth of combi boiler installations, Honeywell offers both wired and wireless programmable room thermostat control solutions. That said, traditional control solutions are still of major importance so Honeywell has products to develop this market. Moreover, apart from heating system controls, Honeywell has many other controls for domestic installation, such as reversible flow radiator thermostats, pressure reducing valves, thermostatic mixing valves and automatic bypass valves.



**Contact**

Honeywell Control Systems  
Tel: +44 1344 656352;  
email:  
info.centre@honeywell.com  
www.honeywelluk.com

### Ariston Professional Team

Ariston has added four new capacity models to the stainless steel Primo range of unvented water heaters which will be represented on the stand by the Primo Twin. This is a twin coil model also with twin immersion heaters that is now available in three capacities.

It is compatible with Ariston's SOLARcomfort, solar thermal water heating "ready-to-fit" package which forms part of the display. Another water heating exhibit is the electric Europrisma wall-mounted unvented multi-point. The Ariston boiler display will also feature the new generation of intelligent boilers, the GENUS HE and the CLAS HE, both Band A rated, as well as the microGENUS HE Band B appliance. Local Area Managers will be available to discuss any aspect of Ariston's products and service.

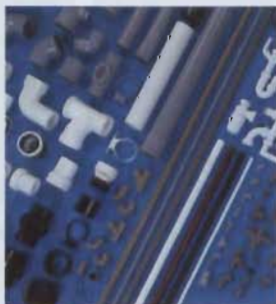


**Contact**

Ariston Professional Team Ltd  
Tel: 01- 899 5000  
email: info@ie.mtsgroup.com  
www.mtsgroup.com/ie

### Wavin Ireland

In Ireland Wavin is synonymous with plastic pipe systems for more than 40 years. It now operates from three locations in Ireland, the main manufacturing and distribution operation being in Balbriggan, Co Dublin. The other locations are additional sales and distribution depots in Lisburn and Cork. Wavin's success in Ireland is based on close attention to product quality, innovation and development and by creating a special relationship with suppliers and customers. It specialise in designing and manufacturing complete plastic systems for the building and construction industry, public utility organisations and statutory authorities. Wavin's technical and commercial experience enables it to provide solutions in plastics to a broad range of industry sectors, including plumbing and heating.



**Contact**

Wavin Ireland  
Tel: 01 - 802 0202  
email: ie\_info@wavin.com

### Worcester Bosch Group

Worcester has been manufacturing domestic boilers since 1962 and is now a recognised market leader in high-efficiency boiler technology. As part of the worldwide Bosch Group, its products are designed and manufactured with the built-in quality and reliability that is synonymous with the Bosch name. With an extensive range of energy efficient products as well as a serious commitment to sustainable energy resources, Worcester aims to be number one in the market for heating and hot water comfort. It is dedicated to environmental protection and prioritises product development in the interests of the safety of people, the economical use of resources, and environmental sustainability. The fruits of that commitment will be on view at Phex Belfast and Phex Dublin.



**Contact**

Heatmerchants Nationwide  
www.heatmerchants.ie



# new wolf KG top ahu — “technology that serves humanity”

# W

olf, one of the world's leading

heating, air conditioning, ventilation and solar systems suppliers, has developed a completely new range of air handling units which combine flexibility, hygiene, energy efficiency and economy.

Called the KG/KGW Top series, it is available in 16 sizes ranging from 100m<sup>3</sup>/h to 1000,000 m<sup>3</sup>/h. All satisfy the requirements of VDI Guideline 6022 on the hygienic planning, execution and maintenance of technical systems for interior air. This is important in any application but particularly so for hospitals, medical clinics and other premises that are subject to exacting hygiene controls. Coolair is now to the forefront in providing customised solutions for such applications.

All units are built into a new frame section with push-fit corner joints. All the components can be supplied for easy and efficient on-site assembly with equipment widths adapted to HGV widths in order to reduce transport costs.

In addition to stability, tightness and heat insulation, a key element of the frame design and casing panels — including the top and bottom panels — is long-term hygiene and easy cleaning. All connections between the frame construction and the inlaid panels are flush, the bottom and top surfaces are absolutely smooth, and the panels are sealed with hygiene-compatible material.

Components such as filters, drop eliminators, heat exchangers and ventilators can be freely inspected or pulled out when necessary, while the bottom panel for the air cooler is designed so that



Schematic showing a hotel installation of the new Wolf KP Top air handling unit

condensate can drain safely into the pan via a 3D gradient.

Critical features and benefits include:—

- Weatherproof design with a roof capable of supporting the weight of a person, made of galvanised steel and surrounded by a gutter projecting 50 mm from the roof;
- Countersunk panels and doors for a sleek modern design;
- Thermally insulating double-glazed inspection windows on request;
- Smooth, single-piece, removable panels, with heat and sound insulation. They can also be provided in steel;
- All doors have glass-fibre reinforced handles;
- Patent Wolf double-lipped seal for doors, making low noise; no silicon sealing needed;
- Plug-in frame design for easy assembling and dismantling;
- Filters and registers: optimal cross-section layout for energy efficiency;
- Absolutely smooth and gapless bottom and top surfaces guarantee optimum hygiene, make cleaning easy and enable free access to all components for inspection and service;

- Efficient insulation: 50 mm of mineral wool (above KG 450 at ground and ceiling 76 mm) permits the minimum amount of heat transfer and minimises conducting bridges that transmit cold;
- Single and multi-functional units for modular and inexpensive assembling with several components per cube (eg filter, valve, coil).
- Standard registers conform to VDI 6022 and VDI 3803;
- Highly-efficient KGX and RWT systems;
- Since the actuator motors are mounted directly on the axle, an optimal communication of force is enabled;
- Units can be fully dismantled and are therefore easy to recycle;
- Combination of various equipment sizes is possible;
- Devices with isolator serially tested for high-voltage conformity according to VDE 700;
- TÜV-GS-Certification;
- Electromagnetic compatibility;
- Noise suppression with test results;
- Short delivery times.

Contact: Brendan Kilgallon,  
Coolair.  
Tel: 01 - 451 1244;  
email: info@coolair.ie



# face to face

CONOR CLARKE



T

here was a time when working as a services engineer for the Office of Public Works (OPW) was regarded as something of a backwater in career terms. It was seen as once removed from the dynamic private sector where the real cut and thrust of building services innovation was carried out. Indeed, there may well have been an element of truth in that many years ago but, over the last decade in particular, the scenario has dramatically changed. OPW is now at the forefront of building services developments, pioneering new initiatives which are setting industry benchmarks.

As a Senior Engineer in the Mechanical & Electrical Section, Engineering Services Department of the OPW, Conor Clarke is very much involved in that process. In fact, he has been part of it from the outset, when the strategy was in its infancy and before the terms climate change, carbon footprint and energy efficiency became so commonplace that they now pepper every conversation about building services.

Conor's introduction to the fledgling concept of energy management began while he was still a 3rd-year engineering student at Bolton St. Because of his interest in statistical analysis, he secured a summer job with the OPW working on what was the first attempt at energy management across all OPW-occupied buildings.

Broadly speaking, the idea was to evaluate the energy usage of each OPW building with a view to identifying where reductions could be achieved. This was the perfect starting point but, given that the principal method of information-gathering was the ESB bills, it ultimately failed. Collection of the data was irregular and haphazard, while it was also very difficult to collate and analyse the information in any meaningful way.

Conor returned to Bolton St to finish his studies but, on graduation, secured a year-long contract position as Energy Manager with Trinity College in Dublin. He maintained his contacts with OPW and, on conclusion of his Trinity contract, joined OPW in a similar contract capacity. For the next couple of years he still did part-time work for Trinity, SEI and Wyatt, in addition to OPW. His main focus throughout this time was energy management, especially at OPW, where he was very much involved in developing the process he originally helped get off the ground as a student. At this stage the emphasis had moved away from information-gathering via the ESB bills and was, in relative terms, much more sophisticated.

In 2002 he joined OPW in a permanent capacity as an M&E services engineer



CONOR CLARKE

*"The system monitors and records both electrical and heating fuel consumption and the data is accessible from a dedicated web site. This is an important factor for assessing current energy usage and determining optimum solutions for energy efficiency."*

to work on new projects with specific responsibility for the energy conservation programme. Thanks to considerable advances in technology, excellent monitoring and control devices — including early building management systems — were deployed extensively throughout OPW-occupied buildings. At last the process that had commenced so tentatively and in a somewhat primitive way was now bearing fruit. Here at last was real-time, highly-valuable information.

An added bonus of the ever-increasing sophistication of the monitoring and control devices was that, in addition to providing incredibly-detailed information on energy consumption and usage patterns, they also allowed for positive intervention. Remote monitoring and control became a reality. Moreover, it led to unforeseen benefits in respect of ongoing and preventative maintenance of buildings. Now that web-based GSM systems have arrived, it is like a dream come true for Conor and his colleagues.

Today OPW operates web-based energy monitoring equipment in each of the State's larger public buildings. The system monitors and records both electrical and heating fuel consumption and the data is accessible from a dedicated web site. This is an important factor for assessing current energy usage and determining optimum solutions for energy efficiency.

While this type of monitoring technology can lead to the identification of significant energy savings, OPW also

Conor Clarke



recognises that changing people's behaviours can contribute as much, if not more, to energy savings. Hence the massive staff energy awareness campaign currently underway within OPW.

So, what of the downsides? "Of course it is not all plain sailing", says Conor. "There have certainly been problems along the way and, at times it seemed like no progress was being made. However, for the most part we are now in an excellent position to go forward and effect meaningful changes"

This is just as well. With responsibility for something like 1750 separate buildings incorporating 7.5 million sq m, Conor and his colleagues need all the help they can get. Given the stated objective to reduce energy usage by 10% and the carbon footprint by 15% in the current year, this seem a daunting challenge.

Nonetheless, Conor seems unfazed by the prospect. In fact, he appears genuinely excited by it. That is hardly surprising. For someone who was involved more than a decade ago in the first tentative steps taken by OPW to develop meaningful energy management systems, he fully realises the phenomenal progress made to date.

The sophistication of the OPW systems — coupled with the immense experience and knowledge bank of OPW M&E personnel — is an invaluable resource. Let's hope the private sector has the savvy to tap into it.



# Design/Installation Guidance re Boilers & Part L of New Building Regulations

"Technical Guidance Document Dwellings" is a Government-sponsored publication which provides guidance in relation to the application of Part L of the Second Schedule to the Regulations as inserted by Building Regulations (Amendment) Regulations 2007 (SI No: 854 of 2007). The guidance in this document applies to dwellings, both new and existing. The guidance in relation to the application of Part L contained in Technical Guidance Document L — Conservation of Fuel and Energy (May 2006 Edition), continues to apply to all other new and existing buildings.

It should be read in conjunction with the Building Regulations 1997-2007 and other documents published under these Regulations. In general, Building Regulations apply to the construction of new buildings and to extensions and material alterations to existing buildings. In addition, certain parts of the Regulations, including Part L, apply to existing buildings where a material change of use takes place.

## Transitional Arrangements

In general, this document applies to works to new dwellings, where the work commences or takes place, as the case may be, on or after 1 July 2008. Insofar as the guidance contained therein relates to dwellings, Technical Guidance Document L — Conservation of Fuel and Energy (2006 Edition), ceases to have effect from 1 July 2008.

However, the foregoing document may continue to be used in the case of dwellings where — the work, material alteration or the

change of use commences or takes place, as the case may be, on or before 30 June 2008, or where planning approval or permission has been applied for on or before 30 June 2008, and substantial work has been completed by 1 July 2009.

Where the works involve the installation of oil or gas fired boilers in either a new or existing dwelling, the relevant aspects of this guidance applies to works undertaken after the 31 March 2008. "Substantial work has been completed" means that the structure of the external walls has been erected.

## Conservation of Fuel and Energy

The requirements regarding conservation of fuel and energy for dwellings are laid out in Part L of the Second Schedule to the Building Regulations 1997 (S.I. No. 497 of 1997) as amended by the Building Regulations (Amendment) Regulations 2007 (S.I. No. 854 of 2007). The Second Schedule, insofar as it relates to works relating to dwellings, is amended to read as follows:

- L1** A dwelling shall be designed and constructed so as to ensure that the energy performance of the building is such as to limit the amount of energy required for the operation of the dwelling and the amount of CO<sub>2</sub> emissions associated with this energy use insofar as is reasonably practicable.
- L2** For new dwellings, the requirement of L1 shall be met by:—
- (a) providing that the energy performance of the dwelling is

such as to limit the calculated primary energy consumption and related CO<sub>2</sub> emissions insofar as is reasonably practicable, when both energy consumption and CO<sub>2</sub> emissions are calculated using the Dwelling Energy Assessment Procedure (DEAP) published by Sustainable Energy Ireland;

- (b) providing that, for new dwellings, a reasonable proportion of the energy consumption to meet the energy performance of a dwelling is provided by renewable energy sources;
- (c) limiting heat loss and, where appropriate, availing of heat gain through the fabric of the building;
- (d) providing and commissioning energy efficient space and water heating systems with efficient heat sources and effective controls;
- (e) providing that all oil and gas fired boilers shall meet a minimum seasonal net efficiency of 86%;
- (f) providing to the dwelling owner sufficient information about the building, the fixed building services and their maintenance requirements so that the building can be operated in such a manner as to use no more fuel and energy than is reasonable
- L3** All oil and gas fired boilers installed as replacements in existing dwellings shall meet a minimum seasonal net



# You can rely on the Potterton Promax HE Range



## Promax HE Store

Three floor standing models to suit a range of domestic applications (24kW 90L, 115L & 150L)

Fully pumped sealed systems, removing the need for tanks

Unique roller system and low lift weight

Unique cold water inlet spreader tee to ensure operation on a hot water priority system



## Promax System HE Plus

Five wall-mounted models (12kW, 15kW, 18kW, 24kW & 30kW) all fitted with fully modulating low NO<sub>x</sub> Class 5 Burner System

Versatile siting flexibility with flue lengths up to 20m

Pre plumbing wall jig to simplify installation

Fully automatic system bypass fitted as standard



## Promax SL

Five wall-mounted slim-line models to suit a range of domestic applications (12kW, 15kW, 18kW, 24kW & 30kW)

Versatile siting flexibility with flue lengths up to 7.5m

Fully modulating low NO<sub>x</sub> Class 5 burner systems

Light weight model with compact dimensions for easy siting



## Promax FSB 30 HE

One competitively priced model, fully modulating from 9.3kW to 30.2kW

Versatile siting flexibility with flue lengths up to 7.5m

Integral condensate pump fitted as standard allowing for easy replacement

Small installation footprint will fit under a standard kitchen worktop



## Promax Combi HE Plus

24kW, 28kW & 33kW models with fully modulating low NO<sub>x</sub> class 5 burner systems

Versatile siting flexibility with flue lengths up to 20m

No compartment ventilation required

Removes hot water storage requirement

In built boiler frost protection and 24 hour pump exercise programme



## Promax HE Plus

Three wall mounted models from 15kW to 30kW to suit a wide range of applications

Versatile siting flexibility with flue lengths up to 25m

No compartment ventilation required

Compact dimensions with a low lift weight



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# Design/Installation Guidance re Boilers & Part L of New Building Regulations

efficiency of 86% where practicable.

## 1.4: BUILDING SERVICES

### 1.4.1 General

**1.4.1.1** Regulation L2 (d) requires that space and water heating systems in dwellings be energy efficient, with efficient heat sources and effective controls. More specifically Regulation L2 (e) provides that oil or gas fired boilers must achieve a minimum seasonal net efficiency of 86%. This Section gives guidance for dwellings where the main space and water heating is based on pumped low temperature hot water systems, utilising radiators for space heating and incorporating a hot water cylinder for the storage of domestic hot water, and the fuel used is natural gas, LPG or oil. Guidance is given on three main issues:

- (a) Heating appliance efficiency (Sub-section 1.4.2),
- (b) Space Heating and Hot Water Supply System Controls (Sub-section 1.4.3), and
- (c) Insulation of Hot Water Storage Vessels, Pipes and Ducts (Sub-section 1.4.4).

Detailed guidance for dwellings using a wide range of space and water heating systems is contained in a supporting document *"Heating and Domestic Hot Water Systems for dwellings – Achieving compliance with Part L"* (to be published).

**1.4.1.2** This Section also contains guidance in relation to the energy efficiency aspects of mechanical ventilation systems, where provided (Sub-section 1.4.5).

### 1.4.2 HEATING APPLIANCE EFFICIENCY

**1.4.2.1** The appliance or appliances provided to service space heating and hot water systems should be as efficient in use as reasonably practicable. For fully pumped hot water based central heating systems utilising oil or gas, the boiler seasonal efficiency should be not less than 86% as specified in the DEAP manual and the associated Home-heating Appliance Register of Performance (HARP) database maintained by SEI ([www.sei.ie/harp](http://www.sei.ie/harp)).

### 1.4.3 SPACE HEATING AND HOT WATER SUPPLY SYSTEM CONTROLS

**1.4.3.1** Space and water heating systems should be effectively controlled so as to ensure the efficient use of energy by limiting the provision of heat energy use to that required to satisfy user requirements, insofar as reasonably practicable. The aim should be to provide the following minimum level of control:

- automatic control of space heating on basis of room temperature;
- automatic control of heat input to stored hot water on basis of stored water temperature;
- separate and independent automatic time control of space heating and hot water;
- shut down of boiler or other heat source when there is no demand for either space or water heating from that source.

The guidance in Paragraphs **1.4.3.2** to **1.4.3.5** below is specifically applicable to fully pumped hot water based central heating systems.

**1.4.3.2** Provision should be made to control heat input on the basis of temperature within the heated space, e.g. by the use of room thermostats, thermostatic radiator valves, or other equivalent form of sensing device. For larger dwellings independent temperature control should generally be provided for separate zones that normally operate at different temperatures, e.g. living and sleeping zones. Thermostats should be located in a position representative of the temperature in the area being controlled and which is not unduly influenced by draughts, direct sunlight or other factors which would directly affect performance. Depending on the design and layout of the dwelling, control on the basis of a single zone will generally be satisfactory for smaller dwellings.

For larger dwellings, e.g. where floor area exceeds 10 sqm, independent temperature control on the basis of two independent zones will generally be appropriate. In certain cases additional zone control may be desirable, e.g. zones which experience significant solar or other energy inputs may be controlled separately from zones not experiencing such inputs.

**1.4.3.3** Hot water storage vessels should be fitted with thermostatic control that shuts off the supply of heat when the desired storage temperature is reached.

**1.4.3.4** Separate and independent time control for space heating and for heating of stored water should be provided. Independent time control of space heating zones may be appropriate where



# BOILER HEATING INNOVATION FROM ALPHA THERM



Alpha condensing boiler  
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Tel: 01 610 9275 Fax: 01 621 2939

email: [info@uni-therm.net](mailto:info@uni-therm.net)

web: [www.alpha-boilers.com](http://www.alpha-boilers.com)

**Alpha**  
BOILERS



# Design/Installation Guidance re Boilers & Part L of New Building Regulations

independent temperature control applies, but is not generally necessary.

**1.4.3.5** The operation of controls should be such that the boiler is switched off when no heat is required for either space or water heating. Systems controlled by thermostatic radiator valves should be fitted with flow control or other equivalent device to ensure boiler switch off.

## 1.4.4 INSULATION OF HOT WATER STORAGE VESSELS, PIPES AND DUCTS

**1.4.4.1** All hot water storage vessels, pipes and ducts associated with the provision of heating and hot water in a dwelling should be insulated to prevent heat loss except for hot water pipes and ducts within the normally heated area of the dwelling that contribute to the heat requirement of the dwelling. Pipes and ducts which are incorporated into wall, floor or roof construction should be insulated.

**1.4.4.2** Adequate insulation of hot water storage vessels can be achieved by the use of a storage vessel with factory-applied insulation of such characteristics that, when tested on a 120 litre cylinder complying with I.S. 161: 1975 using the method specified in BS1566, Part 1: 2002, Appendix B, standing heat losses are restricted to 0.8 W/litre. Use of a storage vessel with 50mm, factory-applied coating of PU-foam having zero ozone depletion potential and a minimum density of 30 kg/m<sup>3</sup> satisfies this criterion. Alternative insulation measures giving equivalent performance may also be used.

**1.4.4.3** Unless the heat loss from a pipe or duct carrying hot water

**Minimum Performance Levels for Mechanical Ventilation Systems**

System Type	Performance
Specific fan power (SFP) for continuous supply only and continuous extract only	0.8 W/litre/sec
SFP for balanced Systems	2.0 W/litre/sec
SFP for balanced Systems	66%

Table 3

contributes to the useful heat requirement of a room or space, the pipe or duct should be insulated. The following levels of insulation should suffice:

- (a) pipe or duct insulation meeting the recommendations of BS 5422: 2001 *Methods of specifying thermal insulating materials for pipes, ductwork and equipment (in the temperature range -400°C to +700°C)*, or
- (b) insulation with material of such thickness as gives an equivalent reduction in heat loss as that achieved using material having a thermal conductivity at 400°C of 0.035 W/mK and a thickness equal to the outside diameter of the pipe, for pipes up to 40mm diameter, and a thickness of 40mm for larger pipes.

**1.4.4.4** The hot pipes connected to hot water storage vessels, including the vent pipe and the primary flow and return to the heat exchanger, where fitted, should be insulated, to the standard outlined in Paragraph 1.4.4.3 above, for at least one metre from their point of connection.

**1.4.4.5** It should be noted that

water pipes and storage vessels in unheated areas will generally need to be insulated for the purpose of protection against freezing. Guidance on suitable protection measures is given in Report BR 262, *Thermal insulation: avoiding risks* published by BRE.

## 1.4.5 MECHANICAL VENTILATION SYSTEMS

**1.4.5.1** Guidance on good practice with regard to energy efficiency of dwelling ventilation systems is contained in GPG 268 *Energy efficient ventilation in dwellings – a guide for specifiers*, available from SEI.

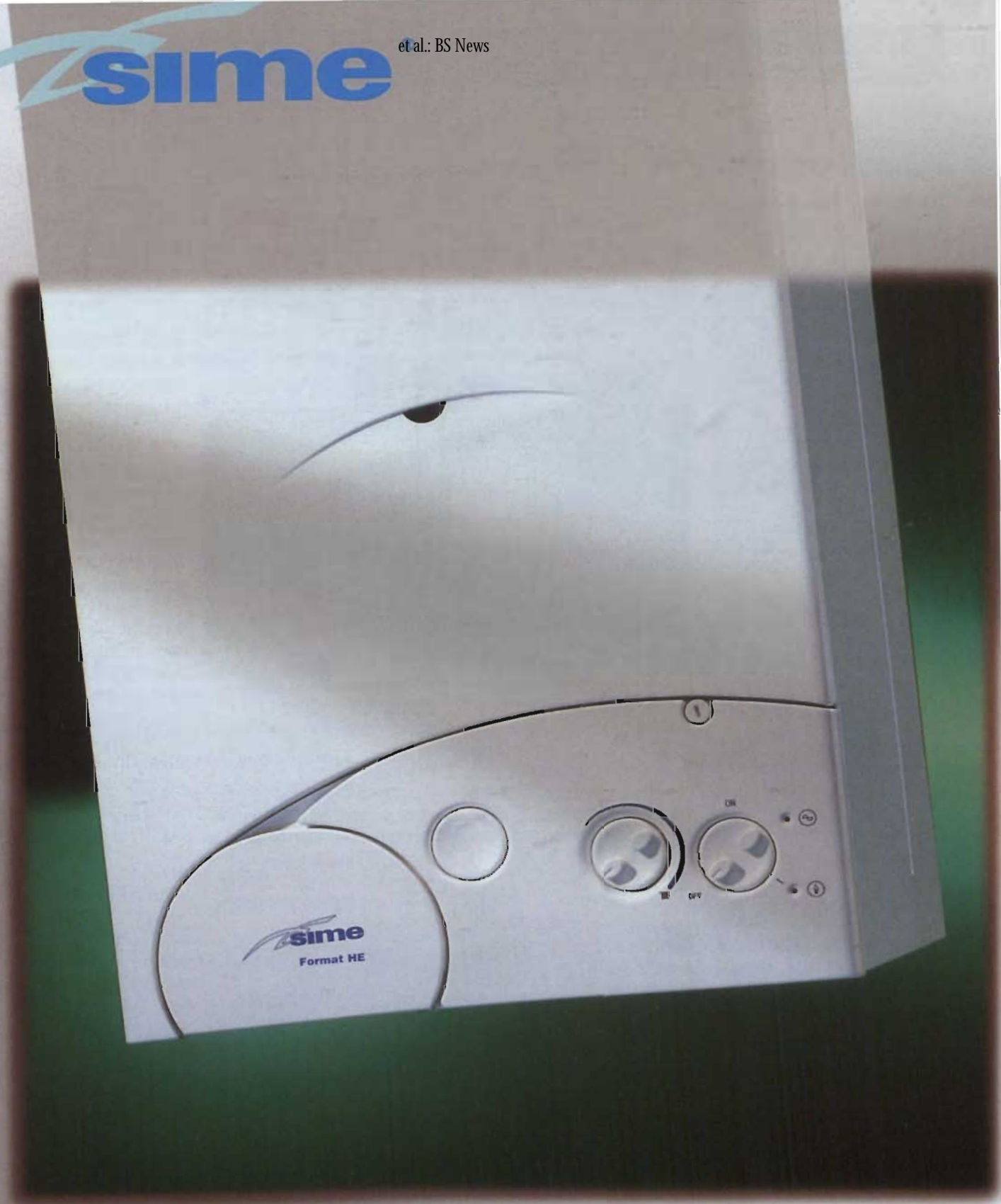
**1.4.5.2** Where a mechanical ventilation system designed for continuous operation (with or without heat recovery) is installed for the provision of ventilation to a dwelling or significant part thereof, the system should meet the performance levels specified in GPG 268 and also have specific fan power and heat recovery efficiency (where appropriate) not worse than those given in Table 3.

Significantly better standards in relation to air permeability than those specified in Paragraph 1.3.4.3 are desirable in dwellings with mechanical ventilation, especially ventilation systems with heat recovery. Table 3 does not apply to fans installed for intermittent use in individual rooms.



The Sime logo consists of a stylized blue wave graphic to the left of the word "sime" in a bold, lowercase, sans-serif font.

et al.: BS News



# Format 25 HE

## Compact Condensing Boiler



**Hevac Limited**

**SEDBUK A Rated**

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## Domestic Boilers

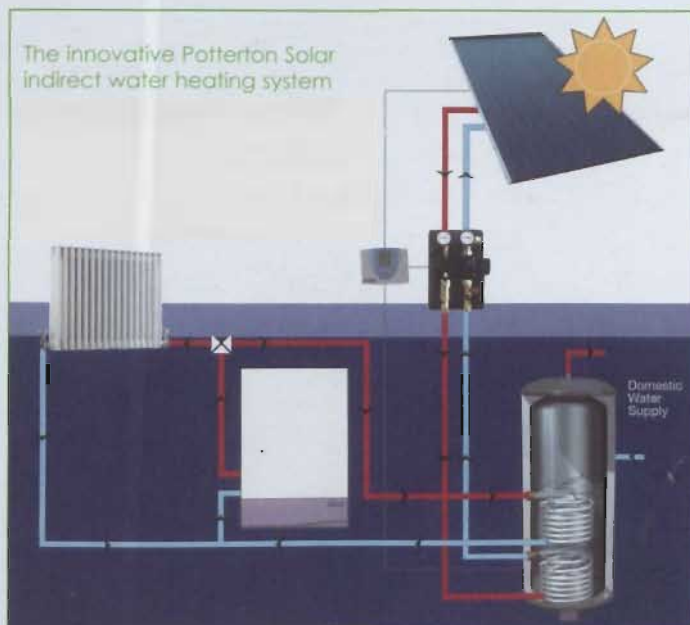
### You Can Rely on Potterton Myson

For over 150 years the Potterton name is synonymous with top-quality, high-specification products. All benefit from world-class manufacturing skills, are easy to install, reliable in service, and comply with all existing and pending regulations. They are also renowned for their innovative features and pioneering design concepts. The new Potterton Solar water heating system is a typical example.

With Potterton Solar water is heated in an indirect way via a ready-mixed water and glycol solution which circulates inside a pipe network between the solar panel and the cylinder coil. As the solar energy is absorbed by the panel, the fluid heats up and is transferred to the cylinder, heating the water via the dedicated solar cylinder coil. On leaving the coil, the cooler fluid makes its way back up to the solar panel where the loop process starts again.

Guaranteed for 10 years, the Potterton Solar system incorporates a contractor-friendly design which, along with the dedicated training programme, ensures simple, trouble-free, installation.

Similar innovative new product types will come on stream over the coming weeks and months. These will



include the Performa SL range which is a new collection of heat-only boilers. This model is specifically designed for installation on older systems where cast iron heat exchangers have traditionally proved more tolerant to system debris.

Meanwhile, established market-leading models continue to be available. These include:—

#### Promax System HE Plus

Fully modulating high-efficiency heating and hot water boilers with outputs ranging from 6.8kW to 32kW. Incorporating a separate hot water cylinder, the units have built-in frost protection and flues that can be fitted almost anywhere.

#### Promax Combi HE Plus

This compact, wall-mounted boiler is available in two models with fully modulating outputs from 8.7kW to

33kW. Includes built-in frost protection, wireless thermostats and automatic pump.

#### Promax HE Plus

Deceptively small but very powerful, there are three wall-mounted models in this range of heating-only boilers with modulating outputs from 9.14kW to 30kW.

#### Promax FSB 30 HE

High-efficiency, floor-standing range of modulating boilers designed to fit under standard worktop. Outputs go from 9.3kW to 30.2kW and the units are suitable for fully-pumped, open or sealed systems.

#### Potterton Suprema HE

The Suprema HE range low lift weight, compact boilers is available in six outputs — from 30,000 Btu/h to 80,000 Btu/h.

#### Potterton System SE

This range comprises four gas fired, wall-mounted standard efficiency

natural gas and LPG system boilers combining elegant design with sophisticated electronic monitoring and controls.

#### Potterton Suprema SE

A limited range of cast iron, standard efficiency, boilers will continue to be available from stock.

#### Potterton Commercial

The Potterton Commercial range (outputs from 40kW to 2500kW) includes high-efficiency floor and wall mounted models, including the new Sirius wall-hung unit (outputs from 50kW to 110kW).

Meanwhile, the jacket and iPod promotion in relation to the Promax HE boiler range continues and will now run up to 30 April 2008.

Vincent Broderick, Potterton Myson Ireland says: "As we move to the era of high-efficiency boilers, installers need to be aware of the requirements in order to maximise the efficiency which customers will expect. To that end our annual training programme for installers — which is run at our purpose-designed Training Centre in Belgard Road, Dublin 24 — has commenced. Those wishing to sign up should apply for a booking form."

Contact: Potterton Myson.  
Tel: 01 - 459 0870;  
email: post@pottertonmyson.ie



# Domestic Boilers

## Choose Sime Format HE and Comply with the new Part L

In addition to boasting high-efficiency and a SEDBUK A rating, the new "Format HE" range of gas condensing/combi boilers from Hevac are 20% smaller than previous models and are probably the most compact models available on the market. The range also incorporates Sime's unique Aquaguard filter system.

Format HE is a room-sealed, fanned-flue, premix condensing gas boiler. It combines high efficiency performance ("4 stars" according to the Efficiency Directive CE 92/42) in a compact boiler that offers ease of use and installation with the best reliability. Advanced microprocessor technology allows for efficient control and management of all functions.

At the heart of the Format HE boiler is a combustion system that ensures the highest efficiency by extracting the most heat possible from the burnt gas. The main heat exchanger is manufactured from

stainless steel so that it will resist the corrosive action of the condensation that is produced. Its cylindrical shape ensures that the best possible heat exchange takes place as well as collecting the condensate liquid.

The pre-mix burner, also in stainless steel, is cylindrical and positioned radially in the combustion chamber. Its micro-flame feature allows for a lower operating surface temperature which reduces significantly the amount of polluting emissions. In fact,

Format HE is Band A SEDBUK rated at over 90% seasonal efficiency with NOx emissions exceeding all European standards (Class 5 reference EN 483).

The range features two wall-mounted models — Format System 25 HE and Format 30 HE. Measuring just 400mm x 335mm x 700mm, these boilers achieve heat outputs of up to 29.8kW and offer impressive efficiencies of over 90%, thereby ensuring low running costs.

In addition, Sime will shortly introduce the Murelle range of SEDBUK A condensing

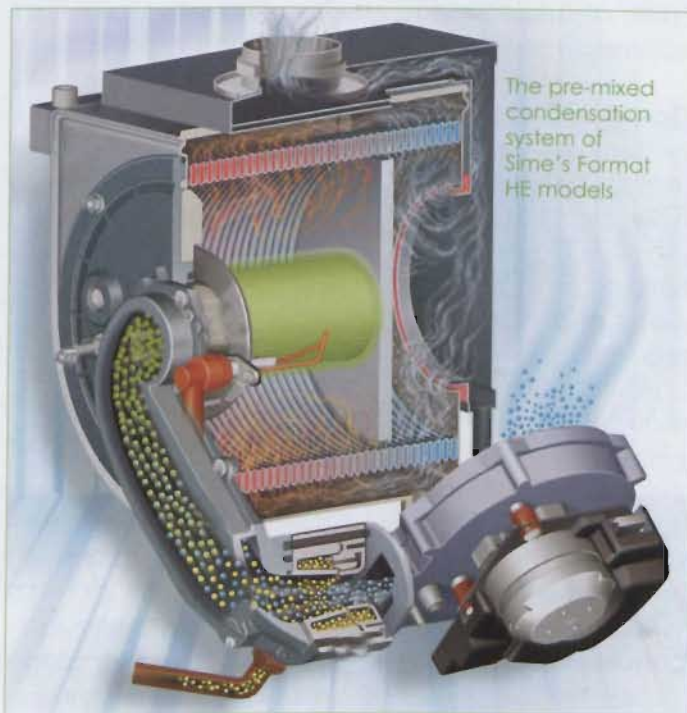


The Format HE compact condensing boiler

system boilers in five individual boiler outputs, with capacities ranging from 12kW to 35kW, to complement the Format HE series.

Maximum siting flexibility is assured as all models are capable of many flue options, including vertical and twin-flue installation. For simplicity of operation they also incorporate easy-to-use controls with a series of LED lights to assist with fault finding. An optional plug-in time clock is also available.

Contact: Paul Newman / Garrett White, Hevac.  
Tel: 01 - 419 1919;  
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## Domestic Boilers

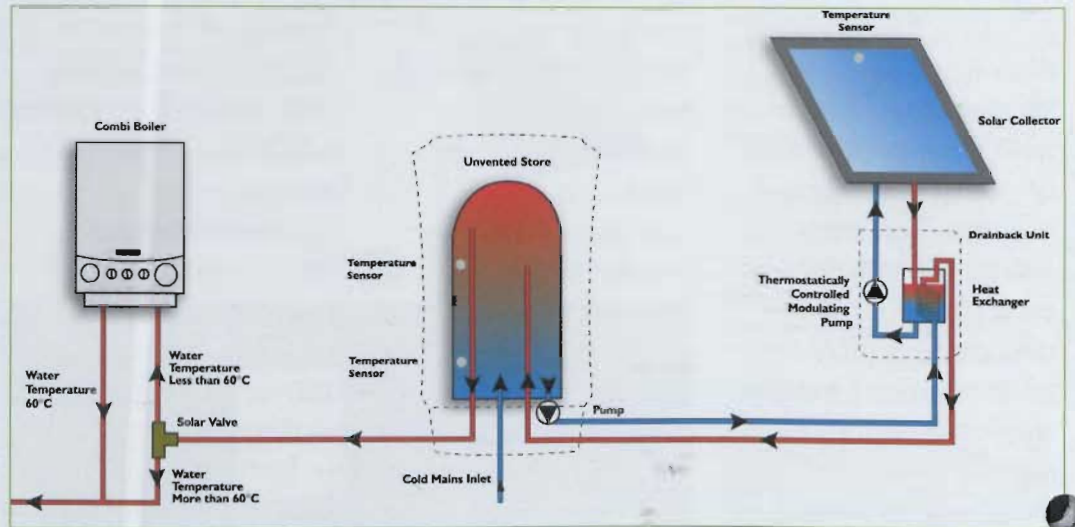
### Alpha Gives Lead in Energy-Efficiency

When it comes to boiler technology, the name "Alpha" signifies quality, energy-efficiency and reliability to heating installers. Manufactured by Immergas, one of Italy's largest boiler manufacturers, the Alpha brand has maintained a strong position at the forefront of technology and innovation thanks to a considerable investment and commitment to research and development.

Alpha Boilers operates a total quality system at manufacture, certified to ISO 9001:2000 standards. This also results in every model in the Alpha high-efficiency boiler range complying fully with the requirements of the new Building Regulations, Part L.

Alpha Boilers offer a complete range of high efficiency (SEDBUK A) and standard efficiency modulating gas boilers with outputs up to 35kW on condensing combi boilers; 75kW on condensing system boilers; and 28kW on standard efficiency boilers. There is also a combination boiler with 60ltr of storage capacity. All boilers are available in natural gas and LPG.

Alpha CD range of condensing/high



The SolarSmart system is compatible to most models in the Alpha range of condensing boilers.

efficiency boilers emit reduced levels of carbon dioxide and NOx, using the waste heat that is usually lost into the atmosphere to heat water within the system creating a wholly more efficient boiler.

Alpha also offers extra low carbon solutions by way of its unique Gas Saver and SolarSmart systems.

**GasSaver** is an innovative "top box" that fits between the boiler and the flue. It re-uses flue gases to pre-heat incoming cold water and therefore reduces gas consumption. It also reduces instances of plumbing as gases exiting the flue terminal are significantly cooler. In addition, all GasSaver models are approved by WRAS for use with Alpha condensing boilers.

The **SolarSmart** system is

applicable to most of the Alpha range of condensing boilers. Especially working alongside the CD Combi, it can supply large volumes of hot water, on demand, even during winter months. The solar panel collects energy from the sun in the form of solar radiation. This is transferred to water that is pumped into the drainback unit. The water heats a copper coil (or heat exchanger) through which water is fed into the unvented cylinder.

Up to 90ltr of stored water can be fed direct to the tap if it is hot enough – ie 60°C plus.

When the stored water is pre-heated, but not up to 60°C, the solar valve diverts it via the combination boiler where it is heated to the required temperature. There are no

complicated controls, so the installation is straightforward and the end user can get maximum benefit from the system without having to adjust any settings or programme a timer. SolarSmart is also grant-approved by SEI on the Greener Homes Scheme.

The Alpha range of products is distributed throughout Ireland, both North and South, by Alpha Therm Ireland Ltd, with offices and warehouse in Dublin and Galway. Alpha offers full technical training to installers and will have its Mobile Training Unit travelling throughout Ireland during 2008.

Contact: Alpha Therm Ireland.  
Dublin: Declan Kissane.  
Tel: 01 - 610 9275;  
Galway: Peter Lynskey.  
Tel: 091 - 380 038;  
email: info@uni-therm.net



## Domestic Boilers

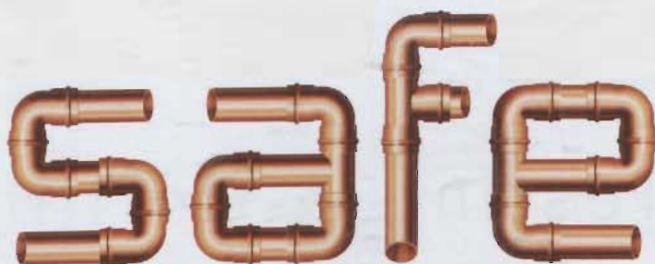
# 'Copper — The World's Most Trusted Plumbing Material'

"Whether the application is a high-quality tower block or a one-family house, both consultants and contractors alike need the peace of mind that comes from specifying and installing the world's most trusted plumbing material — copper plumbing and heating tube", says Conor Lennon of IMI.

Copper tube and fittings are manufactured to recognised international quality standards with over 600,000 tonnes sold annually throughout the world. Copper plumbing and heating systems have a long and proven track record of trouble-free operation, as well as providing an attractive, professional, finish.

Copper's rigidity allows it to be installed vertically or horizontally without sagging, using the minimum of clips, while its low coefficient of expansion means pipes do not sag when hot water passes through. It also has a relatively high water-carrying capacity — for given flow rates, smaller diameter pipework can be used than with many other materials.

Because copper systems are durable and resist



damage, they are largely maintenance-free and do not require replacement, thus minimising the whole-life system costs of a building. They can withstand high working pressures and thus, in most applications, offer a high safety factor.

Copper maintains its physical and mechanical properties over a wide range of operating temperatures (-40°C to 205°C). It is naturally inert and remains unaffected when exposed to long periods of direct sunlight. It has excellent corrosion resistance to most waters and gases and is also resistant to knocks from external sources.

Copper is extremely versatile with both tube and fittings suitable for water and gas services. It can be used in most parts of a plumbing or heating system with specially-cleaned copper tube and fittings available for medical gas, oxygen and vacuum lines.

Modern press and push-fit copper systems are available to meet the growing requirement for flame-free installation. These speed up installation, thereby minimising costs and helping to reduce project time. They also make for neat and efficient application, especially in limited spaces.

A significant and very important benefit of using copper is that it helps keep the water supply safe. As a bactericide, copper can consistently suppress bacterial growth such as E.coli. It also plays an important role in the fight against legionellae as the bacterium legionella pneumophila, which causes Legionnaires Disease, is particularly vulnerable to copper. It is non-porous and does not allow contaminants to penetrate the tube wall, keeps out oxygen which can corrode boilers or radiators, and is not susceptible to attack from rodents.

Copper's fire-resistant qualities are exemplary while, even in the event of a fire, it does not generate toxic fumes or lose its physical and mechanical properties. In fact, copper is now approved more and more for use in sprinkler systems.

Copper's ecological properties are also exceptional. As much as 90% of copper and brass scrap is recycled while, at the end of a building's life, virtually all of it can be reclaimed.

Contact: Conor Lennon, IMI.

Tel: 01 - 295 2344;  
email: conor.lennon@irishmetalindustries.com



Laboratory tests at Southampton University have established that the natural antimicrobial properties of copper and copper alloys dramatically reduce the presence of MRSA compared with stainless steel





**Keith Sunderland,**  
**School of Electrical**  
**Engineering Systems,**  
**DIT Kevin Street.**



email: keith.sunderland@dit.ie

## In-Depth Testing & Certification

Last month's article identified the series of electrical tests that an installation must undergo in order to ensure that it is compliant with the current standards. In this final part of the series I take the subject a little further and look at some of the tests in a more in-depth fashion. But, before I begin, let me assure readers — and those who oversee test compliance — that what follows is not meant to confer on anybody the competence needed to carry out such testing.

I referred previously (*bs news*, February 2008) to the two stages in the testing process — testing before the final connection to the supply is made and the testing that takes place subsequent to the final connection.

### Before Connection of the Supply

1. Continuity of protective conductors and bonding conductors.
2. Insulation resistance of cables and insulated wires.
3. Polarity verification and test

### With the Supply Connected

4. Fault loop impedance tests.
5. Verification of operation of residual current devices.

### Pre-connection Tests

*Continuity of protective conductors and bonding conductors*

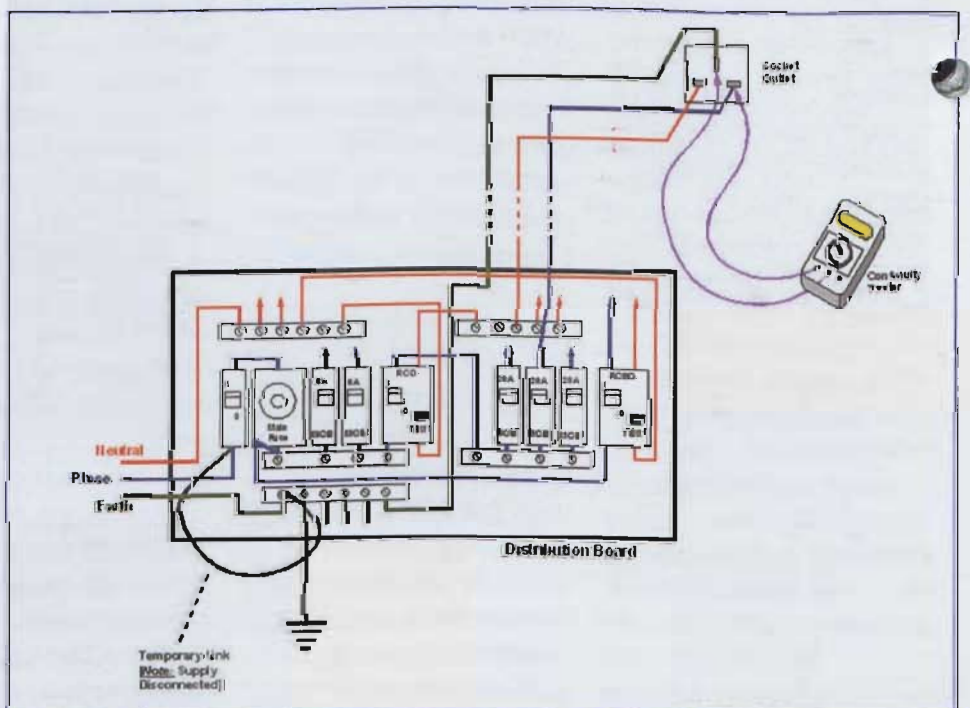
The purpose of this test is to ensure that the protective conductor and bonding system is properly connected and continuous throughout its length. It checks that all items of equipment and accessories are properly connected to the protective conductors and that all bonding clamps are making good contact. It is recommended that a low-current dc ohmmeter (continuity tester) is used to carry out the test. If a multi-meter is used then the resistance range of the instrument should be in the range:  $0 \Omega < (\text{conductor resistance}) < 1 \Omega$

**Figures 1 and 2** show how this test is carried out for typical socket

outlet circuits, whether of the radial or ring type. In the case of ring circuits it is necessary to verify that the circuits are correctly wired and connected, that they are continuous, and that conductors are not bridged.

### Insulation resistance measurement

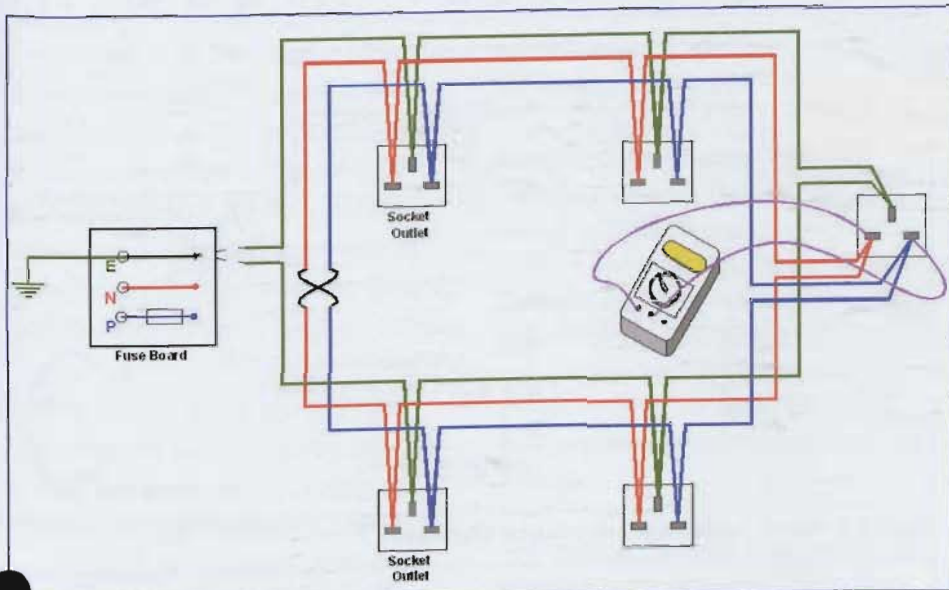
The quality of insulation resistance is vital if an installation is to function correctly. The insulation resistance tests are performed to verify that there are no short-circuits between the current carrying conductors or between live conductors and earth. They also confirm that there is no degradation in insulation resistance due to damage or dampness. The tests involved include:—



**Figure 1: Continuity (resistance) of the protective conductor**



# In-Depth Testing & Certification



**Figure 2: Continuity of conductors in ring-final circuits**

- Insulation resistance between all live conductors connected together and the protective conductor;
- Insulation resistance between live conductors.

Lighting circuits incorporating two-way and intermediate switching require special treatment to take cognisance of the strapper wires between switches.

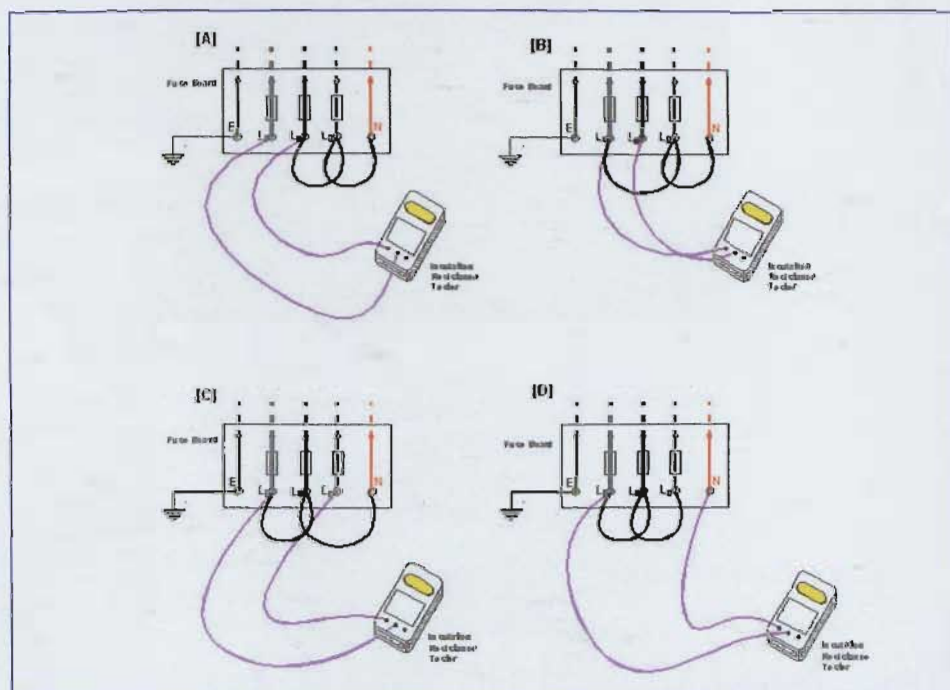
The following precautions must be observed prior to the insulation resistance test:—

- Remove all lamps, tubes, pilot lights, capacitors and any electronic devices in the circuit that may be damaged by the high test voltage;
- Disconnect all fixed equipment. If this is not possible, local isolators and switches must be kept open;
- Where electronic devices cannot be easily disconnected, the phase and neutral connectors must be connected together at the device, to enable the test to earth to be made;
- Ensure that all fuses are in place and that switches and circuit breakers are closed.

Table 61A of the ETCI Rules stipulates the minimum acceptable values of insulation resistance between each live conductor and the protective conductors. Installations with a nominal supply voltage of up to 500V should have a value in excess of 0.5 MΩ when a test voltage of

$$\frac{1}{R_{Total}} = \frac{1}{R_{Circuit 1}} + \frac{1}{R_{Circuit 2}} + \frac{1}{R_{Circuit 3}} + \frac{1}{R_{Circuit 4}} + \frac{1}{R_{Circuit 5}} + \dots + \frac{1}{R_{Circuit 'n'}}$$

**Table 1: The cable insulation of the circuits under test can be considered as resistors in parallel**



**Figure 3: Logistics in installation resistance testing**

500V (dc) is applied.

When measuring a large number of circuits simultaneously, care must be taken that a falsely-pessimistic value, below the accepted minimum, is not obtained.

The cable insulation of the circuits under test can be considered as resistors in parallel. The upshot of this is that the overall resistance will always be less than the lowest individual value (see Table 1).

In such instances, circuits should be grouped into sections with each section measured separately.

It is necessary also to ensure that cables that may become charged during the insulation resistance test are given time to discharge before the test instrument is disconnected.



# In-Depth Testing & Certification

## Polarity Test

An essential component of the test procedure is to verify that all fuses, single pole switches and protective devices are connected to the phase conductors only, and that the centre contact of screw-type lampholders is connected to the phase conductor with outer or screwed contacts connected to the neutral conductor. Furthermore, the wiring to socket outlets and similar accessories must be checked to see that it is correctly connected.

The Rules subdivides the types of circuits into the categories shown below. In the case of radial and ring socket circuits, the continuity will have been established as alluded to above.

### Radial Circuits

This entails a repetition of the continuity tests with the phase and protective conductors bridged together at the distribution board and the test taken between phase and protective conductor at various outlets.

### Ring Circuits

The polarity of the phase, neutral and protective conductors of these circuits is verified as part of the continuity test.

### Lighting Circuits

These circuits require the connection together of the phase and earth terminals at the fuseboard. With this in place the test checks that single-pole switches and the centre-contact of Edison-Screw lampholders are connected in the phase conductor.

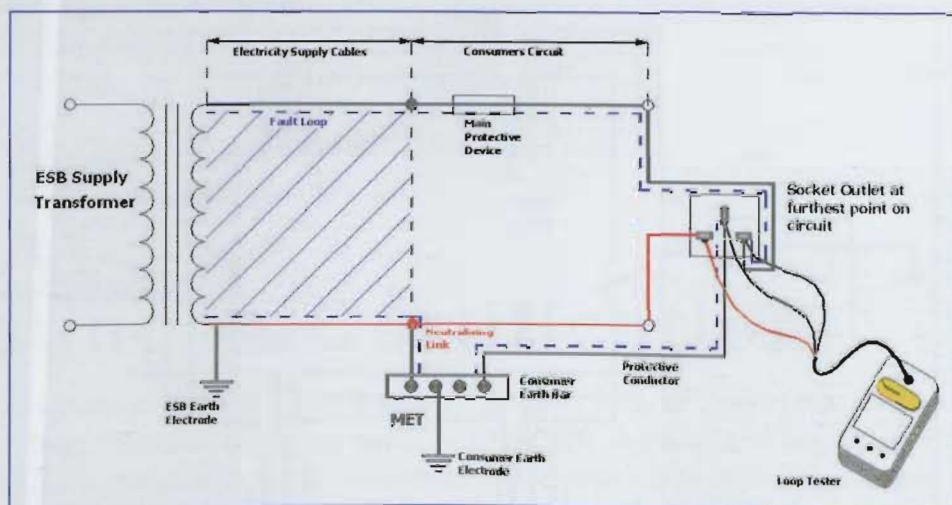


Figure 4: Earth fault loop impedance ( $Z_L$ ) Test

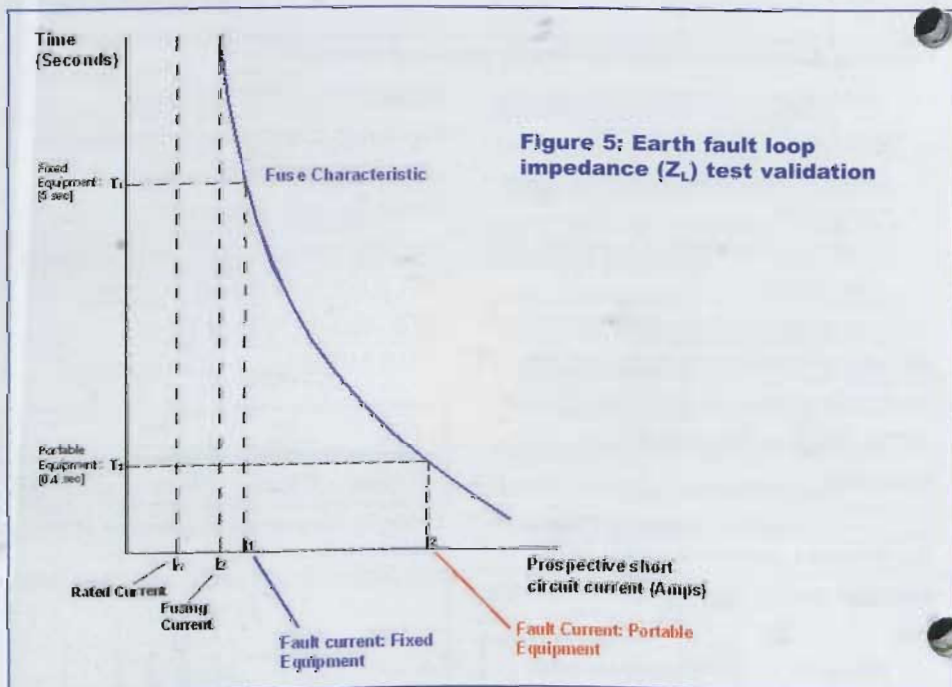


Figure 5: Earth fault loop impedance ( $Z_L$ ) test validation

### Three-Phase Circuits

Three-phase circuits can be tested by connecting each phase to earth separately at the distribution board and then testing between the phase and earth at the isolator or on the terminals of equipment.

### Post-connection Tests

Once the connection to the supply is complete (post verification and pre-connection testing stages) the following tests are undertaken to confirm the satisfactory application of

the required shock risk protection measures. This is basically a two-part process.

### Earth Fault Loop Impedance ( $Z_L$ ) Test

This test (see Figures 4 and 5) validates that the protective device installed in a given circuit is in accordance with the value listed in Tables 61C-1 and 61C-2 of the Rules. Conformance indicates that the protective device should operate satisfactorily in the event of a fault. The fault loop impedance is measured at the furthest point of



# In-Depth Testing & Certification

each circuit and the measured value is compared with the value in the relevant table. If the measured value exceeds tabulated value, then the protective device will not operate within the permitted disconnection times of 0.4sec (portable equipment) and 5sec (fixed equipment).

The continuity of the protective system must be determined prior to this test. A break in the protective system, or high resistance within it, could result in the whole of the protective system being directly connected to the phase conductor for the duration of the test. Proprietary earth loop impedance testers are usually fitted with indicator lamps to

confirm correct connection or to warn off reversed polarity.

### Residual Current Device (RCD) Test

Residual Current Devices (RCDs) afford protection against shock risk under abnormal conditions (indirect contact) and provide supplementary protection against shock risk in normal service (direct contact protection). In addition, they offer safeguards against fire and thermal effects.

The goal of this test is to check the effectiveness of any RCDs in the completed installation. The device operates on the principle that, in the event of an earth fault, a differential will exist between the phase and neutral currents ( $I_{\Delta n}$ ). The device is

sensitive to this differential and will unlatch once a pre-determined threshold is exceeded (**Table 2**).

The range of tests are performed on both the positive and negative half cycles on the basis that its operation is polarity conscious.

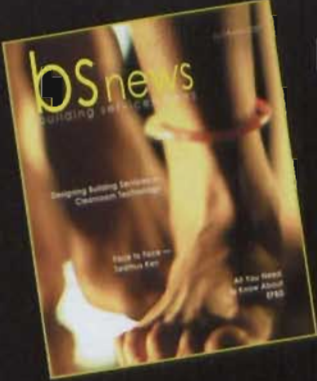
### Summing Up

The foregoing conveys that the tests required for compliance are comprehensive and this demands time and effort if they are to be effected correctly.


Hopefully, this series of articles has put some clarity to the specifics of installation testing and stimulated, and contributed to, the wider debate of compliance.

Test Current	1 x $I_{\Delta n}$	2 x $I_{\Delta n}$	5 x $I_{\Delta n}$
Maximum Operating Times	0.3sec	0.15sec	0.04sec

Table 2: Table 61F (ET101:2006) Standard Operating Times for RCDs, G-Type



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# Plumb Lines

heard it on the grapevine ...

## Is ECO MAN MIKE IN DISGUISE?



To further emphasise its green credentials and to help ZAP, POW and SWAT inefficient and energy-guzzling ac systems, Mitsubishi Electric has enlisted the help of superhero ECO Man.

Making his dramatic appearance with a personalised message for every single *bs news* reader this month, ECO Man aims to go where no superhero has gone before and lead a crusading campaign for sustainable building services design and installation.

Just who the mortal man behind this swashbuckling superhero is remains a mystery. There are rumours galore circulating within the business but sources close to Mike Sheehan vehemently deny that he dons the latex suit and mask when no one is watching!

RACGS is the dedicated golfing society for the refrigeration and air conditioning sector but membership is also open to those involved in related fields.

Additionally, visitors from across the entire building services spectrum are welcome at outings.

See page 2 for the full programme and contact details.

Thanks to reader interest and feedback, a second series of articles is planned. That will now commence in the April issue of *bs news* with an article by Fergus Dunphy, Associate Director PM Group, and Department Manager responsible for the technical output of the mechanical building services department.

the current downturn. Earlier this month they sent me a text inviting me to join a similar scheme but this time to purchase "discounted property from developers and the banks".

Yes, you've guessed it ... one of this year's discounted targets was last year's fail-safe banker!

## KEEP THE COAL FIRES BURNING?

The CO<sub>2</sub> debate took a strange twist earlier this month when it emerged that the British Government is seriously considering a number of new coal-fired power stations. Those in favour of the proposal point to extensive research data which suggests that, far from being a step back into the dark ages, it has some merit.



Essentially, the core of the argument in its favour is not so much that new technology makes it an acceptable option, but rather that it is a cleaner and less damaging option than some of the other proposals currently on the table.

In a way it has highlighted the kernel of the sustainable debate which now seems to have moved to damage limitation and choosing the lesser of two evils in the medium term, as opposed to zealously pursuing the ultimate solution in one go.

## DAMIEN BECOMES A GRANDAD!



Congratulations to Kevin Parlour of Tempar on the birth of his first child, a daughter, who he and his wife Margaret have named Lilyana. Both are doing extremely well, as is the new grandad, Damien!

## RACGS MEANS GOLFING RICHES

This year's RACGS programme has just commenced with an excellent outing at the magnificent PGA National in Palmerstown House. This course is considered the next best thing to the K Club and it has already set the tone for the quality venues lined up for the remainder of the year.

## DESIGNING BUILDING SERVICES TO RETURN

When we concluded the series *Designing Building Services* in the January issue of *bs news* we had an unprecedented reader reaction wishing to know why we dropped it. We didn't ... it was just that the particular topics identified when the series was first conceived had been completed.

## OH HOW THE VULTURES CIRCLE!

Up to six months ago I was regularly approached by so-called investment brokers to buy in to once-in-a-lifetime development opportunities that would give me massive returns on my money.

How ironic then to see these self-same investment advisors now capitalising on



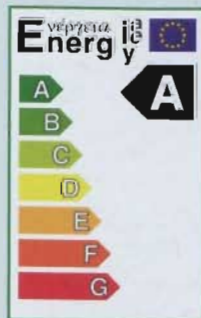
# Best in energy saving.



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.

**WILO**  
*Pumpen Intelligenz.*

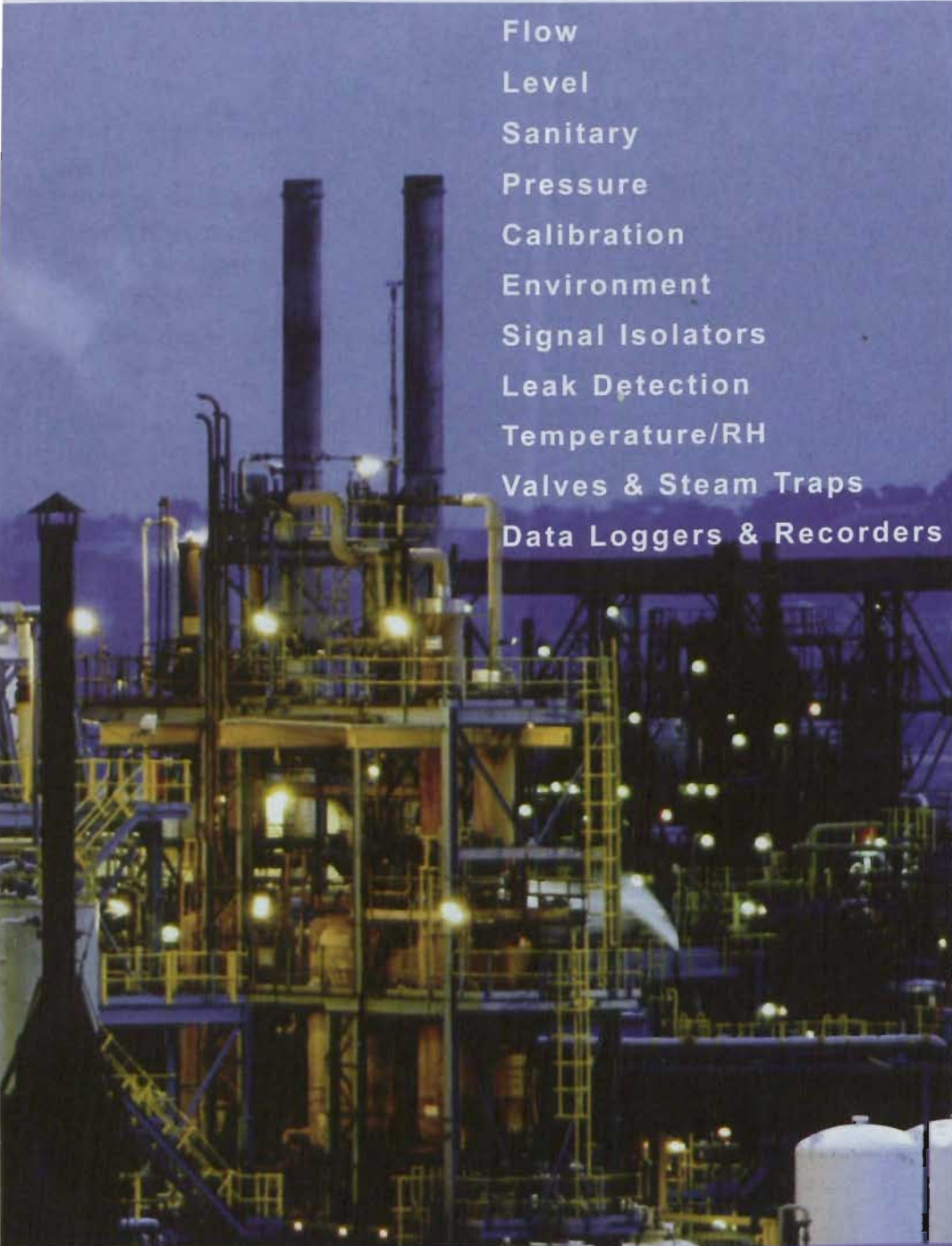


# Fit & Forget

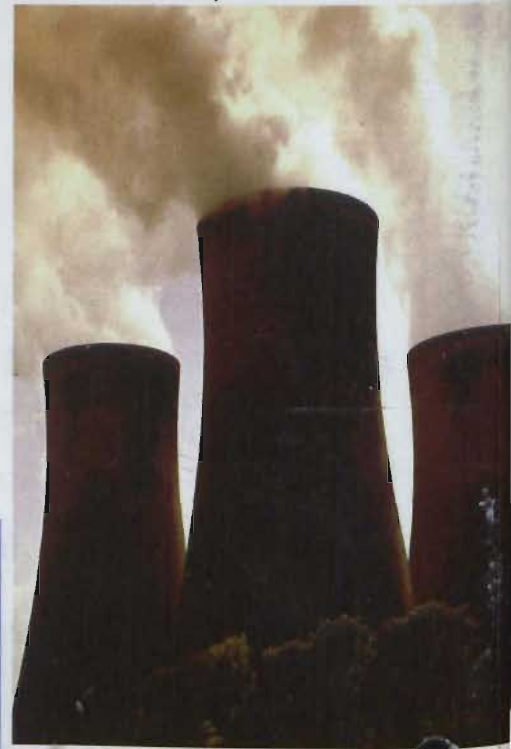
*Building Services News, Vol. 47, Iss. 3 [2008], Art. 1*

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