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### BS News

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# bs news

building services news

***Ireland's First  
A1-Rated Houses***

*Face to Face*  
Kent Peterson, ASHRAE

BE > THINK > INNOVATE >

# Cut energy consumption by 80%

## Choose A-labelled Grundfos circulators\*



Potential savings for ALPHA Pro compared to other domestic appliances:

Circulator pump (D-labelled)	550
Circulator pump (A-labelled)	115
Washing machine (G-labelled)	398
Washing machine (A-labelled)	236
Refrigerator (G-labelled)	305
Refrigerator (A-labelled)	115

Average annual energy consumption in European households in kWh.



### When you want real savings, check the circulators

There is an energy-saving opportunity hidden in heating systems everywhere: The circulator pumps.

Hotels, hospitals, and other commercial buildings can all achieve major savings with A-labelled MAGNA pumps. But even the average European household can realise savings of up to 10% on their annual electricity consumption by upgrading to an A-labelled ALPHA Pro. It runs down to as little as 5 Watt.

Energy savings and reducing CO2 emissions begin with you. Act today. Choose A-labelled Grundfos circulators.

For more, visit [www.energyproject.com](http://www.energyproject.com)

\*In 2005 Europump introduced the European Energy Label to heating circulators, making it easy for consumers to choose the most energy-efficient alternative.

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**UK Office**

Mike Knight  
 Tel: (+44) 07966 196 383  
 email: mike-bsnews@blueyonder.co.uk

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**Advertisement Director:** Joe Warren

**General Manager:** Louise Byrne

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**IN THIS ISSUE**

Trade News & Product Information	2
Designing Building Services	18
Electrical Services Engineering — Student Awards	24
Electrical Services Engineering — LED Lighting	26
Grundfos Gets EMAS Award	29
Face to Face — Kent Peterson, ASHRAE President	32
SEI Energy Awards	38
Wilo Celebrates 135th Anniversary	41
A1 Rated Housing Scheme	42
Radiators & Controls	44
Plan Expo 2007 Review	58
Plumblines	60

opinion

## Yes Be Cautious ... But Not Pessimistic

There is no denying the dramatic fall-off in construction activity, especially in the domestic sector. Housing project starts are negligible while far too many of those completed are standing empty and unsold.

This has had a significant impact on building services. Specialist domestic installers and contractors have been hardest hit and this, in turn, has had repercussions for suppliers. Money is harder to get in with average credit days extending. Unfortunately, there have also been some company closures.

That said, it is important to put the current scenario into context. This slowdown was not just inevitable but was also very well flagged. Everyone within the industry knew it was coming and those running their businesses in a professional and competent manner made the appropriate provisions.

Given the unsustainable high levels of construction activity of recent years cut backs, and even some casualties, were inevitable once the market began to re-adjust. That is now happening. Nor is it limited to the domestic sector. As we go the press there are at least two companies in the commercial sector facing winding up orders.

However, construction as a whole, and building services in particular, is not in crisis. The core industry is strong and stable, the outlook for the commercial sector being particularly strong. The services of both mechanical and electrical consultants are in great demand with quite a few practices unable to find enough qualified staff.

So, while the year-end is a good time to take stock and re-appraise the situation going forward, remember to do so in a cautious but optimistic manner.

## trade news + product information

### worcester takes premier corgi awards

Worcester Bosch Group has been awarded "Boiler of the Year" for the Greenstar CDi range, and "Energy Efficient Product of the Year" for its Greenskies solar thermal panels, in the prestigious 2007 CORGI awards.

Across the various categories votes were cast for appliances that are easy to install, straightforward to commission and service, and offer customers the greatest benefits.

Worcester has also expanded its renewable technologies range to include an 11kW system heat pump, together with four combination ground source heat pumps and two new Greenstore cylinders.

The 11kw System model joins the existing Greenstore 6 System, 7 System and 9 System ground source heat pumps while the combination models — which are also available in 6kW, 7kW, 9kW and 11kW outputs — were introduced for applications where a separate cylinder for hot water storage cannot be accommodated.

The Greenstore Cylinder Series is available for installation with any of the system models available in the range. Available in two sizes — 180 Cylinder and 280 Cylinder — both feature a tank-in-tank design to achieve the larger surface area required for heat pumps and include a secondary heat source coil, making them compatible with Worcester's Greenskies solar system too.



### mfp eavemaster supreme

The MFP Eavemaster Supreme rainwater system is a stylish, high-capacity, symmetrical, ogee gutter system which simplifies installation and thereby reduces costs. It is a high-quality, competitively-priced system which offers key benefits such as:—

- High-performance moulded seals;
- Robust, user-friendly jointing clips;
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- Outlets and unions with centre and side-fixing points;
- Indicator marks on fittings for fast, accurate alignment;
- No sharp edges on fittings;
- Multi-positioned outlet;
- Colour-matched to the Eavemaster Fascia System;
- Available in white, black and brown.

Contact: Dudley Foster, MFP. Tel: 01 - 630 2600; email: sales@mfp.ie

### rsl refrigerant gases handling

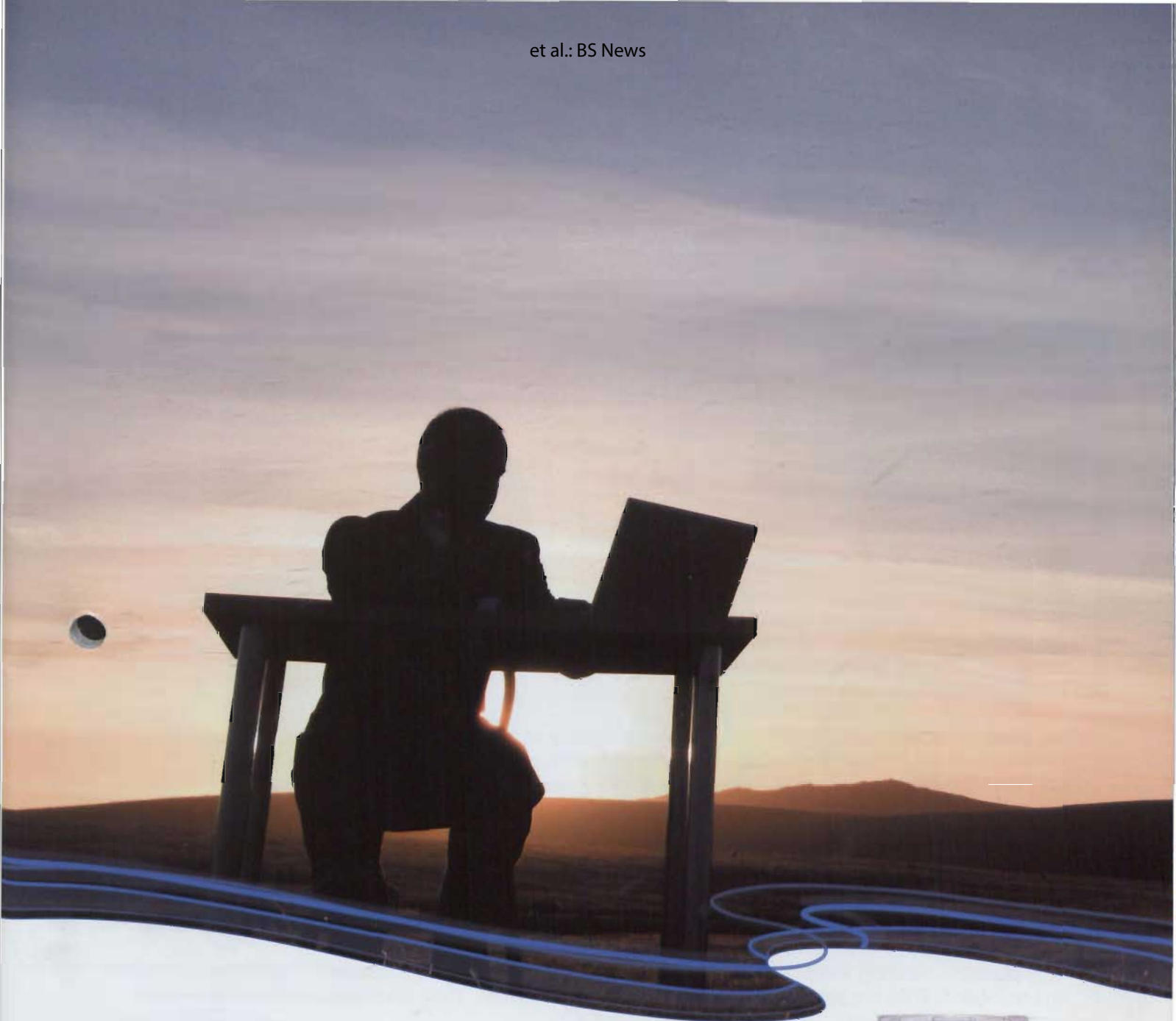
RSL can now collect, safely store, classify and reclaim or destroy refrigerant gasses. This service will be provided in compliance with all relevant regulations and proper documentation/certification will be available.

RSL is one of the largest suppliers and stockists of refrigerant gasses in Ireland and has been doing so since 1967. Because of the current legal situation in Ireland with regard to the handling and disposal of refrigerant gasses, RSL has decided to use an outside licensed transport company. It will collect gasses from the client's site and transport them to the UK for proper recovery or destruction.

This company uses licensed collection vehicles, has a licensed assembly site, uses a serial number system to track cylinders, and provides certification of destruction to satisfy F-Gas and ODS/EPA regulations.

Contact: Gerry McDonagh, RSL Ireland. Tel: 01 - 450 8011; email: info@rslireland.com





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## trade news + product information

### the f-word at the ritz carlton



Flowcon automatic balancing valves supplied by Advanced Technical Products were recently supplied to the 5-star Ritz Carlton Hotel in Enniskerry. The use of these valves completely eliminates the need for individual balancing, thus resulting in ease of installation and cost savings on commissioning.

"We are very pleased with the product and how it has been employed on this project, with each cartridge being delivered in a bag, set and labelled with the location and fan coil number" says Peter Kelly of ATP.

Contact: Peter Kelly, ATP. Tel: 01- 885 3792; email: [info@atpireland.com](mailto:info@atpireland.com)

### variable area glass flowmeters

Series VA variable area glass flowmeters from Manotherm are designed to accurately measure the flow rates of air, water and commonly-used gases. They have an easy-to-read universal mm scale and are supplied with a correlation chart containing data for air and water. Correlation data for other liquids and gases are also available.

Series VA units incorporate a permanently-fused ceramic scale with vertical locator line which reduces parallax and eye fatigue. The thick polycarbonate front shield protects the tube from breakage and also serves as a magnifying lens to enhance reading resolution.

Glass flowmeters are suitable for metering carrier gases, liquid and gas measurement in pilot plants, laboratories, process flow and level indicating. The Series VA units are equipped with a standard 6-turn needle valve for flow rate control.

High-precision metering valves with non-rising stems (sold separately) are available for high sensitivity control and resolution. They are particularly suitable for very low flow rates. They are supplied fully assembled and ready for panel mounting.

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



### flogas at your fingertips

The newly updated Flogas Technical Services Manual is now available in CD-ROM Business Card format as well as in a hard copy folder. It contains information on LP gas and the latest updates on cylinder installations – domestic and non-domestic – to reflect recent amendments to IS813 and IS820; installation guidelines including residential metered gas distribution systems; bulk gas tanks; and tank siting and road tanker information.

The new manual is provided on CD-ROM Business Card and in a hard copy folder. Both are available free of charge.

Contact: Flogas Customer Service. Tel: 041 - 983 1041; email: [gbyrne@flogas.ie](mailto:gbyrne@flogas.ie)



Unit A6, Centre Point Business Park, Oak Road, Clondalkin, Dublin 22  
Tel: 01 - 409 8912; Fax: 01 - 409 8916;  
email: info@coreac.com; Web: www.coreac.com

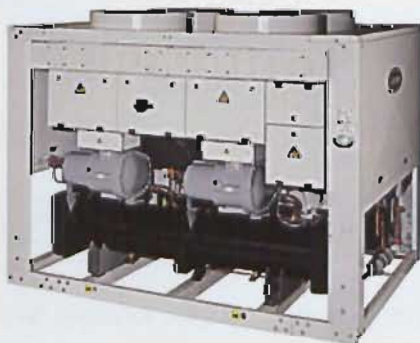


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Packaged Rooftop Units  
Minisplits  
Fan Coil Units  
Controls



Flexible and reliable  
VRF system



## trade news + product information



### cylon system integrator convention

Cylon Controls has always acknowledged the importance of partnership between system integrators and building management system (BMS) manufacturers. When completing building control projects partnership between all parties involved is key as often tight deadlines must be met.

For the past 22 years Cylon has sold its products through a network of system integrators, thereby providing local specialists to the end user. Currently there are 111 Cylon-approved system integrators worldwide. Their collective experience, specialist skills and extensive knowledge serve to provide end-users with building management solutions optimised to their individual requirements.

This commitment to partnership is marked on an annual basis with the Cylon system integrator convention which was held this year in Croke Park in Dublin. A large turnout from across the globe attended to swap ideas and exchange information.

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

### ucc leads the way in energy engineering

Minister for Communications, Energy & Natural Resources, Mr Eamon Ryan, TD, recently unveiled details of the new BE degree in Energy Engineering now being offered by University College Cork. This new energy engineering degree programme will commence in 2008, thereby becoming available to students now entering their Leaving Certificate year. UCC already offers a one-year taught Master's Programme (MEngSc) in Sustainable Energy.

Dr Richard Kavanagh, Dean of UCC's Engineering Faculty and coordinator of the new programme, pointed to the career prospects of students who will graduate from this programme. The new programme will draw on the expertise of 14 permanent academic staff currently involved in energy research at UCC. These academics, who have secured €11 million in research funding since 2004, will contribute from their expertise in wave energy, wind energy, energy policy, energy systems in buildings, biofuels for transport and power conversion.

Contact: Marie McSweeney, UCC. Tel: 021 - 490 2371; email: [mariemcsweeney@ucc.ie](mailto:mariemcsweeney@ucc.ie)

### select elta fans catalogue

Elta Fans latest Select range catalogue — featuring axial, mixed-flow, centrifugal and roof-mounted products — is now available from Fantech Ventilation.

It features an overview of each product, along with detailed technical and performance specifications, all colour coded, making the selection process easy.

In addition to the Select catalogue, an interactive pdf brochure allows the user to easily navigate between the contents page and all products and accessories with a simple click of a button.

Distributors, contactors and end users can now apply to receive their own personal copy.

Contact: Brendan O'Toole, Fantech Ventilation. Tel: 01 - 882 8411;  
email: [info@fantechventilation.com](mailto:info@fantechventilation.com)

# The award winning Utopia IVX Series



The brand new DC Inverter Utopia IVX Series is no stranger to the spotlight. Even though it's the newest of Hitachi's outdoor units, its compact and lightweight design, high energy efficiency, and low power consumption has already seen it collect the **Energy Conservation Grand Prize**.

Flexible installation is now a breeze, with up to a **97kg reduction** in weight, a **43% decrease** in cubic area and a footprint that's **40% less** compared to a current top-flow type unit.

**Compact design for 20kW, 25kW and 30kW capacities**

**Individually controlled units**

**High COP and EER**

**Super hi-stream fan**

**Low noise operation**

Energy saving and unrivalled comfort is accomplished via individual operation, which also allows for a much simpler and cost-effective installation. A DC inverter compressor, DC inverter fan motor and an improvement of the refrigeration cycle delivers the high efficiency and low noise operation you've come to expect from Hitachi.

Many innovative design modifications, including **20kW, 25kW and 30kW** capacities within the same unit size and new super high-stream fans, truly assure the DC Inverter Utopia IVX series a place centre stage. call today to find out more.

**HITACHI**  
Direct +353 1 216 4406



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Inspire the Next

## trade news + product information

### lg & core ac driving sustainability

LG Electronics claims to hold the record for the greatest sales in air conditioners in the world since 2000. What's more, the newly-launched, energy-saving, ARTCOOL Gallery series, which uses a new refrigerant, is set to boost sales further, especially in Ireland where Core Air Conditioning has done so well with the brand.

LG provides a wide range of tailored commercial air conditioning products suited to buildings in a variety of types and sizes. Its Multi V Plus is one of the world's highest-capacity units, while the Multi V Sync provides simultaneous heating and cooling with one outdoor unit, ensuring optimal temperature conditions. LG's Multi V Space is also well known for being economical, aesthetically-pleasing, and is ideal for sophisticated, luxurious living spaces.



Sustainability underpins the entire range. LG's Eco-design concept involves reducing the environmental impact of a product throughout development, production, and circulation; improving the efficiency of resources, energy, and recyclability; and reducing the use of hazardous materials.

Since 2005, when LG Electronics announced that it would no longer be producing products containing any of the six hazardous substances specified by the EU, the company has been adhering to strict regulations with regard to the management of hazardous substances and the production of its products.

"Through sustainable management, LG Electronics is helping to produce a clean environment" says Austin McDermot of Core Air Conditioning. "This ethos sits very comfortably with that of Core AC and so enables us to provide a vast choice of tailored, environment-friendly, air conditioning solutions for all manner of applications".

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



### casey joins hoh partnership

Seamus Casey, B.Sc.Eng., C.Eng., Dip.Enga, MCIBSE, has joined HOH Partnership as a senior engineer. He has extensive experience in the design of building services installations, having worked extensively in consulting engineering for the last 17 years.

### douglas formalises delabie partnership

The Douglas Group, the specialist supplier of thermostatic control solutions and accessories for the commercial market, has formalised its strategic trading alliance with Delabie, the French commercial sanitary fittings manufacturer.

Delabie specialises in automatic shut-off, electronic valves and water saving controls and the two companies have worked closely together for some years through joint product innovations.

There is considerable synergy between the two companies and the extended product programme addresses market issues such as safety/comfort; hygiene; water sustainability; and product sustainability.

To mark the partnership a new Douglas Delabie brand identity has also been created.  
Contact: [www.douglascontrols.co.uk](http://www.douglascontrols.co.uk)

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## trade news + product information

### refrigeration skillnet secures further funding

Refrigeration Skillnet has been successful in securing a grant for the Training Networks Programme (TNP) from Skillnets, the enterprise-led support body, whose mission is to enhance the skills of people in employment in Irish industry to support competitiveness and employability.

Skillnets is funded through the National Training Fund and its stakeholders include leading employer and employee representative bodies such as Chambers Ireland, Irish Business and Employers Confederation (IBEC), the Construction Industry Federation (CIF), the Small Firms Association (SFA) and the Irish Congress of Trade Unions (ICTU).

In recent years Refrigeration Skillnet has emerged as the primary provider of training programmes for the refrigeration and air conditioning sector. It has devised tailored seminars and workshops to cater for all industry levels and has been instrumental in raising the core knowledge base, competency levels, and professionalism of the entire industry.

*bs news* will have the full story next month.

### finheat relocates to dublin 12

Finheat Group has consolidated two of its operations under the one roof following the formal move of Finheat Ltd to the Ballymount complex already occupied by sister-company Liberty Air Technology. Spiro Grilles & Dampers, the other company in the Finheat Group, remains in Cherry Orchard for the foreseeable future.

New contact details are Unit 6C, Ballymount Industrial Estate, Walkinstown, Dublin 12. Tel: 01 - 456 4066; Fax: 01 - 623 4226.

### ecobuild 2008 — zero carbon in a day

Ecobuild returns to Earl's Court, London next year — 26 to 28 February 2008 — bigger and better. It will be double the size with more than twice the number of exhibitors as earlier this year, along with at least 75 free seminars and a whole series of attractions linked to the key themes — zero carbon, water management and renewable energy.

With zero carbon legislation looming, Ecobuild's *Road to Zero Carbon* and *Zero Carbon House* attractions will be particularly interesting.

*Road to Zero Carbon* comprises a series of external wall elevations showing how different combinations of superstructure, insulation and cladding can contribute to a low carbon outcome.

But it's the *Zero Carbon House* by Zedfactory that will be the star of the show, for the wealth of information that this full-size structure will convey and for its sheer scale and ambition.

The entire concept of sustainability is catered for. For instance, if water management is your primary interest, be sure to visit SoH2O, Ecobuild's integrated water management installation. Other attractions include a micro-renewables section, Solar City and, if you're looking for more sustainable construction methods and materials, Natural Materials Live.

Entry to Ecobuild and all its attractions, seminars and keynotes is free to industry professionals. You can pre-register at [www.ecobuild.co.uk](http://www.ecobuild.co.uk)



# Aervent Lindab — New Force in HVAC

The recent acquisition of Aervent Group by Lindab has provided the Swedish-based multi-national with a firm foothold in the Irish market and a ready-made trading relationship with some of the world's leading ventilation and air movement specialists. Aervent Group manufactures its own line of spiral ducting but also distributes a vast portfolio of ventilation and air movement equipment from the likes of Vent-Axia, Roof Units, Dunham-Bush, Interklima, Air Diffusion, Strulik, HVC, Scotaire and Victoria Fans.

Lindab expects to benefit from several synergy effects through combining the businesses. "Aervent has an excellent reputation for its technical expertise and customer service", says Hannu Paitula, Lindab's Business Area Manager, Ventilation, "and our plan is to build on this and add to the range of Lindab's flagship products."

Both management and staff at Aervent are equally-enthusiastic about the acquisition. "We have spent years building up a significant market share and are now Ireland's largest distributor of ventilation products to the HVAC sector", says Managing Director John Kennedy. "We are totally committed to meeting the needs of consultants, mechanical engineers and ductwork contractors and our ability to do this has been strengthened now that we are part of the giant Lindab family which employs 5000 people worldwide and has a turnover of €1 billion."

Lindab has been keen to enter the Irish marketplace for some time and identified Aervent as the perfect, ready-made, vehicle to achieve this objective. Apart from the portfolio of market-leading brands, €12 million turnover and operating profit of nearly €1 million, the



Hannu Paitula, Lindab's Business Area Manager, Ventilation with John Kennedy, Managing Director, Aervent

calibre of the Aervent staff was seen as critical to the deal. "Just like Lindab", says Kennedy, "we are driven by a commitment to total customer satisfaction. To achieve this requires massive strength in depth at personnel level and we have this in abundance. The knowledge, experience and dedication of our 30-strong staff complement is the best in the business."

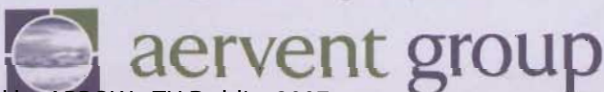
Allied to that are the structured technical, design and after-sales service support mechanisms we offer. These are tailored to cater for all segments of the HVAC spectrum and are universally available, irrespective of the scale of the project. The same level of support is provided to all our customers.

The coming months will see a period of consolidation and retrenchment with the scope and strength of the portfolio being broadened and the quality of service provided being further underpinned and refined. However, growth and expansion is inevitable and the new year will undoubtedly bring news of further developments at Aervent Group.



Nangor Road Business Park,  
Nangor Road, Dublin 12  
Tel: 01 - 456 8200

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





## trade news + product information

### top-connected ahu from systemair

Topvex TR is a new heat recovery air handling unit from System Air designed for top connection to meet the more stringent energy requirements of the building regulations.

In order to achieve low energy use which meets present requirements it is important that the air handling units have a low pressure drop. Topvex TR is designed for low internal air velocities that, together with space for large air filters, contribute to low pressure drop.

Topvex TR uses high-efficiency EC motors which use 50 % less energy than conventional asynchronous motors with voltage regulation in rpm regulation mode. Other features include night cooling, cool recovery, and season-related temperature/season-related flow regulation. The unit is delivered complete with control system for facilitating installation and commissioning.



Contact: Mark Russell, System Air. Tel: 01 - 862 4544; email: sale@systemair.ie

### chartered engineer of the year 2007

Andrew Grace from Co Clare has won the Engineers Ireland Chartered Engineer of the Year Award 2007. He works as R&D Project Manager with Cameron System Ireland Ltd in Longford and submitted details of his involvement in developing a high-pressure valve system for deep-water gas exploration.

Commenting on the competition, the Director General of Engineers Ireland, John Power, said that the quality of the entries was outstanding. "The short-listed submissions underlined the crucial role that engineers are playing in the further development of the Irish economy."

He also said that the high profile projects which featured in this year's final would hopefully inspire more second level students and their parents to consider the merits of a career in engineering.



Co. Clare man Andrew Grace is the winner of the prestigious Engineers Ireland Chartered Engineer of the Year Award. Andrew is pictured here with Michael and Gretta Grace (Shannon, Co Clare) and his girlfriend Jill Sinden

### mtd-prc & mrc series roof cowls

The MTD range of roof cowls is produced in 150mm and 200mm diameter. The MTD-PRC is constructed from strengthened polymers with a three-vane cylindrical design while the MTD-MRC is made from galvanised steel with a powder coat finish on the rectangular cowl.

Both cowls feature integrated lead flashing and bird guards and are available as standard in grey to best suit Irish roofing styles. However, the MTD-MRC is available in any RAL colour with a two-week delivery.



MTD-MRC model



MTD-PRC model

Contact: Ciaran King, MTD Solutions.  
Tel: 045 - 900 590; email: info@mtd-solutions.com;  
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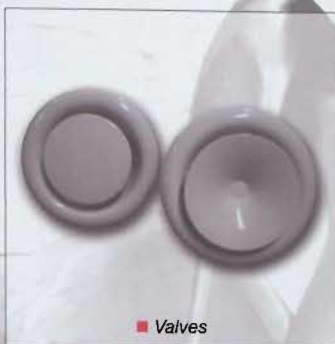
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■ Flexible ducts



■ Tools



■ Filters



■ Ducts & accessories



■ Fixations



■ Steam humidifiers



■ Fans

## trade news + product information

### white young green recruitment drive

White Young Green Ireland plans to recruit 35 new graduates to serve across its four disciplines — engineering, environmental services, surveying, and management and town planning.

A key feature of its graduate programme involves supporting graduates in achieving professional accreditations and chartered status. Each graduate will be given the opportunity to work on a wide variety of different projects in a multi-disciplinary environment and to train in the areas of company software, report writing, communication, team building, client care, people management and project management.

In addition, each graduate will be appointed a mentor who will offer on-going guidance and support for the duration of the programme.

Contact: [www.wyg.com/ireland/careers](http://www.wyg.com/ireland/careers)



Gillian Forde, Graduate Structural Engineer, WYG with Ronan Padden, Graduate Mechanical and Electrical Engineer, WYG; Ray Moore, Group Managing Director, WYG, and David Gogarty, Graduate Structural Engineer, WYG.

### homan o'brien acquires cecl

Homan O'Brien has purchased Conservation Engineering Consultants Ltd (CECL) for an undisclosed sum. CECL was founded 14 years ago by sustainable energy expert and consulting engineer Tim Cooper, who will remain with the company as senior consultant. Niall Coughlan has been appointed Operations Director of the new CECL business, while Brian Homan and Simon O'Brien are also directors.

As we went to press Niall Coughlan told *bs news*: "CECL has an extensive client base and an impressive historic pedigree in the sustainable energy field. The continued presence of Tim Cooper will also ensure the smooth transition of knowledge and expertise to the new organisation.

"We are also fortunate in that the parent company, Homan O'Brien, has won many awards and accolades for its work in this field, including the First RIAI Award for Sustainability in Offaly Civic Offices and the First British Council Offices Award for Internal Environment for the GE Money (formerly Woodchester Bank) Building."

Simon O'Brien say: "Our core business is in mainstream consulting engineering but we have increasingly been asked to provide more specialist expertise in the sustainable energy field. By acquiring CECL we can slot that knowledge seamlessly into any of our projects."

Contact: Simon O'Brien, Homan O'Brien. Tel: 01 - 205 6300.

### selling exported electricity in advance of SMART meters

Surface Power Technologies, the Irish developer of next-generation renewable energy technologies, has welcomed the CER's decision on micro-generation and the creation of a mechanism for calculating payment for exported electricity using interval meters for micro-generators.

John Quinn, CEO, Surface Power said: "This decision paper by the CER is in keeping with a positive role that the CER has played in micro-generation to date. Its leadership, along with other government departments such as the planning department in DoEHLG, means that Ireland could soon have the most advanced electricity network in the world for micro-generators, including bi-directional smart tariffs.

"This is the fastest way to achieve carbon emission reductions as it involves everybody in the process of taking responsibility for their energy and carbon footprint. It is also worth noting that there are ESBN technical standards at the heart of the EN50438 standard."

Contact: Caroline Mc Andrew, Surface Power. Tel: 094 - 954 4776; email: [caroline@surfacepower.com](mailto:caroline@surfacepower.com)

## Jobs Corner Jobs Corner



### GT Phelan

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### MTD Solutions



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MTD Solutions Ltd based in Blessington, Co Wicklow has a vacancy for an office-based sales engineer. Applicants should have a background in building services engineering, either in ventilation or air conditioning. The applicant should also be reasonably proficient with AUTOCAD. A minimum of four years experience within the building services industry is required.

The successful applicant will be responsible for designing duct layouts on CAD, detailing take-off from drawings and preparing quotes. He/she will deal direct with regional agents, developers and architects, and must be able to work on his/her own initiative and be a good communicator. Remuneration will depend on experience.

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All applications will be treated confidentially with all applicants being called for interview.

#### How to apply

Send CV's to E McWilliams, MTD Solutions Ltd, 8 Burgage House, Blessington, Co Wicklow

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

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Lorcan Mooney  
e: lorcan.mooney@pmg.ie

# designing BUILDING SERVICES

## old school engineering of school facades

This month we look at some of the key issues and success factors associated with the implementation of various approaches and strategies relating to building facades.

In general, buildings use over 40% of Europe's energy and so the need to reduce environmental impact and operating costs has never been greater. In line with the recent Building Regulations both in Ireland and other European states, we need to look at the passive fundamentals of our buildings and their construction materials.

Under Ireland's latest current regulations, there are steps to reduce the amount of solar heat gain being transmitted into the space (solar over-heating) by limiting the amount of glazing (m<sup>2</sup>) or by using a glass with improved solar heat transmission characteristics. The Irish regulation's requirement can be cross-referenced with the area (m<sup>2</sup>) and the characteristics of the glass by either limiting the peak temperatures to a certain number of hours a year with natural ventilation, or limiting the direct solar gain into the space.

With the advent of dynamic

simulation, building services engineers now have the capability to challenge existing concepts and investigate alternative construction methods, materials and facade configurations, for example by employing a climate facade.

One way to limit the solar over-heating of the building interior and limit the heat transmission through the glass would be to limit the glazed surface area of the building facade. This, however, may limit the daylight levels and also place constraints on the architectural form of the building. It could also increase the need for artificial lighting due to the reduced daylight

available. Solar heat gains could also be reduced by using high-performance glass which can be a combination of heat-absorbing, coated and reflecting elements (see Figure 1).

Visible light generally constitutes around 50% of the solar energy spectrum, hence the use of "tinted" glass can effectively reduce visual light transmission. Occupants may, however, perceive that their environment is dull in colour and that an unnatural environment is being created for them. This situation would also be exaggerated on an overcast day.

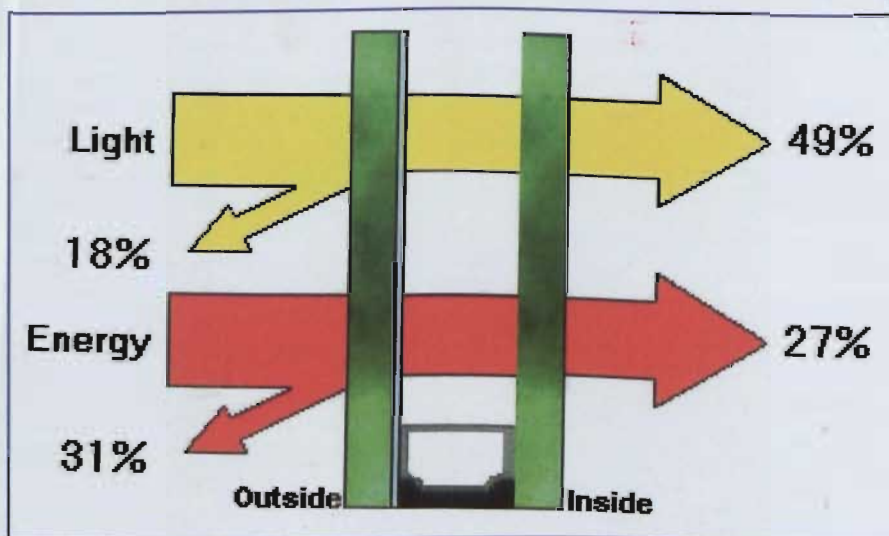


Figure 1 — Typical characteristics of high-performance low e glass<sup>1</sup>  
Optimise visual light & reduce the heat/ energy being transmitted into the space.

# old school engineering of school facades

Traditional passive methods to reduce solar glare would be the use of internal blinds. This method is limited due to the fact that solar radiation would already be inside the space by the time the internal blinds have an effect and this heat is exchanged into "sensible heat gain". The heat would also be absorbed by the blinds and re-radiated into the space, therefore contributing directly to the instantaneous cooling demand on the HVAC system.

## External Shading

The most efficient means of controlling solar energy is to intercept the solar radiation before it enters the building. The most effective way to eliminate solar over-heating would be to shade the entire glass surface. External brise soleil, meshes and fins are often expensive due to the additional costs of framing and support requirements. Further costs could include maintenance, upkeep and cleaning. As the elements are exposed, the need to clean the elements increases versus a traditional internal blind system.

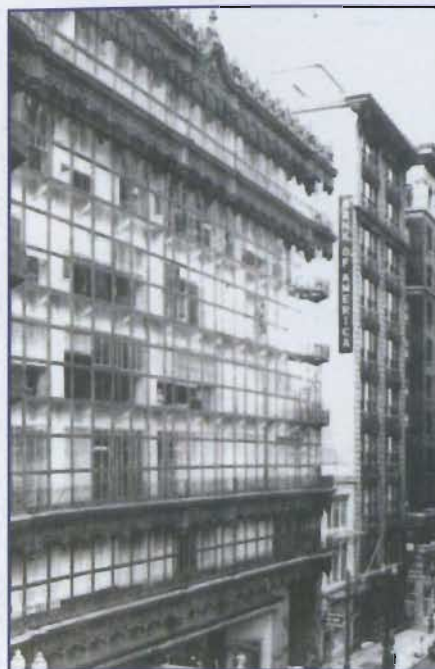
Fixed external shading devices seldom provide sufficient protection during the full year, particularly on elevations facing east and west when the sun is rising and setting low in the sky. A solution to address this is the use of a motorised shading device to optimise the amount of daylight and reduce the

direct energy emitted into the space. A motorised solution maximises the amount of light into the space during the winter season and limits the amount of solar gain in the summer, thus creating a more natural environment for occupants all year round.

One option to minimise the required maintenance is to install a sacrificial pane of glass on the external skin so as to act as a barrier from the elements. This would be known as a climate facade.

## Climate Facade

Climate facades are an old technology. One of the first buildings to incorporate this type of system was built around 1915, Hallidie Building in San Francisco.



Hallidie Building<sup>2</sup> in San Francisco

Within a climate facade the solar shading device is integrated into the void created between a double-skinned glazed facade. This shields the shading device from external atmosphere/climate. The width of the void may vary from 600mm to 1.5m, dependant on the latitude and longitude of the site location. The intermediate brise soleil within the ventilated void would reflect the majority of the incoming solar radiation back through the external glazed skin before it can pass through the inner glazed curtain wall.



Traditional Climate Facade<sup>2</sup> — external brise soleil and external sacrificial pane of glass, note the gaps around the pane to allow the entire skin to ventilate

## old school engineering of school facades

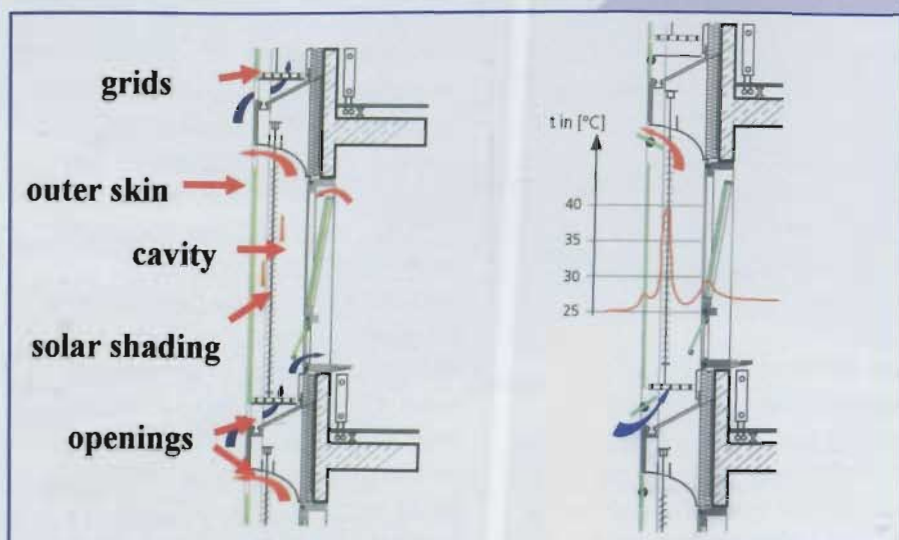


Figure 2— Climate Facade2 — External brise soleil and external sacrificial pane of glass, note the air gaps to allow the skin to ventilate

A proportion of solar radiation is converted into "sensible" heat and re-radiated back into the void between the inner and outer panes. In the summer this heated air in the void is exhausted to the outside either via gaps in the external skin, or through ventilated openings at the top and bottom of the void (see Figure 2).

One advantage of the wall would be during the heating season where cold radiation from the glass surface is reduced, because the inner pane is heated by the absorbed solar energy in the void. There is also the possibility of using this void to pre-heat fresh air for use in heating spaces within the building.

Another possibility for using this system economically would be

to use the void to drive natural ventilation by using cross ventilation. One project in Ireland uses this principle where cool fresh air is drawn into the space through the north elevation, and exhausted air through a climate wall on the south elevation. The climate facade uses the heat generated inside the wall from the sun to create a temperature gradient inside the void which induces hot air from the room into the climate facade. This is also known as the "stack" effect.

With the stack effect, cooler air is drawn into the air space via the north elevation to replace the interior buoyant warmer air which is ventilated through the south elevation into the climate facade and then to the atmosphere at the top of the wall. This project also uses night

purging which can reduce the space peak temperature between 1°C and 3°C<sup>3</sup> during the day, or on average 20/25 W/m<sup>3</sup> of stored cooling in the building skin which is also known as cooth. Night purging is a method of pre-cooling the building to help offset the temperature swings the following day by flushing out warm air and cooling the building the night before.

Currently there are a number of projects within Ireland that are proposing to use these systems, not only for their reduced thermal operating cost and aesthetic appearance, but for acoustic reasons. In one particular case a climate facade has been proposed for the building because the site is adjacent to a main train line. In this situation the climate facades should be able to attenuate approximate 30dB<sup>2</sup>.

### Conclusion

In summary, the main reason to use climate facades are:—

- To enhance the visual impact of buildings and the aesthetic desire for an all glass facade that leads to increased transparency;
- To reduce the direct solar energy transmitted into the interior while maintaining optimal daylight levels;
- The practical need for improved indoor environment;
- The need for improving the

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## old school engineering of school facades

acoustics in buildings located in noise-polluted areas;

- The possibility to achieve natural ventilation strategy.

The key implications of using climate facades as opposed to traditional single-skinned glazing system are:—

- Costs: approximate an additional 24%<sup>2</sup>;
- Maintenance: approximate a reduction of 10%<sup>2</sup>;
- Running costs: approximate a reduction of 10%<sup>2</sup>.

### References:

- 1 — Pilkington Glass- Suncool Brilliant 50/25N
- 2 — Details for Schuco
- 3 — BRE 345
- 4 — CIBSE Journals
- 5 — Glass in Architecture — Phaidon
- 6 — A Green Vitruvius — James X
- 7 — Green Design - OPW

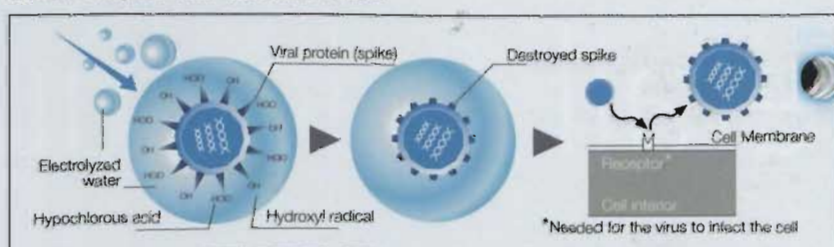
**Lorcán Mooney is a Lead Project Engineer with PM Group. As well as being passionate about the environment, he has a BEng in Mechanical Engineering and a Pg.Dip. in Project Management. PM Group is Ireland's largest full service A&E firm, providing professional services in project and construction management, architectural and engineering design, and technical consultancy.**

# Sanyo Virus Washer Offers Increased Protection

The quality of the air we breathe, especially where people gather such as hospitals, schools and other public facilities, is very often contaminated by airborne germs which are detrimental to our health. Over the years a great deal of research has been done to tackle this problem and now Sanyo, with its innovative Virus Washer based on electrolysed water technology, has come up with a solution.

It not only renders infectious airborne viruses harmless, it also reduces airborne bacteria and mould, as well as pollen mite allergens. In fact, Sanyo claims that it eliminates more than 99% of airborne viruses and bacteria. This is based on independent tests carried out by the UK Health Protection Agency on the product on behalf of Sanyo.

How Electrolyzed Water inactivates Viruses



The electrolyzed water destroys the proteins (spikes) on the surface of the virus, rendering the virus inactive.

Specifically, it was the Direct Challenge Test which determines the efficiency of the unit to inactivate bacteria on a single pass through the Virus Washer. Its findings in this regard read: "The results of the Direct Challenge Test are extremely satisfying and they show that the VW-VF10BG is capable of inactivating 99.999994% of Staphylococcus Epidermidis in a single pass".

Sanyo's Virus Washer uses an electrolysed water-disinfecting element to inactivate viruses and other airborne microbes and particles. Electrolysed water runs over the air purification element in the Virus Washer with the indoor air forced to circulate through the element, inactivating airborne viruses which pass through it.

To clean the air in large spaces where people come and go, the fan speed can be set to 490m<sup>3</sup>/h. This makes the Virus Washer ideal for use in schools, hospitals and other large spaces. For instance, the powerful cleaning capacity is capable of circulating the air approximately 2.7 times per hour in a school classroom application.

To adjust airflow direction and prevent dust intake, an automatic louvre — which will swing in a range of 0° to 23° — opens when the unit is turned on and closes when it is switched off. There is also a child-lock function to prevent children tampering with the unit.

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

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

email: kevin.oconnell@dit.ie



## CIBSE/DIT Kevin St Student Presentations & Awards

A capacity attendance packed the Gleeson Hall in DIT Kevin Street last month for the CIBSE/DIT Kevin St student presentations and awards ceremony. The day started at 2pm in the lecture theatre where a panel of judges — comprising Jim Fogarty, Gabriel Byrne, George Murphy, Jonathan David and Kevin Tracey — heard presentations from students who had entered the SLL Lighting Design Competition. The overall winner was Sean Halpin and he will now go forward to represent DIT at the SLL Young Lighter Competition in the UK.

LED lighting specialists Enlighten sponsored the SLL Lighting Design Competition and Managing Director Gabriel Byrne was on hand to make the presentation to Sean. In making

the presentation Gabriel commended the quality of all the presentations and advised Sean that he had a hard act to follow in that three former winners of the DIT competition have gone on to win the SLL Young Lighter Competition.

In addressing the students in general he said: "This evening is a very important occasion for everyone on the course and we're here to honour all of you and your respective achievements. Electrical services design is a core part of the course and it provides an opportunity for all students to acquire an understanding of lighting in general, and lighting design in particular. This is critical at this juncture in the development of lighting as major developments and innovations are now coming on stream, especially in respect of LEDs.



Séan Halpin winner of SLL Lighting Design competition

"Many of these products are highly-sophisticated and present challenging scenarios for emerging lighting engineers. However, they also present massive opportunities. The demand for qualified lighting engineers and designers has never been greater. Such is the changing nature of the industry that lighting — for so long the exclusive domain of the architect — is now being reclaimed by the engineer.

"Both architects and clients alike now acknowledge the critical contribution lighting engineers and designers can bring to this newly-emerged market situation. The sophistication of LEDs and lighting management systems has opened up an entirely new vista which allows for all manner of creative lighting solutions for both interior and exterior lighting applications.



Back Row: Tom Nugent, John Furlong, Homan O'Brien Associates; Noel McLoughlin; Liam Murphy; Pat Corcoran, Synergy Ireland; Michael Kavanagh, Hays Construction & Property; Ben Dunne, Apex Building Centre; Colm Agnew and Gerry Farrelly.  
Front Row: Vincent Kenny; Kevin O'Connell; Gerard Buckley, Chairman ETCl; Lee Harrison, Honorary Secretary, CIBSE Rol Region; Mike Simpson, Vice President, CIBSE; Margaret Dolan, Chairman, CIBSE Rol Region; Colman Reynolds, CR Associates; and Tom Shannon

## CIBSE/DIT Kevin St Student Presentations & Awards

"Nor is this creativity limited to visual impact and display. It also extends — and perhaps even more importantly so — to use of energy-efficient lighting solutions. Lighting can be a very high consumer of energy with badly or inappropriately-designed systems using massive amounts of electricity. On the other hand, carefully-designed solutions incorporating LEDs and advanced controls can result in visually-dramatic displays which are incredibly energy-efficient.

"This is the marketplace scenario facing all electrical services engineering graduates. Your skills and expertise have never been more in demand, or indeed needed. You are ideally placed to avail of this opportunity and to reclaim lighting design in particular as the rightful domain of electrical engineers. Go for it".



Gabriel Byrne, Managing Director, Enlighten



Back Row: Stephen Quirke; Ross Taylor; Kevin Tracey, EDM Consulting Engineers; Peter Whitty; John Brady  
Front Row: Kevin O'Connell; Mike Simpson, Vice President, CIBSE; Margaret Dolan, Chairperson CIBSE, Rol Region



Back Row: William Kelly; Bernard Doyle; Tim Corcoran, Arup;  
Front Row: Kevin O'Connell; Mike Simpson, Vice President, CIBSE; Margaret Dolan, Chairman CIBSE, Rol Region



Back Row: Marc Lynch; Séan Halpin; Sponsor, Colman Reynolds, CR Associates; Serge Panzu-Naiga. Front Row: Mike Simpson, Vice President, CIBSE; Margaret Dolan, Chairman CIBSE, Rol Region



Kevin O'Connell, Head, Department Electrical Services Engineering



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

## Challenge Issued to LED Industry

**M**y two previous articles addressed the rapid growth of LED technology in the artificial lighting market and the application of particular LED luminaires to project specific applications.

In this concluding article I issue a challenge to the LED lamp and luminaire industry — both manufacturers and suppliers — to accelerate the harmonisation and standardisation of their products and to publish software to allow independent validation of lighting design solutions utilising LED products.

I previously referred to the fact that our office insists on viewing samples of all LED lamps and luminaires before selection and specification. For reference in this article we procured two LED lamps that were offered as direct replacements for low voltage halogen lamps. One lamp was warm white and one cool white. The LED lamps had no markings whatsoever on the lamp or the box to indicate operating voltage, wattage, manufacturer, product reference, CE mark or compliance

with a standard. The light output from both lamps was poor and the colour of the light emitted from the cool white lamp bordered on ultra violet.

We also examined a selection of sample rope lights. Some of the products were well marked to indicate the basic criteria noted above but the detail of the markings did vary significantly. Again the variance in light output and colour rendering from the various rope light products was quite spectacular.

A variety of unsubstantiated anecdotal criticisms are also in circulation, such as diodes operating at 230 volts and burn out after three or four years. While I currently have a lack of confidence in my ability to identify and specify the most appropriate LED product on my projects, I am still of the opinion that LED lighting technology has a very significant part to play in the future of artificial lighting. However, the pace of growth and market penetration will be stifled until such time as the industry provides designers, specifiers and users with products that comply with international harmonised standards for safety, quality, colour rendition and lighting levels achieved.

It will obviously take some time to develop and publish international standards and calculation methods for LED lighting. In the meantime I suggest that the Irish suppliers of LED lamps and luminaires arrange open seminars or workshops to inform designers, installers and users on the general status of LED lighting technology and, in particular, host informed discussions on the following core issues:

- Quality of manufacture;
- Safety standards;
- Colour rendering and colour matching;
- Methods to calculate lighting levels;
- Appraisal of the performance of the technology to date with reference to existing installations with a reasonably long life in service.

I trust that my series of articles will be considered a positive stimulus for discussion, education and improvement in the area of LED lighting technology and I look forward to designing and specifying LED luminaires, with all of the positive advantages that this technology brings to building services, well into the future.

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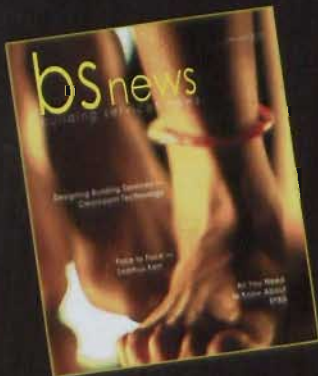
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**G**rundfos has just received the prestigious

EMAS Award, the EU award for good environmental management. It is the first time a Northern European company has received the award and it was presented at a special ceremony in Lisbon, Portugal last month.

The total amount of waste produced by Grundfos' Danish factories has been reduced by a third in less than 10 years while waste recycling has risen to 84% over the same period. Grundfos received the award in the category for large companies and had to compete against 10 other nominations from the EU member states.

The EMAS Award is the EU Commission's recognition of companies which are not only at the cutting edge environmentally, but have also made a particular effort within this year's target area — waste minimisation and waste handling.

"This award represents recognition of our employees' efforts and involvement, as well as offering proof that our processes and organisation in relation to waste handling are working. In addition, the award is an acknowledgement of our efforts over many years and the documented results for the benefit of the environment which we can produce", says Jürgen Hejlesen, who is responsible for the environmental efforts at Grundfos A/S.

"Grundfos prioritises its environmental effort in relation to customers, authorities and suppliers. We take our responsibilities very seriously at all stages of the value chain. Thus, we constantly endeavour to expand and improve our effort. Currently, we are, among other things, looking at exploiting the

potential offered by using surplus energy. We are investigating alternative methods of generating cooling energy for our production process while, at the same time, disposing of excess heat in a green way", concluded Hejlesen.

Grundfos is also working on reducing the energy consumption of its products. There are many ways to save energy around the house – but which are more efficient? The graph shows the energy-saving potential of different household appliances and Grundfos urges all in building services to advise customers accordingly.

Grundfos studies have shown that awareness of energy-saving circulators is surprisingly low. A massive 74% of customers do not realise how much they could save by installing energy-efficient pumps or replacing the one they have. Amazingly, 66% of them find it relevant to them.

Consequently, Grundfos has embarked on a major education drive and urges installers in particular to explain to customers just how much they can save by installing energy-efficient pumps. Relevant facts and information to impart include:—

- Replacing a circulator pump can save households more than replacing a fridge;
- Over the last five years Grundfos circulators have become up to 80% more energy efficient;
- A more energy-efficient pump seriously improves the energy consumption of any house, without any construction work;
- Energy efficiency will become increasingly important when selling a home;
- Energy-efficient pumps also help eliminate noisy pipes.

Contact: Sales Department, Grundfos (UK).  
Tel: 01 - 408 9800;  
email: info@grundfos.com

## Grundfos Energy-Saving & Waste Drive Nets EMAS Award







# Energy-Efficient Showers To Suit All Lifestyles



**E**stablished over 80 years ago and recently acquired by Kohler Co, the leading American manufacturer of bathroom and kitchen products, Mira Showers is the market leader in its field. With a product range sold throughout 40 countries worldwide, Mira Showers satisfies the needs of both domestic and commercial shower users. It developed the world's first thermostatic shower in 1937 and since then innovative design, engineering excellence and rigorous attention to detail has characterised the pioneering product ranges it has produced year on year. This year is no exception and featured here are samples from the newly-introduced Autumn 2007 Collection which is now available in Ireland.



Mira's new innovative ECO handset is sold as a stand-alone unit and is suitable for use on mixer and power showers, but not electric models. Its unique design reduces the amount of water normally used by up to 75%, which in turn means a significant saving on energy used to heat the water.

The adjustable ECO handset offers three aerating spray modes that reduce water consumption while still giving a great performance. The "ecoefficient" technology uses a Venturi principle –introducing air without a pump. Mixing air with the water spray creates larger droplets filled with air bubbles. The droplets explode on impact and produce similar coverage to conventional, finer sprays giving the impression of increased volume of water and a refreshing shower.  
person per day.

Available in white and chrome, the ECO handset is competitively priced while each box includes an IOM Guide with information about water saving and how Mira ECO benefits the consumer.

t: 1800 818 637

e: [technical@mirashowers.com](mailto:technical@mirashowers.com)

The ingenious new Elevate is a shower and storage solution in one. Ideal for small bathrooms and shower cubicles, Elevate features a generously-sized integral storage compartment, a stylish coloured soap dish that is removable for ease of cleaning, and a shower designed with a flat top surface which acts as a useful storage shelf. In addition, the integral storage compartment features a removable mirror ideal for shaving, while hanging space has been designed into the bottom of the sidebar for shower cloths and sponges.



There are two models offering a choice of 9.5kW or 10.8kW power options. Both models feature "Select & Forget" controls, push-button start/stop, power indicator, unique graphics and come with a two-year guarantee.



Mira Orbis is aimed at the design-led, upper-mid-market electric shower sector. Thermostatically controlled with safe maximum temperature limit for added user protection, this high-performance product is available in 9.0kW, 9.8kW and 10.8kW models, each with three power options. The inclusion of a clock is a first.

There are many installer benefits, including top, bottom and back-entry pipework for flexibility; removable filter for ease of servicing and maintenance; and Clearscale heater tank that reduces the level of limescale build up by up to 50%.

Mira has introduced a new range of miniature mixer showers – thermostatic mixer valves that are half the size of conventional mixing valves, yet deliver the same great performance. Included are built-in and exposed single sequential control valves; built-in and exposed concentric control valves; and a new format of exposed vertical dual control valves.

To cater for retrofit installations of a standard sized valve, an adjustable elbow pack is available, allowing the Minilite and Miniduo inlet centres to be adjusted from 133 to 153mm. All are simple to service and maintain.



# face to face

KENT PETERSON



Kent Peterson with Seamas Homan

*Our greatest advances will not be in our discoveries - but rather, in how we apply those discoveries to benefit mankind*



Robert Holland with Eugene Phillips

It is always something special when an ASHRAE President comes to Ireland but Kent Peterson's recent visit proved exceptional. His mere presence generated a great deal of excitement within the industry but it was the message he had to impart which was so captivating. Consequently, this month's Face to Face features a direct message, and plea, from Mr Peterson based on extracts from the address he delivered to services engineers at Engineers Ireland on 8 October last.

*I would like to discuss global issues that are impacting the HVACR global community and share possibilities for a more sustainable built environment. I would also like to take us on a journey through possibilities for a more sustainable built environment.*

*A thin blue envelope of air swathes our planet, and that atmosphere makes possible life as we know it. Now that essential, invisible barrier is loading up with gases that help trap solar heat, warming the planet's surface. If the earth were the size of a soccer ball, the atmosphere would be about as thick as a sheet of paper. It has become clear that climate change is an immediate threat to our planet that must be addressed now. The interesting fact is it is not just scientists that are taking notice. As nature is crossing its tipping points, the general public seems to have reached its own tipping point.*

*Everybody is affected in one way or another by buildings – we are born in them, we live in them, we work in them and, in many cases, we are healed by them. Collectively through our work, we have been able to provide comfortable, healthy and safe buildings that have substantially improved the quality of our lives.*

*On the flip side, the energy consumed by these buildings is helping fuel a new crisis — a crisis of global energy availability and increasing greenhouse gas emissions. In the words of Stanford Economist Paul Romer: "a crisis is a terrible thing to waste". The US Energy Information Agency recently reported that world energy consumption is projected to grow by 71% from 2003 to 2030. Oil is forecasted to remain the dominant energy source with coal forecasted as the primary fuel for generating electricity. Worldwide energy use is also increasingly becoming more carbon-intensive.*

*While energy prices are continuing to rise, the true costs are even higher when we consider its impact on global warming, the environment and our children's future. Most of us know how fuel-efficient our automobiles are, whether it is expressed in mpg or km/L. But what about the buildings we design, operate, or*

# face to face

et al.: BS News

KENT PETERSON

*"No challenge is too great for engineers and scientists. We are trained to be creative problem solvers. When it comes to solutions, simple is better. Elegant is better still. Elegance is simplicity found on the far side of complexity."*



*use; who has a clue on how much energy they consume in a year per sq ft or sq m? I suspect very few.*

*The fact is the buildings and systems we provide consume enormous energy – both for construction and operation. Residential and commercial buildings already account for a vast amount of total primary energy use; roughly 40% in developed countries. Moreover, the built environment continues to expand around the world. More and more people are seeking to improve their quality of life as the world population increase continues to drive demand for more buildings. This outlook, along with global concern regarding climate change, has created a sense of urgency for positive action.*

*The path to global sustainability is forcing us to seek dramatic improvements in building energy performance that will stretch our imaginations. I view this crisis is a tremendous opportunity for the building industry. We have an opportunity to show the world we can provide the innovation needed to substantially reduce energy consumption in the built environment. We must learn to couple our imaginations with our architectural and engineering skills to provide this innovation.*

*Energy efficiency should always be the elegant alternative to fuel consumption.*

*ASHRAE is committed to advancing the sustainable built environment. We have publicly stated our vision to continually improve building energy performance with the ultimate goal of market-viable, net-zero, energy buildings*

*by the year 2030. As I see it, the building industry needs to be part of the world energy solution and not part of the problem. I believe we have the responsibility to use our leadership and apply our knowledge and experience to provide effective, practical, and innovative solutions for a sustainable built environment.*

*No challenge is too great for engineers and scientists. We are trained to be creative problem solvers. When it comes to solutions, simple is better. Elegant is better still. Elegance is simplicity found on the far side of complexity. It is the elegant solutions that we must seek to provide high-performance buildings that can be maintained and operated efficiently. Elegant solutions are all around us, waiting to be discovered. But they do not come easy. They require a working knowledge of the forces at play, and the obstacles in our way.*

*The fact is obstacles will always be in the path of progress. Uncertainty, risk and failure are all part of innovation and sometimes the price for the wisdom we need to gain. We must question the status quo, investigate the possibilities, and use the need for greater energy responsibility to vastly improve new and existing building performance.*

*ASHRAE has a long history of improving building energy efficiency. Automatic temperature regulation to achieve efficiency was a topic of discussion back in the 1890s. In the 1930s, energy savings from the use of storm windows and doors were investigated. In the mid-1970s, ASHRAE mounted an extraordinary effort to develop the United*

# face to face

KENT PETERSON



*"We must question the status quo, investigate the possibilities, and use the need for greater energy responsibility to vastly improve new and existing building performance."*

*State's first energy conservation standard for new buildings, ASHRAE Standard 90. There is so much in our history to commend, but there is also a need for us to avoid self-satisfaction.*

*Overshadowing everything else is the question of conservation of natural resources. For how much longer are we going to waste resources to save first-cost only of buildings?" This is a question posed by S R Lewis, the President of ASHVE in 1914 – almost 100 years ago! How would we answer him today? I would tell Mr Lewis that ASHRAE is again invigorated about its duty in promoting responsible use of our natural resources and the advancement of sustainable buildings.*

*ASHRAE is committed to providing aggressive energy efficiency improvements in new and existing buildings through our standards, guidelines, and other publications. While ASHRAE Standard 90.1 provides the code minimum in the United States, we must provide guidance to build buildings more efficient than code through documents such as the ASHRAE AEDG series.*

*We are developing new sustainable building standards for commercial buildings and healthcare facilities. Standard 189 addresses energy efficiency, the building's impact on the atmosphere, sustainable sites, water-use efficiency, materials and resources, and indoor environmental quality. Because water is our most precious resource needed to sustain life, we are also starting on a new standard, Standard 191P, specifically focused on water conservation that will address water-use efficiency through water*

*conservation measures implemented during design and construction of projects.*

*We are continuing to publish best-practice methods for reducing building energy consumption beyond code requirements in our expanding series of advanced energy design guides. These guides provide prescriptive approaches to provide high-performance buildings.*

*We need to show tangible and consistent results in the actual performance of buildings. We need to set targets and goals at the beginning of the design stage and adhere to them in totality. The stated intent for energy efficiency at the design stage must transcend into the build and operate stages if we are to succeed in substantially improving building energy performance. It is time to close the loop.*

*ASHRAE is working towards this market transformation by seeking to collaborate with more organisations than ever before. ASHRAE, CIBSE & USGBC are working together to develop better building performance metrics that will allow us to better benchmark building performance.*

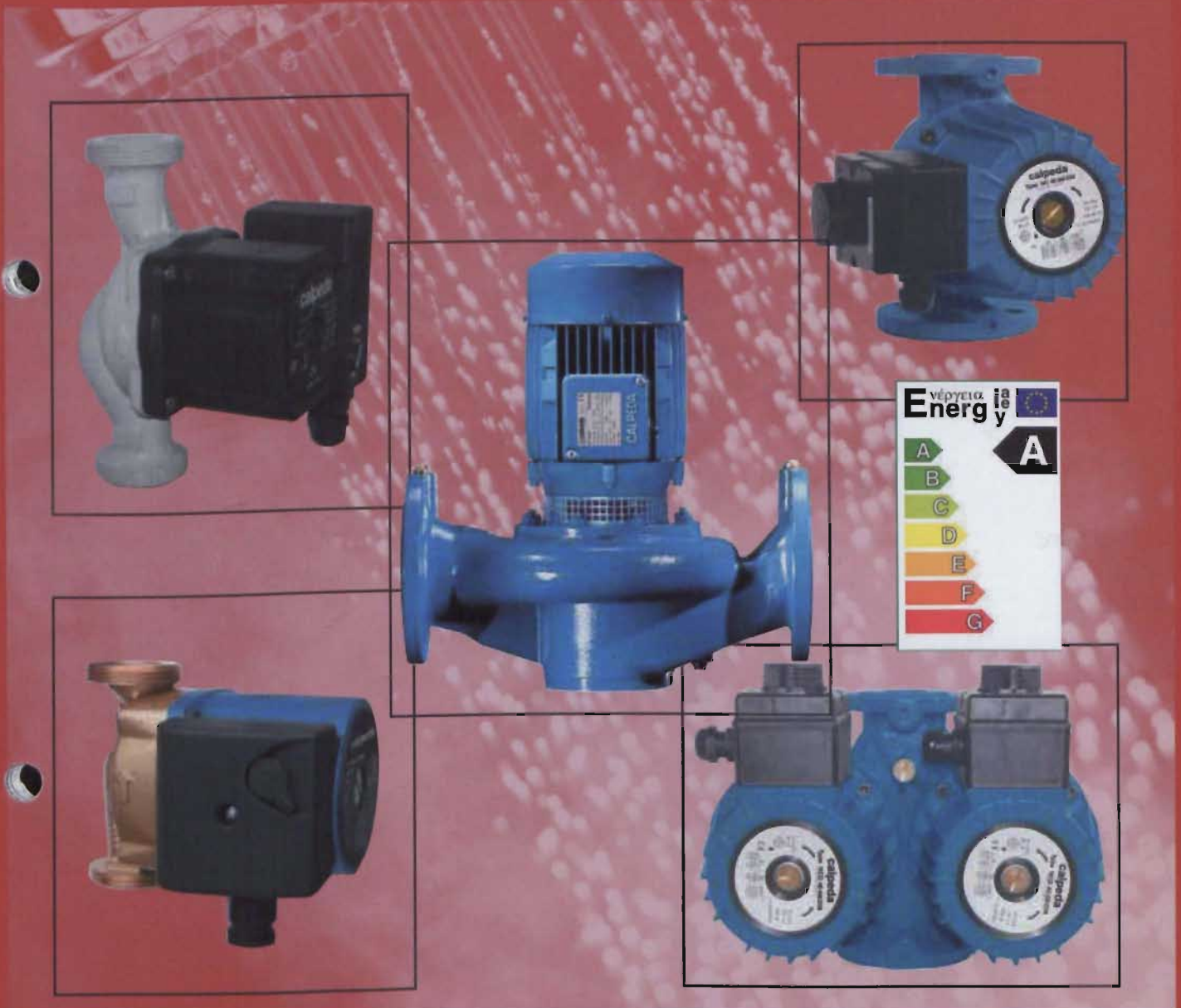
*This effort will provide a consistent method of measuring, expressing and comparing energy use, water use and indoor environment of buildings. This is to include at least the following metrics — energy, IEQ, water use, and carbon emissions. This project is scheduled to be completed by September 2008 and will lead us towards the further development of building performance based standards.*

NC, NR

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# The Complete Package

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# face to face

KENT PETERSON

*The future we seek will only happen with a sustained effort from all in the building industry – each and every one of us. It is time for us to move beyond simply selecting right-sized HVAC systems. Today, building design engineers must improve their knowledge in building envelope performance, thermal mass effects in buildings, passive solar, daylighting, human comfort and much more. We must become the experts in delivering high-performance buildings. The time has come for us to be more innovative in our thinking, more daring in our creativity, and more dedicated to our pursuit of best practices that will dramatically improve building energy performance. We have a responsibility to consider all the possibilities.*

*Finally, what if, beginning today, each of us accepts our responsibility to aggressively incorporate energy efficiency and so deliver better energy performance, year-after-year? Then collectively, building-by-building, city-by-city, we will substantially change how buildings use energy, to the point of reducing forecasted global energy use and carbon emissions.*

*Mankind has begun to understand that this crisis before us transcends our personal agendas and the time to act is now. Remember this, our greatest advances will not be in our discoveries — but rather in how we apply those discoveries to benefit mankind. We find ourselves at a pivotal point in the history of the built environment that is exciting, daunting and challenging. A period of necessary change; when the old and the new are forced to stand side-by-side to be compared; and when the accomplishments of the past will soon be replaced by our possibilities of the future.*

*Each of us must be willing to explore the possibilities. With an atmosphere of innovation, there are no limits to the impact we can have on the greater good of mankind and the well-being of individuals and industry alike. Think about the difference we can make.*

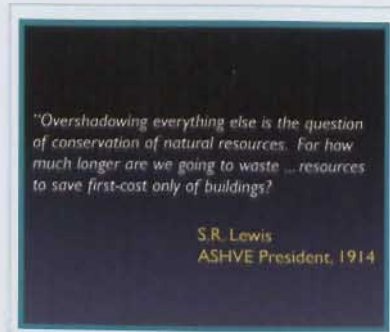
*That leads me to ask one final question that only you, the reader, can answer. If we are to change the world, each of us must be willing to become more innovative in our thinking, more elegant in our solutions, and more determined to deliver outstanding building performance. I encourage you to think about the difference you can make by providing a more sustainable built environment.*

*I will close with a quote from Heraclitus, the Greek philosopher from 500 BC : "It is not the strongest species that survive, nor the most intelligent, but the ones most responsive to change."*

*Let us work together to seek positive change to transform the global built environment so mankind can enjoy more blue skies in the future.*



Aian Duggan with John Furlong



*"Overshadowing everything else is the question of conservation of natural resources. For how much longer are we going to waste ... resources to save first-cost only of buildings?"*

S.R. Lewis  
ASHVE President, 1914



Seamus Kerr with Kent Peterson and Margaret Dolan, Chairman, CIBSE, Republic of Ireland Branch

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## Sustainable Energy Awards Participants Save €23 Million in Energy

Sustainable Energy Ireland (SEI) recently presented the Sustainable Energy Awards 2007 at a gala event held in Dublin's Crown Plaza Hotel. The Awards are intended to encourage, recognise and reward excellence in energy management in the industrial, commercial and public sectors and companies participating this year recorded average energy savings of 7%. This equates to overall cost savings of €23 million and the removal of 211,000 tonnes of CO<sub>2</sub> from the atmosphere.

The Awards are organised by SEI and sponsored by ESB Customer Supply. They attract entries from all sizes of organisations in both the Republic and Northern Ireland. The new category for 2007 — Energy Efficiency Project in a Small and Medium Enterprise — attracted the highest number of nominations across all of the categories.



Brid Horan, Executive Director of ESB Customer Supply with Minister for Communications, Energy and Natural Resources, Eamon Ryan TD; Pat Hanratty, Chief Ventilation Engineer, Boliden Tara Mines and David Taylor, Chief Executive, Sustainable Energy Ireland.

Originally held in 1996 as the Boiler Awards and renamed the Sustainable Energy Awards in 2004, the awards support three crucial aspects of sustainable energy — excellence in technology; excellence in organisation; excellence in people. In 1996, 65 sites were involved in the competition, accounting for an annual energy spend on fuel of €24 million. This year 225 nominations were received, resulting in 101 entries with a combined energy spend of €290 million.

Minister for Communications, Energy and Natural Resources, Eamon Ryan TD, was guest of honour at the event and he presented the winners with their awards. He said: "It is very encouraging to see such vigour and enthusiasm among the organisations participating in these awards. I'm aware that many of these



Brid Horan, Executive Director of ESB Customer Supply with Minister for Communications, Energy and Natural Resources, Eamon Ryan, TD; Neil McCarthy, Utility Engineer, Pfizer Ireland Pharmaceuticals, Loughbeg (accepting on behalf of Martin Corkery) and David Taylor, Chief Executive, Sustainable Energy Ireland.

organisations have entered in the past and have long-established programmes in place in the area of energy efficiency. However, it is the smaller companies, the SME's, which also account for a proportion of Ireland's CO<sub>2</sub> output. I am particularly encouraged to see these represented so well in the awards. Energy management practices are not just the preserve of large industry with dedicated resources and teams but a commercial imperative for enterprises of all shapes and sizes."

Inchydoney Lodge & Spa, which secures 37% of its energy from a renewable resource, won the Award for Renewable Energy Project. The hotel developed a combination system of solar panels, wood pellet boiler and heat recovery system which will reduce the hotel's annual fuel bill by over €50,000 and save 424 tonnes of CO<sub>2</sub> from going into the atmosphere annually. In 2006 energy consumption decreased by 8.7% despite an increase in the hotel's activity.

Martin Corkery, Pfizer Ireland Pharmaceuticals, Energy Team Leader, based in Loughbeg was awarded the prestigious title of Energy Manager of the Year. The judges acknowledged Mr Corkery's long and distinguished track record in energy management, including his role in Pfizer's recent certification to IS 393, the Irish Energy Management Standard. In 2006 eleven



Brid Horan, Executive Director of ESB Customer Supply with Minister for Communications, Energy and Natural Resources, Eamon Ryan TD; Philip Crowe, Director, MCO Architecture and David Taylor, Chief Executive, Sustainable Energy Ireland.



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major energy saving projects were undertaken at Pfizer Loughbeg under Martin's supervision. These and other projects contributing to the achievement of IS 393 resulted in a CO<sub>2</sub> reduction of 2,254 tonnes for the site.

Diageo, St James Gate Brewery, Dublin received the award for Coordinated Energy Management Programme for its extensive energy management programme undertaken during a period which also saw significant increases in production at the plant. Major efficiency gains were delivered, with the plant achieving cost savings in excess of €2 million and carbon dioxide emission savings of over 80,000 tonnes.

David Taylor, Chief Executive, SEI said: "These awards are an important reminder of the achievements of business in Ireland at a time when energy and climate change are high on the political agenda across Europe. We now have tangible evidence that the level of savings achieved by companies involved in our large industry programmes, such as LIEN and IS 393, are also possible in their smaller counterparts. This year SEI will have worked with almost 1000 businesses of all sizes and in all sectors, all striving to reduce energy costs and, in so doing, enhance their competitiveness and the growth prospects of the economy."

Brid Horan, Executive Director of ESB Customer Supply, said: "Energy efficiency is now a crucial aspect of the energy debate. There is an onus on all suppliers to actively promote an energy-saving culture. These awards have never been more important. They stimulate and encourage energy savings initiatives that can become part and parcel of every business strategy."

Sustainable Energy Awards 2007 winners are: —

**Energy Efficiency project in a Small and Medium Enterprise**

Spring Grove Services, Millfield

**Energy Efficiency project in a Large Enterprise**

Boliden Tara Mines

**Renewable Energy Project**

The Lodge & Spa at Inchydoney Island

**Energy Awareness Campaign**

PacificCare International Ltd

**Energy Service or Supply Company**

Eirdata Environmental Services Ltd



Brid Horan, Executive Director of ESB Customer Supply with Minister for Communications, Energy and Natural Resources, Eamon Ryan TD; Noel McDonnell, Spring Grove Services, Millfield and David Taylor, Chief Executive, Sustainable Energy Ireland.



Brid Horan, Executive Director of ESB Customer Supply with Minister for Communications, Energy and Natural Resources, Eamon Ryan TD; Guy Dumbrell, Operations Manager, Diageo St James's Gate Brewery and David Taylor, Chief Executive, Sustainable Energy Ireland.

**Excellence in Building Design or Specification**

MCO Architecture/Mater Orchard Convent

**Coordinated Energy Management Programme**

Diageo St James's Gate Brewery

**Energy Manager of the Year**

Martin Corkery, Pfizer Ireland Pharmaceuticals, Loughbeg



Brid Horan, Executive Director of ESB Customer Supply with Minister for Communications, Energy and Natural Resources, Eamon Ryan TD; Susan Flint, PacificCare International Ltd and David Taylor, Chief Executive, Sustainable Energy Ireland.

# Wilo Celebrates 135 Years of 'Pumpen Intelligenz'

Wilo AG was originally founded in 1892 by Louis Opländer as a factory for copper and brass goods but, from 1920 onwards, extended into the heating and water supply areas. Over the following decades ground-breaking innovations were consistently brought to the market which helped to revolutionise building services. The company also changed its name to Wilo in 1928 after Wilhelm Opländer, the founder's son, took over the company. Today it has 6,000 employees worldwide, including those at its Limerick and Dublin operations.

Wilo is now one of the world's leading manufacturers of pumps and pump systems with a vast and diverse portfolio catering for all manner of applications. These include commercial buildings, municipal facilities, industry and private households.

Throughout its 135-year history it has been responsible for many industry innovations such as the development of the first circulation accelerator in 1928; completely oil-filled motors in 1950; the fully-electronic circulating pump in 1988; and high-efficiency pumps for heating, air-conditioning and cooling applications in 2001. This construction principle is thermally very robust and requires no additional cooling compared to glanded pumps.

Wilo reached a decisive step to more user convenience and energy efficiency in 1988 with the



Today's WILO AG was founded by Louis Opländer in 1872 as a factory for copper and brass goods.



In 2001 Wilo introduced the world's first high-efficiency pump for heating, air-conditioning and cooling applications. The "Wilo-Stratos" pump range, which are suitable for heating installations and for secondary hot water circulation in larger residential buildings, consume up to 80% less power, compared to conventional uncontrolled circulating pumps.

development of the first fully electronic circulating pump "Star-Wilo E25". With it the first "mechatronical" — a pump model consisting of mechanical end electronic components — was ready to go into production. Unlike uncontrolled pumps, electronically-controlled pumps adjust their flow rate to the actual system requirements, thus operating in a considerably power-saving manner.

Larger savings can be achieved with so-called high-efficiency pumps. Here Wilo was also the pioneer when the company introduced the world's first high-efficiency pump for heating, air-conditioning and cooling applications in 2001. The "Wilo-Stratos" pump range, which is suitable for heating installations and secondary hot water circulation in larger residential buildings, consume up to 80% less power compared to conventional uncontrolled circulating pumps. Since 2005 residential houses can also take advantage of the same energy-saving potential thanks to the introduction of the "Wilo-Stratos ECO".

In addition to multiple ground-breaking technical developments, Wilo simultaneously developed into a

modern, internationally-operating group of companies. This was done through organic growth via wholly-owned subsidiaries and the acquisition of established businesses such as the French pump manufacturer Pompes Salmson which was bought in 1984. In the new millennium Wilo continued its international strategy of growth by taking over the Korean pump manufacturer LG Pumps in 2000, as well as the Indian-based Mather & Platt Pumps Ltd in 2006. With the take-over of the EMU Group (Hof, Germany) in 2003, the Wilo Group has also strengthened its competence in municipal and industrial water supply, sewage treatment and sewage treatment plant technology.

Many years ago Wilo coined the German phrase "Pumpen Intelligenz" for the development of innovative pumps and systems. Worldwide this claim not only stands for products, but also for the experience, technical know-how and support services provided by the company.

Contact: Tony Cusack, Wilo Engineering.  
Tel: 01 - 061 229017;  
email: sales@wilo.ie.

# A1 — As Green As It Gets & Everyone Wins!

Ireland's first development of A1-rated homes are currently under construction on a site at Green Lane (coincidentally named!) in Callan, Co Kilkenny. From the outside they look like fairly traditional, terraced, three-bedroom homes but, inside they are "fully loaded" and have a "massive spec" to borrow some terminology from the motoring press.

The developer, Robbie Comerford of Inch Environmental Construction Ltd, has gone to some considerable extra expense to achieve the highest possible rating from Sustainable Energy Ireland (SEI) and has been guided through the process by Mark O'Brien from Energy365 consulting engineers.

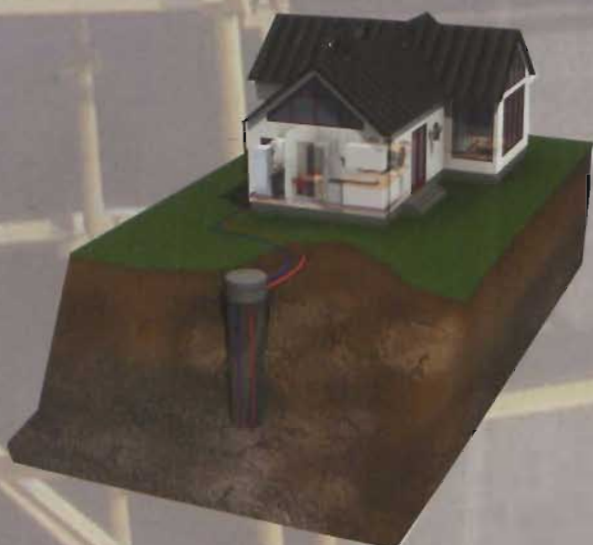
The homes are timber-frame but built and sealed to passive house standard. Windows are triple-glazed with U-Values of 0.2. The traditional fireplace of course is omitted in favour of a wood pellet stove which will take the air for combustion from outside.

Each house has a 90M

deep borehole to feed a Swedish heat pump from NIBE which has an inbuilt hot water system and is so quiet that it is located in the utility room. NIBE's neat-looking 1240 model heatpump would be easily mistaken for a fridge-freezer – there are no buffer tanks, external pumps or any unsightly equipment for an indoor installation.

The heatpump has a COP of 5.75 when the incoming well temperatures are at 7°C; an output of just over 5kW; and consumption of around 1kW. Heat production from the heatpump varies with the weather, so only the minimum amount of energy is used. Hot water runs on priority at a higher temperature with everything managed from a built-in computer on the machine.

Heat distribution in the houses is through Unipipe floor heating systems with digital individual room temperature control. Unipipe, who provided the heat pumps, has also designed the floor heating to only need water





temperatures of around 35°C at an outside temperature of -3°. Keeping the heat distribution temperature so low also maximises the COP of the heatpump process.

Each house also features rain-water harvesting systems, which has nothing to do with the energy rating as such, but shows the builder's total commitment to following the best environmental practice.

Heat recovery ventilation from Pro-Air removes the stale air and pre-heats and filters the incoming fresh air. This is important for such well-sealed buildings which also feature Jacuzzi baths and steam showers!

Achieving an A1 rating is probably impossible without some form of micro-generation and in this case that comes in the form of built-in photo-voltaic roof tiles from Solar Century. There are 36 tiles disguised into each roof which can produce up to 1.9kW of electricity at peak sunshine.

Even the street lighting is low-energy, powered by wind and

solar voltaic. Mark O'Brien from Energy 365 has calculated the average running cost for heating and lighting for each house to be in the region of just €350 per annum, heating and hot water making up €220 of that figure. The CO<sub>2</sub> total output from each house comes to 1.5 tonnes, a 70% reduction on current standards.

With such low running costs, these houses must be seen as an absolute steal with an average price tag of just €300,000. Of the 16 houses, 10 are already sold and Inch Environmental has more schemes about to come on stream using this model. Robbie Comerford says that despite the additional investment, he will still turn a modest profit on his scheme, and is prepared to take the gamble on his first low-energy venture to create the market for future developments.

Instrumental in getting a high energy rating was how the heat pumps and equipment are entered in the DEAP program. Up until a couple of weeks ago, one had no choice but to enter

a default efficiency in the program of 320% (representing a CoP of only 3.2) ... in other words all heat pumps were penalised with the same (low) CoP rating. However, at the last SebNet meeting in the Crowne Plaza, Santry, SEI acknowledged this anomaly and announced an interim method of calculation to allow for the higher efficiencies of different manufacturers. The calculation method, which takes an average of three temperature set-points, is interim until the different manufacturers submit independently-accredited test data and place their machines onto SEI's HARP Database, the official resource for boiler and heatpump performance ratings.

Contact: Paul O'Donnell, Unipipe (Irl).  
email: paul@unipipe.ie;  
Mark O'Brien, Energy 365.  
email: mark@energy365.ie



## Radiators & Controls

# 'energy efficiency of heating systems improves with water treatment'

Sentinel, one of Europe's leading chemical water treatment providers for domestic heating systems, has published extracts from the first ever independent research programme into the benefits of chemical water treatment — to their knowledge, anywhere in the world — undertaken on their behalf by Gastec.

This is particularly relevant in the light of the UK Government's Domestic Heating Compliance Guide which was published in relation to the Building Regulations for Conservation of Fuel & Power (Approved Document L – England and Wales) which came into last year. Vitally, the Guide specifically requires the use of chemical inhibitors for new build heating systems and when a new boiler is fitted to an

existing heating system.

The Guide says: "Central heating systems should be thoroughly cleaned and flushed out before installing a new boiler. During final filling of a system, a chemical water treatment formulation should be added to the primary circuit to control corrosion and the formation of scale and sludge."

Research confirms that sludge build-up in radiators on a normal domestic heating system can reduce overall effectiveness by as much as 15%. In addition, it says that proper cleansing of a system using a chemical additive to "break-up" sludge deposits, combined with a power-flush of the system, will result in greater uniformity of radiator temperature and result in a reduced risk of

system hydraulic imbalance. This in turn should lead to an increase in overall boiler energy efficiency of 2% — an increase that is substantial enough to turn a boiler effectively operating within SEDBUK Band 'B' (between 88-90%) into an operational Band 'A' boiler.

It is important to stress that the research relates to the use of Sentinel products — not chemical water treatment products per se — as many of the products on the marketplace can be of inferior quality with very little active chemical ingredient.

The research project was based around a purpose-built replica of a simple domestic installation, comprising a 11kW condensing boiler and five radiators at two levels. The radiators were all extended-surface, single-panel, units fitted with two lockshield valves. The hydraulic load of the system was accurately balanced.

Although the research became more complex as it proceeded to address a wider range of situations, the original concept was simply to start with a clean system and determine its thermal efficiency. This was then progressively fouled by the addition of sludge taken from existing central heating systems and the effect of this on thermal efficiency monitored.

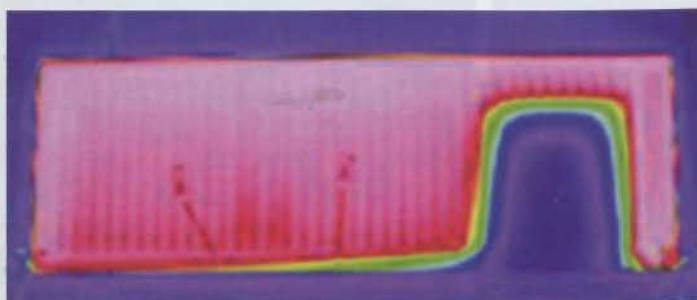
A new boiler was

subsequently fitted, and the new efficiency level measured again. This corresponded to retrofitting a new boiler without power flushing the system. The system was then power flushed and the performance with the new boiler measured again. Finally, Sentinel X100 corrosion inhibitor was added and a long-term study of the performance of the system undertaken.

Sentinel's products are designed to clean and protect residential central heating systems. They improve system efficiency, reduce gas consumption and carbon dioxide production, and prolong the life of residential heating systems.

Sentinel's Mark Walker is delighted that the research has proved what the company has been saying for many years. "We now have indisputable proof that using the correct chemical water treatment products, in conjunction with a quality power flush system such as our Sentinel Jetflush 4 unit, has a significant and measurable effect on energy efficiency in domestic heating and hot water systems. Using quality products will provide an important extra efficiency boost to a system."

Contact: John Lynch or Mark Walker, Sentinel. Tel: 0044 - 1928 588 330; [www.sentinel-solutions.net](http://www.sentinel-solutions.net)



Above — Thermal image of a radiator prior to Sentinel chemical water treatment; Below — the same radiator after treatment



# Radiators that make a fashion statement



The diverse and innovative Myson Décor and Column ranges of decorative radiators include a wide variety of designs to enhance the style of any interior.

The Myson Decorative Range combines aesthetic appeal with performance excellence. Radiators are no longer merely functional but can now become a focal point of interior design.

The Myson Decorative Range offers a stunning alternative to conventional Panel radiators, with the Horizontal, Vertical, Column and Plinth models, giving you the freedom to design your interior to your own individual taste.



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## Radiators & Controls

### 'choose copper — the healthy option'

According to Conor Lennon of IML, copper is the ideal complement to radiators when installing central heating systems. It is not just the integrity and proven track record that makes copper so suitable for today's marketplace, but also its health and safety properties.

"Iron is an essential element in the structure of the oxygen carrying chemical in the blood haemoglobin and copper is an essential element in the manufacture of haemoglobin", says Conor. He also says copper is required for many enzymes without which our bodies could not function.

Conor cites recent research which has shown that many bacteria which would normally settle and grow on plumbing materials are dramatically reduced when they try to settle on copper. He says copper consistently suppresses bacterial growth when tested with a range of naturally-occurring waters and at a variety of temperatures. The bacterium legionella pneumophila is said to be particularly vulnerable to copper.

According to Conor, copper tube and copper alloy fittings present an impermeable barrier to all organic materials as they are

solid metal components. This means that organic compounds such as insecticides, pesticides, herbicides, solvents, etc — which may come into contact with the plumbing system during remedial building work or decoration — cannot taint it or affect its integrity.

Indeed, research and ongoing clinical tests also indicate that MRSA transmission in hospitals can be reduced by replacing traditional steel surface contacts — especially bathroom taps, toilet-flush handles and grab rails — with copper versions.

Laboratory tests at Southampton University have established that the natural antimicrobial properties of copper and copper alloys



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

dramatically reduce the presence of MRSA compared with stainless steel, the most commonly-used surface-metal in health institutions. Now these findings are being put to the test in a real hospital environment. If the trial is successful, copper could be installed widely to cut the death-rate from hospital-acquired infections.

Selly Oak Hospital in Birmingham was chosen for the copper clinical trial because it is a multi-specialist centre with an advanced microbiology centre. One general medical ward has had all relevant surfaces and bathroom fittings replaced by copper versions while a similar ward next door retains its traditional metal fittings and will act as a control in the experiment.

If the laboratory results are successfully replicated, it is likely that thousands of hospitals across Europe will introduce copper alloy surface contacts and fittings. The hospital Trust's Deputy Medical Director, Professor Tom Elliott, says: "Potentially, it is very, very exciting if we find that copper actually works in a clinical environment, following the laboratory tests in Southampton and here in Birmingham".

The tests have already shown striking results. The

MRSA bacteria (staphylococci) on stainless steel remained fully active for days but on brass, an alloy of copper and zinc, they died in less than five hours. On pure copper the superbugs were eliminated in 30 minutes.

The Director of the Environmental Healthcare Unit at Southampton University, Professor Bill Keevil, says that copper suffocates the germs. "The metal reacts with the bacteria and inhibits their respiration; in effect it stops them breathing. In fact, if you look back in the literature, the Egyptians were using copper thousands of years ago to treat infections!" The tests also show that it is not just MRSA that can be killed by copper. The newer threat — the extremely resistant Clostridium difficile — can also be killed, as demonstrated by preliminary tests. Scientists are already considering wider medical applications for copper, including a possible defence against bird flu while experiments by the Southampton team have shown that the metal can kill the human flu virus.

Contact: Conor Lennon, Irish Metal Industries.  
Tel: 01 - 295 2344;  
email: conor.lennon@irish-metalindustries.com

# QUINN radiators



## QUINN Radiators guarantee high performance with the QUINN Compact Europe's most efficient Compact Radiator

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- Heat outputs from 956 - 14034 BTUs
- Excellent availability and sales support
- Manufactured in accordance to BSEN 442
- Individually tested to 10.5 Bar
- BOE connections 1/2 "BSP
- Durable Epoxy Polyester Powder coated finish RAL 9016

Quinn has for several years led the UK and Irish market in high end specification radiators on prestigious projects that define the ultimate in performance and looks, when it really matters it has to be Quinn.

Quinn Radiators are manufactured and distributed in the UK and Europe, to exacting standards, which mean the products are of the best materials, built by the most modern equipment and offer the best efficiencies.

For more information and advice contact us on  
**1800 882 332 (ROI) 0800 38 999 80 (NI)**

Head Office, Quinn Radiators Ltd, Celtic Lakes, Newport, Gwent, NP10 8ZY



## Radiators & Controls

# Honeywell TRVs — New Styles & Wireless Controls

Thermostatic radiator valves (TRVs) are good for comfort, good for saving energy and therefore also good for the environment. They maintain room temperatures and prevent radiators from overheating rooms.

A TRV regulates hot water flow through a radiator, but has no control over the boiler or central heating pump. So, if all TRVs have shut off because rooms are up to temperature, the boiler would keep firing just to heat the water in the pipes. To prevent this fuel wastage and unnecessary wear on the boiler, a room thermostat (or a programmer with an in-built temperature sensor) should be mounted in a room without TRVs, to switch off the boiler and pump when there is no longer a call for heat.

TRVs provide excellent room temperature control in individual rooms, provided they are installed so they can sense the real temperature of the room. A TRV should not be exposed to draughts or fitted where it can be affected by a heat source, such as a fire or direct sunlight. Nor should it be isolated from the airflow of the room by furniture or fittings – boxing off the radiator and its TRV is not a good idea!

In some cases performance may be better if the TRV head is fitted in a horizontal attitude. This is easy when installing Honeywell TRVs because they feature reversible flow – without any adjustment in the body – so there is no need to identify flow and return pipes. In addition to

conventional TRVs with pipe connections at right-angles, Honeywell offers "straight-through" versions allowing greater choice of installation positions.

The three latest styles of TRV from Honeywell are available in convenient RadPlan packs with matching lockshield valves, "ready to fit". The stylish and inexpensive new designs are the fluted VTL120; contemporary white/chrome VTL220; and elegant all-chrome VTL330.

Honeywell RadPlan packs combine great value with convenience at the merchant counter. There are straight-through or angled valves, and a choice of standard 15mm connectors or a "small bore" pack providing both 8mm and 10mm fittings in the same pack.

Honeywell also offers its HR80UK wireless controller head which, when fitted on to standard TRV bodies as part of a CM Zone wireless zoning system, enables a building to be divided into separate heating zones without cabling or plumbing pipework changes.

Animated examples of wireless zone control are on the web site at [www.cm-zone.com](http://www.cm-zone.com).

Radiators in each zone are adjusted automatically using wireless signals from a central CM Zone



One of the new stylish designs is the contemporary white/chrome VTL220

controller or a CM900 wireless programmable thermostat. Users can programme up to six time/temperature changes per zone each day, and a different programme each day of the week.

Each TRV fitted with the HR80 wireless controller head receives the same programmed set point as every other radiator controller in the same zone. If it is the only head in the zone, then it will be completely independent.

The local temperature adjustment available on all Honeywell TRVs is offered by the HR80UK head — the user simply turns the knob to override the last value transmitted by the central controller. When the central unit transmits its next set point value, the manually-adjusted setting on the radiator controller is overridden.

Contact: Honeywell Controls.  
Tel: 0044 1344 656125;  
email: [literature@honeywell.com](mailto:literature@honeywell.com)  
web: [www.honeywelluk.com](http://www.honeywelluk.com)



The three latest styles of TRV from Honeywell are available in convenient RadPlan packs with matching lockshield valves, "ready to fit".

# HDL Heating Distributors

et al.: BS News

32 North Park, North Road, Finglas, Dublin 11

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*Exquisite Styling*

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*Optimum Outputs*



## Radiators & Controls

### RA Manifolds Expand the Use of Radiators

Uponor Housing Solutions' new RA Manifold range is a unique system that allows thermostatic control of radiators without the need for TRVs. With comfort and controllability in mind, this range of manifolds allows control of individual radiators via wall-mounted thermostats.

These new units allow sophisticated controls to be incorporated into a radiator heating system by using thermal actuators mounted on the distribution manifold, similar to underfloor heating. There are a range of benefits associated with manifold plumbing in this way, efficiency being the most relevant in today's marketplace.

The system operates by using the information returned to the actuators by the strategically-placed thermostats. These only open the actuators when the heat is needed, keeping heat fluctuations to a minimum and improving comfort levels. The RA manifold allows each radiator to be manually adjusted or isolated off at source, giving the flexibility to heat selected areas easily.

The manifold is specifically designed for

radiator systems and can take water temperatures of up to 95°C. Uniquely, this also means that the system can be run in conjunction with Uponor's UFH, all controlled by Uponor's new control system – radio, alongside UFH.

Customers are increasingly using underfloor heating (UFH) on the ground floor of properties and radiators on the first floor. By using Uponor's latest control offering it is now possible to view and "set" the radiator and UFH system parameters from the one central point. This isolates each individual room/zone and reduces the temperature in times of inactivity or during the evening. It is also

possible to use the same radio frequency thermostats for the radiator system and UFH, utilising a choice of three different types of thermostat to suit a range of customer tastes.

Manifold plumbing has been used for a long time by plumbers to isolate runs of pipe utilising a flow and a return at each end of the run. The market has always seemed to take its lead from its European counterparts, where manifold plumbing has been the standard practice for many years. Manifold plumbing uses less fittings and therefore reduces the chance of any leaks. It also gives a more balanced flow

rate than a standard system.

All the first-fix equipment is located in a cupboard allowing for all the different loops to be identified, regulated and isolated, keeping them locked away from inexperienced hands.

Uponor believes it is extremely important to provide not just UFH but to ensure the client's radiator needs are also met. It is a common misconception that an installation must use radiators or UFH — why not have both? Uponor allows the client to have both heating techniques working in harmony to create the best living environment possible with energy-efficiency in mind.

Problems can arise when cold tap pipework is run through a floor fitted with UFH. However, Uponor expertise ensures the pipework is mapped out perfectly to give the best performance and uphold all health and safety aspects of running both UFH and manifold plumbing together.

Contact: Donal Stafford,  
Uponor Housing Solutions.  
Tel: 01 - 895 7430;  
email:  
hsenquiries@uponor.co.uk;  
www.uponorhousing solutions.ie



Uponor Housing Solutions' new RA Manifold range is a unique system that allows thermostatic control of radiators without the need for TRVs

# MYSON the made in Ireland brand

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

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

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



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TRV 2 WAY



Motorised valves



Matchmaster



Matchmate

heatingthroughinnovation.

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

## Radiators & Controls

# combining high-performance, energy-efficiency & aesthetics

The Radiator Company — whose Irish distributor is Heating Distributors — supplies a vast range of radiator designs and styles. Choices offered include its designer range, along with steel multi-column, aluminium, cast iron and kitchen ranges. There is also a convector range, a towel rail range, and a complementary valve collection.

Colour options are the standard white RAL 9010, plus the complete RAL range and special finishes.

That said, Heating Distributors is all about choice. Consequently, among the 70 plus radiators featured in its showrooms are models from other leading radiator manufacturers. These include the Aeon Collection from Ultraheat and the Expressionist range from MHS Radiators. The Aeon Collection comprises 34 radiators, all with distinct

aesthetics and engineered to the most exacting standards from the highest-quality stainless steel.

The Expressionist Range from MHS is of a similar high quality but has its own distinctive style. Apart from being high-performing and functional, all radiators in the range are innovative in design and have a very definite architectural feel.

Also featured are models from the renowned Licon range. For instance, Licon OK wall LST convectors are normal wall-mounted radiators with a long history of use in households, and public and industrial areas. The fact that they have a modern design, are simple to assemble and economic to run, has made them especially popular.

There is also the Licon PK floor convector designed to be fitted flush with the floor, and the Licon PKVT floor convector with a tangential ventilator.

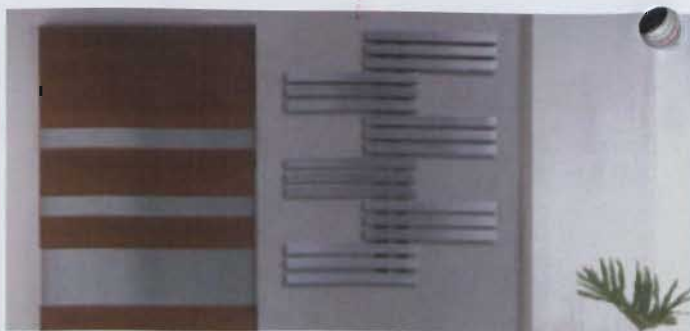
The core of all Licon convectors — the Licon OR heat accumulator itself — can also be used in a much wider range of applications. It is



Ancona with cast feet, two-column 25-section 500mm high radiator from Heating Distributors. Colour featured is mottled copper with antique copper crosshead valves.



The Hot Box from MHS Radiator's distinctive collection



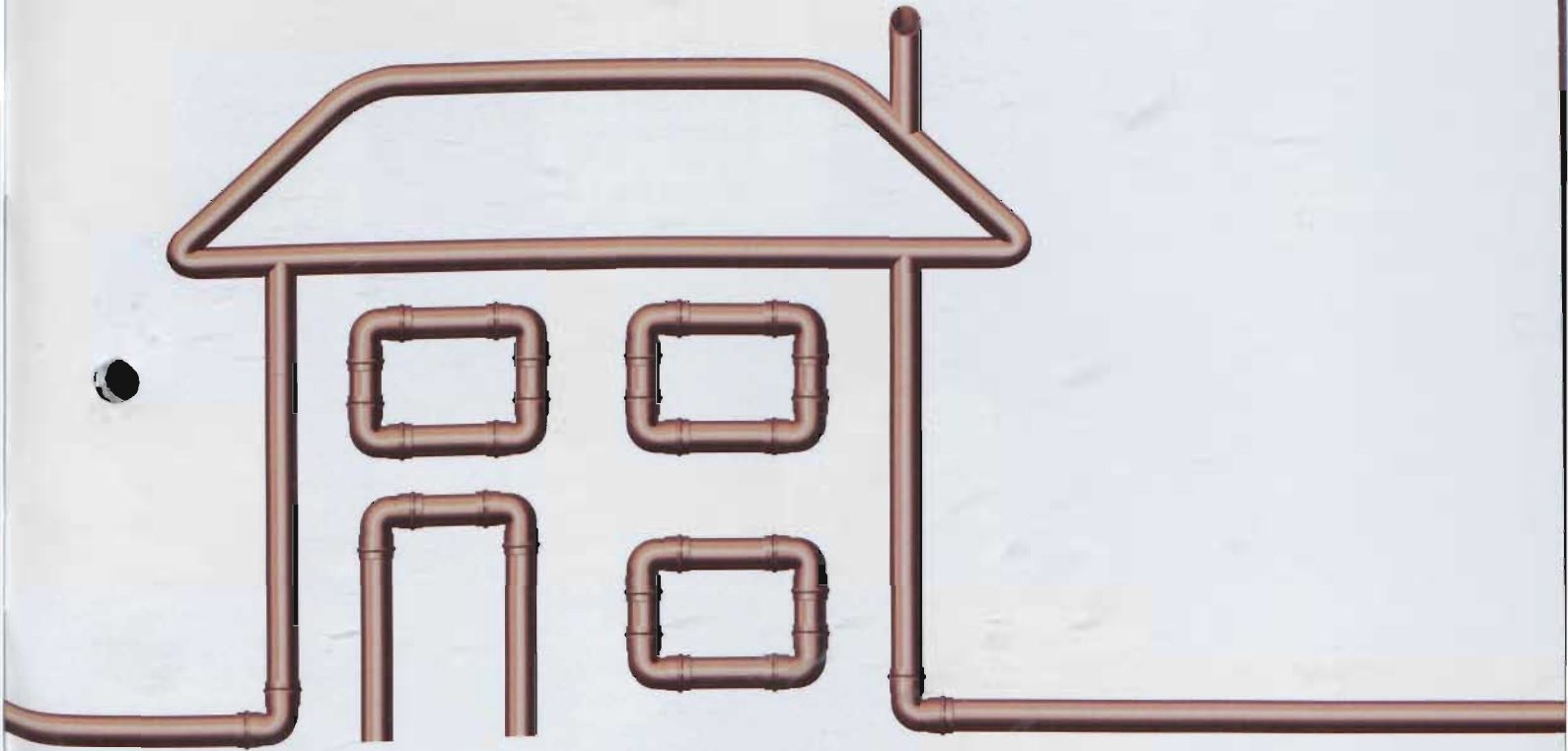
Elan, with its elegant stainless steel fingers, from the Aeon Collection.



The Licon Heat LST radiator available from Heating Distributors

suitable for placing individually and may be covered by almost any type of material to smoothly integrate them within the room.

Contact: Heating Distributors.  
Tel: 01 - 864 8950;  
email: info@heatingdistributors.com

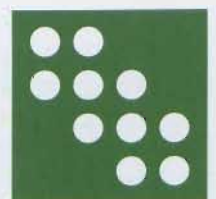


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Industries**



## Radiators & Controls

# quinn radiators' state-of-the-art plant in wales awarded three major quality certs

Quinn Radiators' new state-of-the-art manufacturing plant in Newport, Wales, has to date been awarded two major European quality certification marks – the BSI Kitemark Licence and the BSI Quality Management Systems Certificate, as well as the NF quality mark, the leading product certification mark in France.

This quality mark, which is widely known throughout Europe, recognises Quinn Radiators compliance not only with current standards, but also with additional quality criteria that will meet consumers' needs. This certification allows the company to supply into new markets within Europe, opening up more opportunities for the brand to grow and develop in previously unexplored territory.

Quinn Radiators was awarded the Kitemark Licence for the production of radiators for central heating systems in residential buildings, and the BSI Quality Management Systems Certificate for its internal quality review systems.

Quinn Radiators, one of the industry's leading radiator companies, has invested £130 million in its manufacturing facilities, products and services to its customers,

with the bulk of the investment being made at its Newport plant. The 1.2 million sq ft facility is one of the most advanced in Europe and, when fully operational in 2008, will employ over 400 people. Quinn Radiators also has operations in Lancashire, Belgium and Ireland.

According to Mark Smith, UK Sales Manager, Quinn Radiators, the awarding of these quality certifications is a demonstration of the company's commitment to producing high-quality radiators at the right price. "We are delighted to have achieved these certification marks. The significant investment in our Newport plant means that our customers will be able to

source a range of superior, well-designed and efficient radiators at affordable prices," he commented.

In order to be awarded the BSI Kitemark Licence, Quinn Radiators had to comply with BS EN 442, which is the European standard for radiator manufacture, while the Quality Management Systems Certificate demonstrates that Quinn Radiators has a quality management system that meets the European standard BS EN ISO 9001 to ensure continuous product manufacture of a level of quality that meets BS EN 442.

The accreditation process involves BSI British Standards, the national standards body of the UK, regularly visiting the factory to

take samples from production, which are independently tested at a laboratory commissioned by BSI Product Services to verify continuing compliance and approval.

Founded over 35 years ago and the first UK radiator manufacturer to achieve the BS EN ISO 9001:2000 accreditation for quality manufacturing systems and procedures, Quinn Radiators is dedicated to providing its customers with best-in-class products at the right price. All its radiators are supplied under warranty for a period of 10 years, and have been manufactured and tested in accordance with the BS EN 442 standard.

Quinn Radiators is a division of the multinational Quinn Group which has operations in the UK in the areas of commercial and business insurance, glass, plastics and hotels. It employs over 5,500 people in Ireland, UK and Europe, and has been in business for over 30 years. It is seen as one of the most enduring success stories in Irish business.

Contact: Quinn Radiators.  
Republic of Ireland —  
Tel: 1800 882 332;  
Northern Ireland —  
Tel: 0800 38 999 80.



Quinn Radiators' state-of-the-art plant in wales awarded three major quality certs

# Cheque mate



## Keep ahead with Honeywell.

It's reassuring to know you can keep ahead of the game with Honeywell. We have been making energy saving controls for over 100 years. So people trust us to provide quality, reliability and good value.

Our top quality range of thermostatic valves includes the smart chrome-top VT200, as well as the VT15 and VT117. All offer energy savings and reversible flow bodies to give unrivalled performance, individual room temperature control and stylish appearance.

**Make the smart move - use Honeywell.**

**Honeywell**

**London Office**

Honeywell Control Systems Limited  
Honeywell House, Bracknell  
Berkshire, RG12 1EB  
Tel +44 1344 656000

Published by ARROW@TU Dublin, 2007

## Radiators & Controls

# optimum performance & maximum control

Myson is one of the most innovative producers of heating equipment in the business, offering heating solutions for every application and across all price ranges. Included are radiators, towel rails, fan convectors and underfloor heating including boxed kitchen/conservatory underfloor kits.

Myson produces something like two million radiators a year using exacting quality-control procedures certified to BS EN14001. Moreover, all products meet the European Standard BN EN442 and come with a 5-year warranty.

Potterton Myson (Irl) is the Myson distributor for Ireland and, in addition to carrying extensive stocks across the entire range, it offers comprehensive back-up and support by way of design advice and product selection guidance.

Brief details of the vast choice on offer are as follows:—

**Premier HE** — This is Myson's flagship range and is renowned as much for its famous round-top, safety-conscious, design as its excellent heat outputs. Stylish and elegant, it complements traditional

and modern environments alike;

**Premier Compact** — This is the newest radiator in the range and features the design strengths of a traditional roundtop with the added features offered by compact radiators. It is unique in the market and appeals to the discerning installer with an eye for aesthetically chic design. It is available ex-stock.

**Select HE** — Suitable for all types of room decor, the Select range of radiators is neat and tidy with a high-quality white gloss finish. Available as a radiator with matching grilles and side panels.

**Column Radiators** — Myson has always been to the forefront of radiator design concepts and this is especially true of its column styles which are decorative as well as being functional.

**Myson Décor** — This is a specially-developed decorative range. There are 52 standard sizes, including horizontal, plinth, column and vertical models in a wide range of colours with a variety of connections and fixings. Customised models can also be produced.

**Myson LST** — Myson's low surface temperature range ensures that the surface temperature of the radiator remains



The new Premier Compact radiator — think sleeker, less angular and more chic

under 43°C. Available in four heights and eight lengths.

**Towel Warmers** — The vast range of Myson towel warmers offers a choice of elegant units with design styles to meet every type of bathroom decor and budget. There is also a full range of matching accessories.

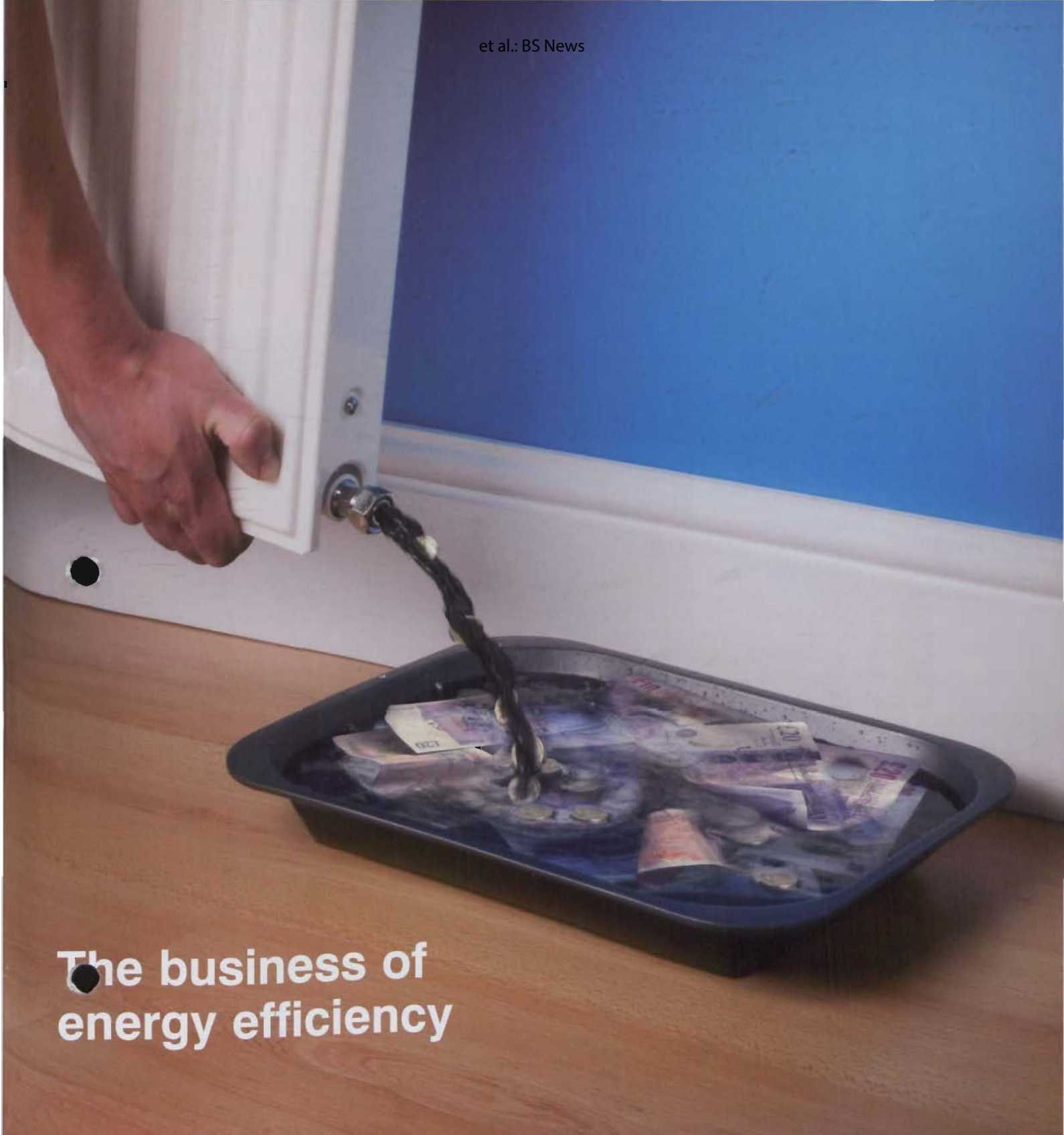
**Myson Fan Convectors** — Myson's convector range is for situations where instant heat is required. There is a choice of Hi-Line, Lo-Line, Slim-Line and Wallstrip models, all of which connect to the central heating system.

**Myson Controls** — The Myson controls range continues to expand from its origins in manual valves to today's offer of high-quality zone controls, electronic

programmers and stats. Then there are the market-leading products in manual radiator valves for domestic and commercial projects. In addition to these products, the recently-reopened factory in Newcastlewest Co Limerick has produced an Irish Pushfit range that shows the continuous commitment to new product development from the only manufacturer of valves and controls for the heating industry in Ireland.

Expect more news on new fan convector offers and valve products in January 2008.

Contact: Vincent Broderick, Potterton Myson (Irl).  
Tel: 01 - 459 0870;  
email: post@potterton-



## The business of energy efficiency

Sentinel is committed to reducing the environmental impact of domestic central heating systems. Research has shown that an untreated or poorly maintained system may experience a 2-3% reduction in boiler efficiency and up to a 15% reduction in overall system effectiveness. Independent tests have proven that simply cleaning a dirty system with Sentinel can restore this system effectiveness and boiler efficiency, and that using Sentinel X100 inhibitor in a cleaned system maintains this and prolongs the life of the system.

Sentinel solutions lower energy costs and CO2 emissions.  
Good for the environment, good for business.

\*Proven in independent tests carried out by GASTEC-CRE.

Register online at [www.sentinel-solutions.net](http://www.sentinel-solutions.net)

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# SENTINEL

HEATING EFFICIENCY



# Green Envy at Plan Expo Product Awards

**T**his year's Plan Expo Product of the Show Awards once again brought forward a wide range of very well researched and developed new building products and systems, all of which are clearly aimed at meeting the new essential targets being imposed by market forces and national and European regulatory requirements.

The building materials and product sectors exhibiting at the show put forward well over 100 new products, all of which vied for the coveted Awards in each category, and of course the supreme Product of the Show Award. Virtually every one of these products are innovative and are targeted at meeting the latest regulatory building requirements. Indeed, as the most up-to-date scientific and technical developments have been incorporated into the materials used, most products entered for the Awards actually exceed the current regulatory requirements. In many cases they significantly surpass them while also ensuring that building costs are kept down.

Home heating, and the ever-growing costs related to this, have continued to be strong driving factors for the development of newer and better building materials and heating systems. Ecological Building Systems were one of many groups demonstrating



Paul Burke-Kennedy, Assessor, Plan Expo Product of the Show Awards with Garret Buckley, Joint Managing Director, Expo Events; Bill Fleeton, Assessor, Plan Expo Product of the Show Awards; Brian Ash and Alex Byrne, Cell Energy Ireland; Tom Parlon, CIF; and Willie Crowe, Chairman of the Assessors, Plan Expo Product of the Show Awards

newer and better insulating, wall, roof and cladding products. An insulation material developed along similar lines to the technologies used for space research materials was shown to have achieved dramatically-improved thermal insulation values over the average thickness required with building materials currently used.

Also related to energy costs there were a number of improved boilers, stoves and fires using more economical fuels such as wood pellet and timber, and with smart systems for handling these fuels.

Cell Energy Ireland's "Building Integrated Solar Electrical Roof Tile" was the overall winner of the Awards. This product introduced the capability to produce electricity from an entire roof on which the tiles are more than just tiles; they have been developed through modern scientific

research to create a network of electrical cells that will generate electricity from the sun so that, through physics, this can be cabled for profit to the national electricity grid. This product is likely to be further developed over the next few years and has the potential to significantly reduce our dependence on imported oil.

Ready-to-use district heat control systems showed ease of installation and were capable of delivering significant economies where installed. Heat pumps, heat recovery systems, condensing boilers and wind turbine generating systems were also commended.

The task of applying a concrete screed is as old as the discovery of concrete, yet it took until now for someone to invent 'Easy Screed', a one-man operation from Jerry Beades Concrete. This newly-developed system

provides a superior product with much less labour and is ready for duty in a shorter time.

Equally labour-efficient is the 'Eco-joist' which is a structural latticed timber joist that is easily assembled for long spans and has ready access for services within the structure of the joist. Also on ecological lines the 'Pontos Aqua Cycle' delivers a very sensible complete water saving programme with great potential for national water preservation.

As the foregoing clearly illustrates, the building products supply sector is responding to challenge for more sustainable and energy-efficient building solutions. They were evident in abundance at Plan Expo and will, no doubt, be widely used in all types of construction projects over the coming months and years. Some of these products are featured in more detail in this report.

## MTD Heat Recovery Ventilation System

The MTD-ERV 140 energy recovery air handling unit from MTD Solutions is manufactured by Zehnder and was developed specifically for space-saving applications within residential and commercial buildings.



Bill Fleeton, Assessor, Plan Expo Product of the Show Awards with Claron King, MTD-Solutions and Tom Parlon, Director General, CIF

It is ideally suited for use in apartments and provides excellent air quality through the pollen filters, combined with heat recovery efficiency in excess of 90%. The result is optimum comfort, ease of use and very high efficiency.

MTD-ERV 140 maximises its efficiency by utilising high-performance, ultra-efficient, DC fan motors and can process up to 140 m<sup>3</sup>/h of air at an external pressure of 100Pa.

Maintenance is limited to regular filter changes. The more outdoor air the heat exchanger is required to process, the more regularly the filter needs cleaning. The heat exchanger can be easily removed from the unit for visual checking and, where needed, rinsed with soapy water.

## Mitsubishi Electric Heat Pump

Mitsubishi Electric's Ecodan heat pump is designed to provide domestic space heating and hot water while saving up to 30% in running costs and reducing CO<sub>2</sub> emissions by as much as 50%. With Ecodan, every 1kW of input energy is converted into an average of 3.6kW of output energy or heat, making it extremely efficient.

At the heart of Ecodan is a modern, inverter-driven heat pump compressor which converts free energy from the air and upgrades it to higher temperatures suitable for heating. The inverter control regulates the system so that heat output modulates to match the exact capacity required, meaning the boiler will only consume the exact energy needed at any given time. Also, by using lower flow temperatures a more consistent heat output is achieved which in turn means greater comfort levels.



Ecodan is a self-contained unit which operates on standard single-phase power supply, has a starting current of only 5amps, and is extremely quiet when running. It is ideal for use in a variety of house styles and sizes and its carefully-designed control system means it is suitable for use with both underfloor and radiator heating systems. Installation is simple — the only connections required are water and electricity.

# Plumb Lines

heard it on the grapevine ...



## KEVIN ST HONOURS STUDENTS

When you see the manner in which the Electrical Department at DIT Kevin St does its annual Student Awards, it is easy to understand why their courses are so popular and successful (see page 24).

The commitment of Kevin O'Connell and his staff on the night mirrors their dedication throughout the year and is

obvious from the respect shown in return by the students that they recognise and appreciate it.

Consultants, manufacturers and manufacturers' representative seeking suitably-qualified and motivated staff would do well to start with the list of these graduates.

### CONGRATULATIONS SIMON & BRIAN

My congratulations to Simon O'Brien and Brian Homan on the acquisition of CECL which adds significantly to their ability to provide specialist sustainable energy solutions. The team of Simon, Brian and follow directors Niall Coughlan and Tim Cooper (pictured right) represents a formidable force. However, I'm not so sure about the leaf!



### RACGS ENTERS RYDER CUP

Talk about getting notions above your station! Still, it is important to aim high so I suppose we have to commend RACGS on organising a Ryder Cup Team for 2008.

refrigeration industry Ryder Cup. Scheduled to be played in Blackpool in the UK on 14 August next, a team from Ireland will take on their UK counterparts in what is hoped will be the first of an annual event.

Not that it's *the* Ryder Cup you understand but the inaugural

Better get practicing guys if you want to be selected.

### BUILDING SERVICES TRIUMPHS

It was most encouraging to see building services products and companies feature so strongly at the recent Plan Expo Product of the Show Awards (see page 58). Plan Expo is Ireland's leading construction industry exhibition and a showcase for all things relating to the built environment.

Building services-related products featured strongly among this year's exhibits, thereby reinforcing the sector's growing importance within construction as a whole. The fact that they were among the premier award winners endorses that standing and confirms that building services has now truly come of age.

### SCOTTY FINALLY BOWS OUT

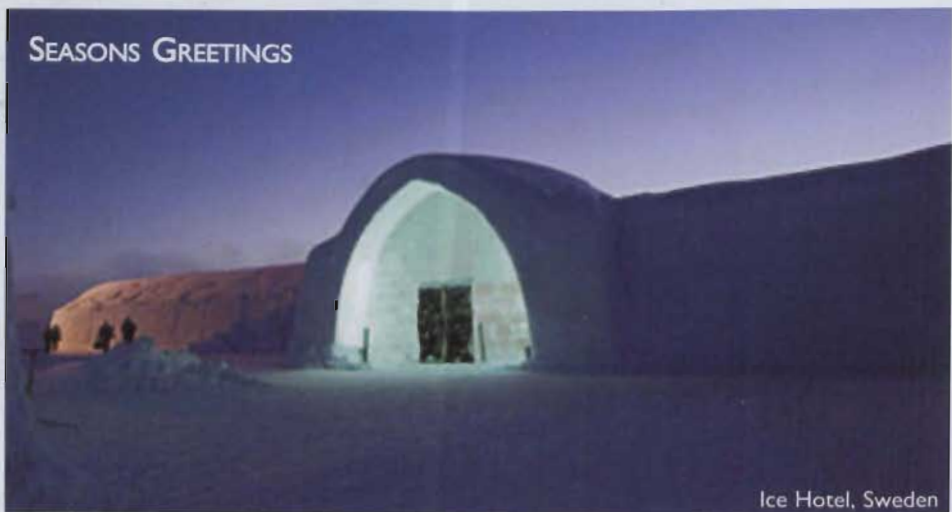
I know what you are thinking ... we've heard it all before. Tom Scott of Hevac has been talking of calling it a day for years but, when push comes to shove, he just trundles on.

Well, not any more. This time he is adamant that he has more than earned the right to stand back and take it easy and insists that he really means it this time. A gala send-off is planned for later this month and we will have a full report in the January issue.

PS: I trust you understand Tom, but I'll not wish you well in your retirement just yet!

### SEASONS GREETINGS

Louise, Joe and I wish all our readers a very happy and peaceful Christmas and a very prosperous New Year. We thank you for your loyalty and support throughout 2007 and look forward to continuing that relationship after the break.



Ice Hotel, Sweden

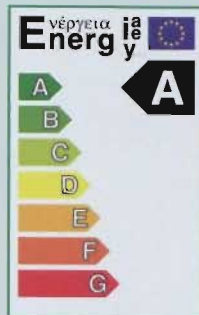
# There is a reason why Wilo pumps are coloured green.



1

2

3



*Wilo-Stratos ECO high-efficiency pump.*

Green stands for highest efficiency. This is what the energy label defines. The Wilo-Stratos ECO set the standard for the green energy class A. And now „Stiftung Warentest“, the internationally recognised, independent German institute tested nine heating pumps under the premise of absolute neutrality. 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. Exemplary? We call that Pumpen Intelligenz.



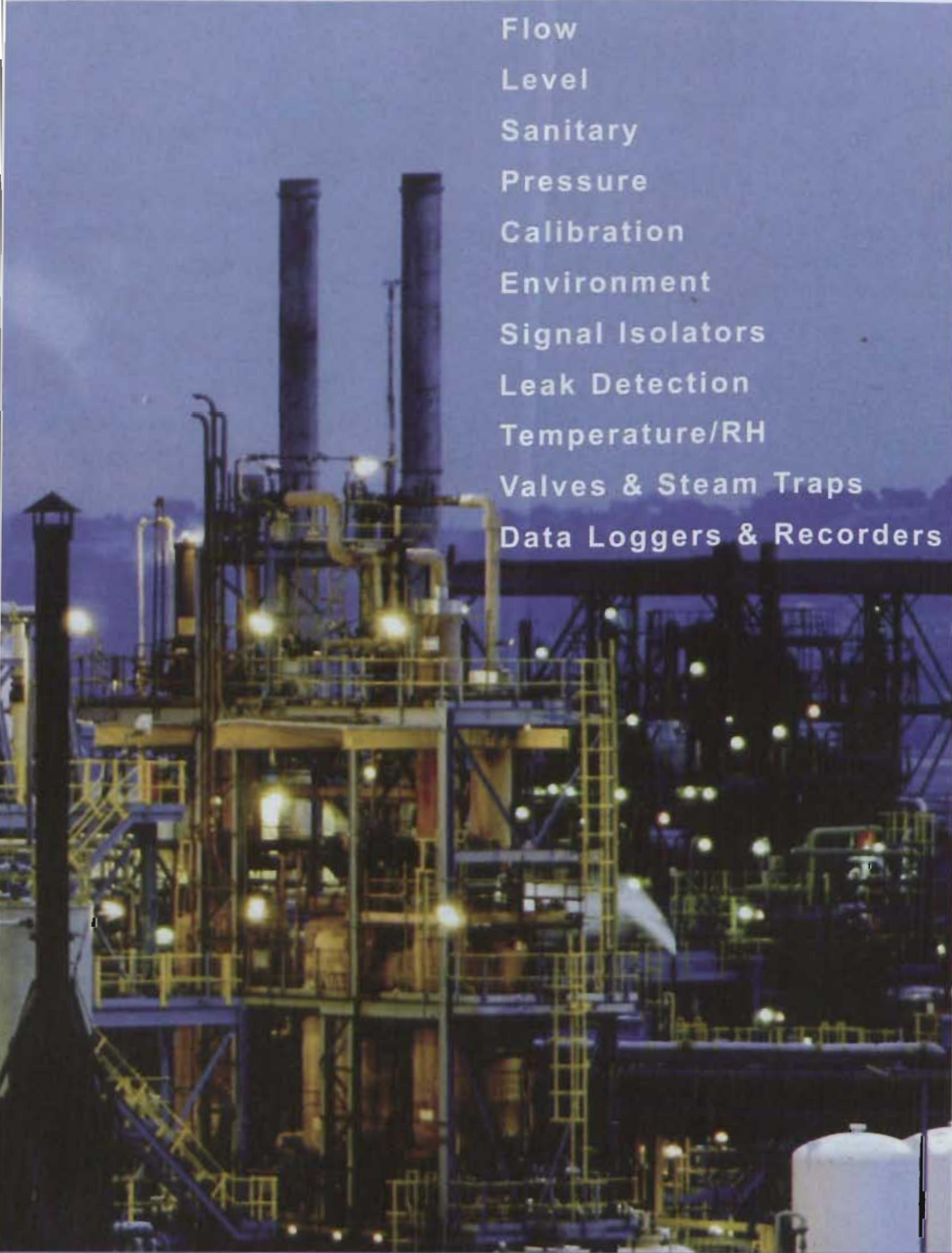
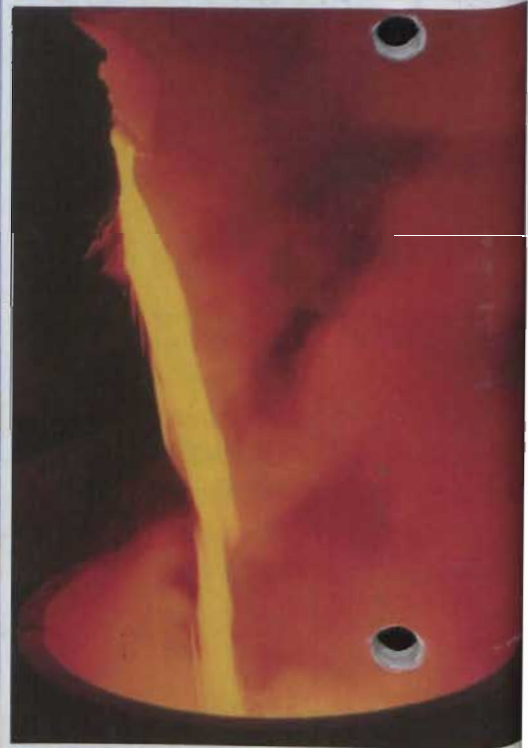
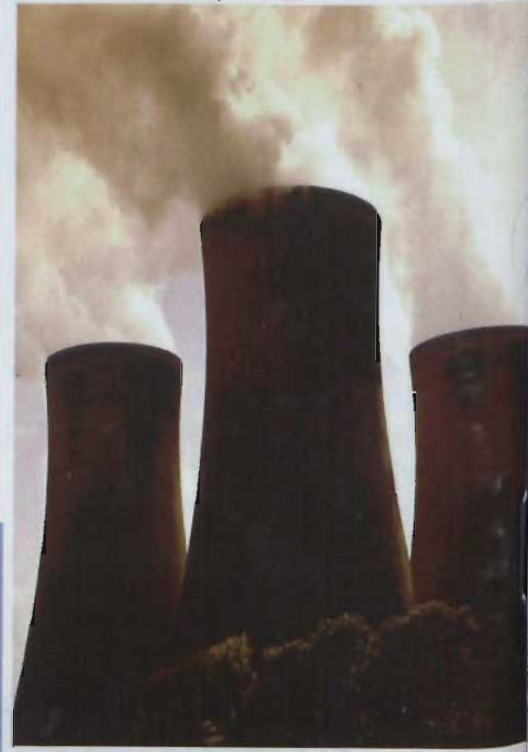


# Fit & Forget

## Instruments & Controls

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

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The Controls Centre,  
4 Walkinstown Road, Dublin 12.

Tel: 01 - 452 2355/452 2229

Fax: 01 - 451 6919

<https://arrow.tudublin.ie/bsn/vol46/iss11/1>

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

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