Services for Tall Buildings
CIBSE Conference 2008

Designing Building Services

Bathrooms & Accessories
Morning routines shouldn't take all day

Get your customers quickly through the rush hour with the Grundfos Sololift+ Range.

Add an extra bathroom with a compact lifting station from the Grundfos HOME PERFORMANCE range. Rely on them to handle WC, bidet, sink, shower, bath and washing machine wastewater in locations remote from the main soil stack.

The HOME PERFORMANCE range holds the solution to all domestic water supply, wastewater and heating needs. Visit www.homeperformance.grundfos.com or email info-ie@grundfos.com for further information.
Downturn Bites But is Not Fatal

While the downturn in construction has undoubtedly impacted on building services over the last few months, it is only lately that the real implications are unfolding. Recent weeks have seen a number of company closures and many contractors, especially the larger ones, have had to lay-off staff.

Nonetheless, this is to be expected at a time when trading activity tails off. It is vital that the industry at large puts the current slowdown into context. Construction activity in recent years has been extraordinarily high and those providing construction-related services and products geared up accordingly. With the recent fall-off some re-adjustment in employment levels was inevitable.

Talk of a 15/20% drop in trading activity is commonplace and may indeed be accurate. However, it is important to take much of what appears in the popular press — be it the print or broadcast media — with a grain of salt. The marketplace is not in freefall. Yes the domestic sector, especially apartment blocks, are no longer being thrown up by the thousand but, is that such a bad thing? Playing catch-up to satisfy exceptional demand has not left us with top-quality housing stock.

Despite the drop in construction activity from the exceptional highs of recent years the business is still buoyant. Many consultants are working flat out on projects which, for the most part, are expected to get the green light once the banks get their act together and start releasing funds once again.

The silver lining as we go forward may well be a better-organised, more professional construction sector with the bad habits picked up in the frenzy of recent years consigned to the bin.
energy expert opts for honeywell
Not surprisingly, Dr Michael Lamperth of Imperial College London — a world-renowned developer of energy-efficient vehicle technologies — also strives to be eco-friendly in his personal life.

So, just recently he equipped his family home with a super-efficient home heating system featuring solar heated hot water and wireless Honeywell heating control of individual radiators. These controls avoid energy wastage by heating rooms only when needed and then only to a preset temperature for the time of day.

"Rooms are grouped in heating zones, depending on when they are used," he explained. "The Honeywell wireless zone controls can change the temperature in each zone up to six times per day. They can also set a different time and temperature programme for each day of the week, which is useful at weekends when our heating needs differ."

Contact: Honeywell Environmental Controls. email: literature@honeywell.com; www.cm-zone.com

brooks appoints pj duffy
Wolseley Ireland has appointed PJ Duffy to the new role of Manager of the Mains, Drains and Civils Division for Brooks Group in the West of Ireland. He will be responsible for the overall growth of the new division, including purchasing, training and sales.

Mr Duffy joined Brooks Group in 1999 and has progressed through various roles prior to his current appointment. He will be based in Brooks in Ballina.

Wolseley Ireland is part of Wolseley plc, and also owns Heat Merchants, Tubs & Tiles and Electric Merchants.

atc circular fire damper
With fire protection now rightfully regarded as a critical aspect of all building services, system designers and installers are increasingly looking for high-quality fire-protection solutions which are cost-effective but high-performing.

The ATC Series CR60+MFUS fire damper range from Irish Fan Distributors is the perfect answer. Designed especially for small diameters of up to 315mm, they are fire-resistant for one hour.

Two half-round blades are held together by a fusible link. When the temperature rises above 70°C, the fusible link melts and breaks. Thereby the two half blades are released and the fire damper shuts, preventing smoke or flames from passing through.

The CR60+MFUS series units have an operating mechanism that can be operated manually. Optionally, a begin-and-end range switch can be connected to the mechanism, which has a blade-position indicator as standard.

Applications and benefits include closing ventilation ducts in the event of fire; fire-resistant for one hour; for air of -10°C up to temperature of fusible link; for air with RH 0-96%; range: 100mm to 315mm.

Full technical details are available on ATC's new website: www.airtradecentre.com

Contact: Billy Wright, Irish Fan Distributors. Tel: 01 - 051 - 852 404; email: bwright@irishfanist.com
GHP uses 10% of the electrical power of traditional VRF systems

- Powered by natural or liquid gas and only requires a single phase power supply (up to 70kW cooling and 80kW heating).
- Reduced CO₂ emissions.
- Reduced running costs.
- Eliminates expensive electrical power substations for new or refurbishment projects.
- Available as either a heat pump or heat recovery VRF system.
- 100% performance in heating, at low ambient down to -20°C - with no defrost cycles.
- Indoor units can uniquely control off-coil temperatures to prevent cold drafts and are connectable to up to 32 indoor units or AHUs.
- Rejected engine heat enables hot water reclaim and increased COP.

www.sanyoaircon.com

SANYO Air Conditioners. The natural choice.
flexicom & 'clearly solar' from Glow-Worm
The Glow-worm Flexicom high-efficiency boiler — distributed in Ireland by C&F Quadrant — incorporates a telescopic rear flue option and can be installed and commissioned without the need to remove the casing.

The small case size, zero compartment ventilation and small side clearances of the Flexicom units make them incredibly versatile and easy to site as they can be installed inside most kitchen cupboards.

The Flexicom range has a high grade cast aluminium heat exchanger giving excellent corrosion resistance and tolerance to debris, thanks to the large waterways. C&F Quadrant distributes the entire range of combi, heating only and system options, in outputs from 12kW to 35kW.

Glow-worm has also entered the solar marketplace with Clearly Solar. This is a flat-plate system that is fully compatible with all sealed system and open vent boilers which can be installed horizontally or vertically, in-roof, on-roof or on an A-frame.

The system consists of four products which are the major elements of the total package — a pressurised flat-plate solar collector which is said to yield an efficiency of nearly 82% and comes with a 10-year warranty; a twin coil unvented cylinder in 200, 250 or 300 litres capacity; a digital solar controller; and the Solar pump station.

Contact: C&F Quadrant. Tel: 01 - 630 5757; www.cfquadrant.ie

wavin 'revolutionises' chamber market
Wavin has introduced a new and innovative suite of chambers from 315mm access junctions to 1000mm manholes. Suitable for residential, commercial and industrial applications, the new inspection chambers and manholes are said to be watertight, easy to handle, require a shorter installation time, and need less maintenance than traditional materials.

Non-entry inspection chambers in the range include the Wavin 315 (WAJ), Wavin 450mm and the Tegra 600mm. All facilitate modern inspection or maintenance methods, such as CCTV and jet cleaners.

The 315 (WAJ) is the compact solution with 116mm and 160mm OD underground sewage and drainage pipe systems; the 450mm chamber is a modular system so the shaft can be built up to the required length; while the Tegra 600mm provides excellent resistance to ground movement and heavy traffic loads.

Contact: Wavin Ireland. Tel: 01 - 802 0202; email: ie_info@wavin.com

mark guinan appointed to polytherm board
Mark Guinan has been appointed a Director of Polytherm Ltd, the specialist underfloor heating and renewable energy company within the Hevac Group. Mark has 17 years' service with the Group and has been actively involved with Polytherm since it was established in 1999.

In his new role he will work closely with fellow-director Seamus English to further develop the Polytherm portfolio. The intention is to expand the range to include more eco-friendly products and to provide technical support and design assistance in respect of sustainable building services solutions.

Contact: Mark Guinan, Polytherm. Tel: 01 - 419 1990; email: markguinan@polytherm.ie
LG's ArtCool Gallery
photo changeable
range of designer air
conditioning products

Liebert HIROSS
Refrigerant 407c
Dualfluid
Freecooler
Chilled Water
Upblow/Downblow
Dx — Water Cooled
Close Control Air Conditioning
Capacity 4kW to 100kW

Carrier
Chillers
Heat Pumps
Packaged Rooftop Units
Minisplits
Fan Coil Units
Controls

Flexible and reliable
VRF system
trade news + product information

andrews water heaters re-launch in ireland

In the ever-changing business environment it is always exciting to introduce a new offer and Potterton Myson is delighted to announce not just one but two new product offerings. It has re-launched Andrews Water Heaters, one of the most recognisable names in commercial water heating, and Potterton Commercial, with new products under both brands.

Vincent Broderick told bs news: “As all markets move towards energy-efficient products, we are delighted to have the full support of these well-established brands behind our efforts. Andrews Water Heaters has been at the forefront of developing energy-efficient solutions for all project sizes and, in particular, the new MaxxFlo units. These offer the engineer and client peace of mind in an increasingly-competitive and energy-conscious market.

“In conjunction with the Andrews range, we have also introduced exciting new product offerings under the Potterton Commercial boiler brand and we are extremely optimistic that, as more projects move away from traditional cast iron to the new stainless steel heat exchanger models, we are in a unique position to address all market needs on boilers and water heaters.”

All contacts within the market sector can soon expect to receive a new product guide and information on the new Size-it disc for engineers and installers. For more information on these products readers can log on to www.andrewswaterheaters.co.uk and www.pottertoncommercial.co.uk.

Contact: The Sales Office, Potterton Myson. Tel: 01 - 459 0870; email: post@potterton-myson.ie

hevac appoints new directors

As part of its development strategy for the future, Hevac Ltd has appointed four new directors to the company's Board of Management. They are Karl Carrick, Mark Guinan, Seamus English and Garret White.

These appointments add a combined wealth of experience of 70 years in the heating and plumbing sector to the already experienced board.

For instance, Karl has been with the company for 25 years, Mark for 17 years, Seamus for 18 years and Garret for 10 years.

Uniquely, Hevac has managed to consolidate and reinforce the core strength of the Board from within while, at the same time, adding fresh input at senior decision-making level.

Contact: Seamus English, Hevac. Tel: 01 - 419 1919; email: seamus@hevac.ie

call 01 - 216 4406 for air conditioning utopia!

The gremlins were out in force during production of last month’s bs news with the result that there were a number of errors in the news pages.

Unfortunately, in our piece on the Hitachi dc Inverter Utopia IVX range of air conditioners — which come with a 5-year guarantee on the Utopia and Set Free models and a 3-year labour allowance — we gave the incorrect telephone number.

So, for air conditioning Utopia, readers should call Fergus Daly, Hitachi Europe. Tel: 01 - 216 4406.
GT Phelan has just launched its new easy-to-navigate website aimed at consultants, contractors and end-users. The new website incorporates the latest Toshiba products, sales brochures and technical literature, along with a gallery featuring high-profile projects. GT Phelan's full range of portable units are also shown.
Mark makes AHU selection & installation easy

Mark Eire offers a wide range of easy-to-install air handling units with several options to cater for a variety of applications. From a simple air intake unit to a fully automatic controlled air handling unit for internal or external use, Mark has a solution.

The modular frame construction consists of profiled closed tube profiles which are attached to each other using plastic angled connectors to create a stable frame construction. Individual cabinet modules can be installed in different ways — next to each other in line or above each other.

Key features and benefits of the range are:
- Economic to buy and run;
- Easy to install;
- Easy to service and maintain;
- Long lifespan;
- Flexible modular format;
- Optimal ventilation power.

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

Automated ball valves from Manotherm

The Series 3PBV three-way plastic automated ball valves from Manotherm are ideal for mixing or diverting services in industrial, chemical, irrigation, pool and spa applications, as well as for use with potable water.

The valves feature a 3-seat design for efficient automation, reinforced TFE seats and EPDM seals for longer life. These are housed in an all-pvc construction for heavyweight durability at a lightweight cost. Valves also come standard with field-selectable NPT or socket process connections.

The Series 3PBV is an economical automated valve package with either an electric or pneumatic actuator. Electrically-operated models are weatherproof, powered by standard electricity supply, and available in either 2-position or proportional control. The pneumatic double-acting actuators use an air supply to drive each of the actuator ports.

All are constructed of anodized aluminium and are epoxy-coated for years of corrosion-free service.

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

ITT Water & Wastewater Ireland appoints Pat Grogan

ITT Water & Wastewater Ireland has appointed Pat Grogan Field Sales Engineer for the Munster and Connaught regions. His main responsibility will be the development of sales in all of the company's business areas, including the municipal, industrial, construction and mining sectors.

Pat has extensive sales experience, holding previous roles as Sales Engineer for Dowding & Mills Engineering Services and Sales Manager for Overlander Trailers Ltd, where he held roles in business development and sales.

ITT Water and Wastewater is one of Ireland's leading providers of products, systems and processes to move, control and treat water, wastewater and other fluids. The four primary brands within the portfolio are Flygt, Sanitaire, Wedeco and Leopold.

Contact: www.flygt.ie
Models
- Utopia IVX 20-30 kW
- Utopia DC Inverter 5-14 kW
- Utopia Centrifugal 12-5-25 kW

5 Year Warranty

Utopia Split Systems

Published by ARROW@TU Dublin, 2008
dumpleton joins sanyo

Carl Dumpleton has been appointed Senior Technical Consultant with Sanyo Airconditioners Ireland. He has vast experience across all market segments involving indoor climate control, covering everything from air terminal devices through to ventilation, and full air conditioning systems.

Carl has worked extensively with both specifiers and contractors throughout all of Ireland. He will now bring that experience to bear on projects while working closely with consulting engineers and installers to devise cost-effective, energy-efficient solutions using product and systems from the Sanyo portfolio.

Carl states that he is delighted to be associated with an exciting fast-growing company such as Sanyo Airconditioners Ireland with its innovative approach to supplying eco-friendly solutions, such as the highly efficient GHP gas-driven VRF system's and natural refrigerant R744 water heaters.

Contact: Carl Dumpleton, Sanyo Airconditioners Ireland. Tel: 01 - 403 9900; email: carldumpleton@sanyoaircon.com

itt flygt, wedeco, sanitaire & leopold merger

ITT Flygt Ireland has merged with Wedeco, Sanitaire (UK) and Leopold – creating a leading solutions provider within the water and wastewater treatment market.

The Irish headquarters for the newly-combined business – ITT Water & Wastewater Ireland Ltd – will be located at Flygt’s offices in Tallaght, Dublin with regional offices in the UK at Manchester for Wedeco and at Rugby for Sanitaire.

The merger creates a business with extensive technical expertise, an extensive product portfolio and an ongoing commitment to product and service developments. The four existing brand names of ITT Flygt Ireland, Wedeco, Sanitaire and Leopold will remain at the centre of all strategic developments.

Peter Lewington (left) has been appointed Managing Director of the new venture while Alison Kirwan will continue as General Manager of the company in Ireland.

Contact: Alison Kirwan, ITT Water & Wastewater Ireland. Tel: 01 - 452 4444; email: Alison.Kirwan@flygt.com

new general sales manager for gypsum

Gypsum Industries has appointed Dean O’Sullivan to the position of General Sales Manager. He will be responsible for all sales within the Republic of Ireland dealing through builders merchants and distributors.

Prior to joining Gypsum, Dean was Head of Sales (Ireland) at Green Isle Foods, a position he held since 2005. He worked in a number of other management positions within the company and has over 10 years management and accountancy experience.
ART YOU CAN FEEL.

Introducing the Art Cool Air Conditioning Unit by LG. It's unique front panel picture frame allows you to simply change the look of the LG Art Cool by adding a photo or picture, blending it effortlessly into the background. But looks aren't everything. With its Optimum Room Temperature setting, the LG Art Cool will suit all seasons.

LIFE'S GOOD WHEN YOU SEE THINGS DIFFERENTLY.
**hitachi cs-net web**

Hitachi's CS-Net Web is a stand-alone central controller that can control up to 128 indoor units and up to 16 outdoor units connected to the Hitachi H-Link communication system. Using its ethernet port, CS-Net connects to the local area network (LAN) or internet (using a DSL router), allowing remote parameter setting and monitoring.

Designed for use with Hitachi's Set-Free VRF and Utopia ranges, CS-Net Web allows two levels of access depending on the user type — “User” access which facilitates monitoring and setting of the units; and “Installer” access which also allows timer setting and change of system configuration. A 4-year timer can be stored in the CS-Net Web remotely, allowing it to run stand-alone without a PC or manual operation.

For system status and historical data, different readings from the unit can be accessed remotely in order to give fast assistance for maintenance and monitoring. These parameters are stored locally for several days to ease maintenance.

Contact: Martin O'Brien, Technical/Applications Engineer, Hitachi Europe. Tel: 01-216 4406; email: martin.obrien@hitachi-eu.com

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**watermint aims for A1 energy rating**

The new Watermint apartment complex in Cabinteely, Co Dublin, will save up to 70% of energy on a normal average household, according to Conservation Engineering Consultants (CECL), the consulting engineering firm engaged on the project.

Watermint consists of three spacious penthouses and 1, 2, and 3 bedroom apartments, designed to the highest standard with specific focus on energy efficiency and sustainability. The development incorporates key sustainable elements such as carbon neutral wood chip boilers and photo voltaic solar panels on the roof.

The development also includes heat recovery ventilation and rainwater harvesting which will provide irrigation for the garden areas. “By combining high level design with sustainability, we hope to get the maximum A1 energy rating for the development”, says CECL Director Simon O'Brien.

Contact: Simon O'Brien, CECL. Tel: 01-209 0108.

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**cibse conference — book your delegate place NOW!**

This year's CIBSE Conference will take place in Clontarf Castle, Dublin 3, on Tuesday, 20 May 2008.

The theme is Tall Buildings: Exploring the Latest Design & Technical Solutions. An exciting speaker line-up of experts from Ireland and throughout the world will cover all areas relevant to building services design and tall buildings.

To book your delegate place(s) see page 44 and 45 of this issue for the booking form.
ipfma appoints general manager
The Irish Property & Facility Management Association (IPFMA) has appointed Jennifer Gahan to the position of General Manager. She joins from the Society of Chartered Surveyors (SCS) where she held the position of Technical Director – Property.

The IPFMA has over 500 members countrywide, 100 of whom joined in the last year alone. Just over 10% operate in the residential sector, with the balance in commercial.

IPFMA represents the fast-growing property and facility management profession which involves the application of multi-disciplinary skills vital to the operation of the property and construction industry. These range from property strategy and space management, to commercial and residential building maintenance and contracts management.

Contact: Jennifer Gahan, General Manager, IPFMA.
Tel: 01- 669 1954.

how to contact chronotherm controls
Lest there be any confusion, bs news would like to point out that both the telephone number and email address given for Chronotherm Controls Ltd in last month’s issue were incorrect.

For the record, Tom Noone and his colleagues can be contacted at Chronotherm Controls Ltd, Unit E2 Baldonnell Business Park, Clonlara Road, Naas Road, Dublin 22. Tel: 01 - 410 5756; email: sales@chronotherm.ie

code of practice for domestic plumbing & heating
The NSAI-led Committee working on the proposed Code of Practice for Domestic Plumbing & Heating has made significant progress over the last six months and is now close to publishing a first draft for discussion purposes.

The committee is made up of representatives from every element of the business, all of whom are giving freely of their time to contribute to what will undoubtedly be a major stepping stone in creating a more professional industry sector.

Over the coming weeks the various Committee-related Working Groups will review the early draft and submit their comments for inclusion in a revised draft which should be available for further discussion some time this summer.

Contact: Peter O’Reilly, NSAI. Tel: 01 - 807 3804; email: peter.oreilly@nsai.ie
CIBSE News

Building Energy Rating of Commercial Buildings

Kevin O’Rourke, Manager Built Environment, SEI, delivered one of the most professional and informative lectures in the CIBSE programme last month when he gave an excellent resume of the state of play in respect of the energy rating of commercial buildings.

Kevin is highly respected throughout the entire building services industry and the large turnout — coupled with the very lively questions and answers/discussion after his address — confirmed this standing. An engineering graduate of UCD, Kevin has worked in different Government bodies, the EU, industry, and academic research.

In his current role with SEI he covers programmes for research, development and demonstration; information support and promotion to the market; and policy advice to Government. Ongoing Initiatives include the House of Tomorrow and Low Income Housing programmes; SEBNet; the Public Sector Programme; and implementation of the EU Energy Performance of Buildings Directive (EPBD).

As part of the requirements of the new Directive, all new commercial buildings for which planning permission is applied for after 1 July 2008 must be supplied with a BER Certificate prior to sale or letting. In his recent address to the joint CIBSE/Energy Institute seminar Kevin discussed the programme for the implementation of this aspect of the EPBD, approved systems and software, and mechanisms for registering BERs.

Richard Kellett, Diploma — third place with Adam Maguire, Diploma — second place; Adam Byrne, Diploma — first place; and Margaret Dolan, Chairman, CIBSE Republic of Ireland Region

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The QUINN Compact
Setting New Standards in Design, Performance & Efficiency

Europe’s most efficient Compact Radiator

- Attractive slim profile & modern appearance
- 25mm pitch panel radiator for class leading outputs
- Low water content for rapid temperature response
- Available in six heights
- 13 Lengths from 400 x 2000
- Heat outputs from 956 - 14034 BTUs
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- 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 in the UK and distributed in Ireland, 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)

QUINN-radiators, Derrylin, Co. Fermanagh, BT92 9AU.

www.quinn-radiators.co.uk
A group of key companies across Europe and North America have united to form the EnOcean Alliance. The objective of the consortium of companies is to work together to further develop and promote self-powered wireless monitoring and control systems for sustainable buildings by formalising the interoperable wireless standard. It has the largest installed base of field-proven wireless building automation networks in the world.

The Alliance selected the light + building show in Frankfurt earlier this month as the platform for the official launch. Founding promoters of the Alliance include Distech, MK Electric, Honeywell Business, EnOcean, Masco, Omnia and Thermokon. Additional member companies are joining from over 70 product partners currently deploying EnOcean enabled products.

The foundation of the EnOcean Alliance addresses the demand in today's environment for a wireless ecosystem that combines a broad range of interoperable, flexible and uncomplicated monitoring and control products for use in and around residential, commercial and industrial buildings.

In wireless building automation EnOcean self-powered wireless technology has the largest installed base worldwide with over 70 shipping customers, 300 available products, and 10,000s of equipped buildings, many with thousands of interoperable nodes.

The potential for sustainable wireless communication solutions is enormous. For facility managers and property developers, for example, low power wireless technology is not only energy efficient but reduces cabling, saves installation time and cost, removes the need for batteries, eliminates maintenance and provides unlimited freedom and flexibility.

To further develop EnOcean technology, the Alliance will focus on formalising the specifications for the interoperability of the sensor profiles for the wireless products operating in unlicensed frequency bands and subsequently ratify as an international standard.

The Alliance has three membership classes: -
Promoters — Innovators and key players who will lead, define and drive the Alliance;
Associate Members — Building professionals, academics and smaller distribution partners interested in the technology, advancements, examples, training and so on.

"The EnOcean Alliance will provide significant advantages to members through the use of future-oriented maintenance-free wireless monitoring and control technology," commented Graham Martin, founder of the EnOcean Alliance. "Building professionals benefit from unlimited flexibility by allowing selection of a broad base of interoperable products thus enabling simple, speedy and cost-attractive adaptation to changing requirements."

About EnOcean technology
EnOcean’s simple, yet intelligent, self-powered wireless sensors are powered by energy drawn from movement, light or even changes in temperature rather than batteries. This harvested energy is used for transmitting sensor data over a distance of up to 30 meters within a building to control lighting, blinds, heating or air conditioning without the need for cabling. In addition to its eco-friendliness, the technology is easily installed and maintenance-free, ensuring unparalleled flexibility at the lowest investment and operational cost for sustainable buildings.

Contact: Graham Martin, EnOcean Alliance. Tel: +49 89 6734699 646; email: graham.martin@enocean.com
Perfect in Solar...

Kingspan Solar Ltd., part of Kingspan Group plc, provides both domestic and commercial markets with Solar Hot Water packages, custom-designed for each application. All system designs are carried out by GIBSE certified design engineers and carry comprehensive professional indemnity insurance cover.

The solar package comes with either Flat Plate Thermal or Vacuum Tube Thermal solar collectors and all the required components for complete installation. To make life easier for the installer, 1st and 2nd fix kits are packed separately.

An appropriately sized high performance Kingspan Solar Unvented Stainless HE cylinder also forms part of the package. The cylinder can be an Indirect or Direct version dependent on the auxiliary heat source available.

Kingspan Solar Ltd offers the highest level of support from initial advice through design and installation.

Tel: 01 626 5146
email: info@coppercraft.ie

www.kingspansolar.co.uk
www.kingspanhws.com
Designing building services

The purpose of this article is to explain the psychrometric processes that occur during the heating, cooling and other cycles of a typical air conditioning system and how these processes are represented, and calculated, through the use of a psychrometric chart.

The psychrometric chart is one of the basic tools which should make up the tool box of every HVAC engineer, together with those other essentials such as the ductulator or and the pipe sizing chart. Yet it would seem that the workings of the psychrometric chart remain a mystery to many engineers who tend to shy away from its use. Also, with the availability of computer software applications and excel spread sheets, many engineers rely more and more on these tools to carry out their heating and cooling load calculations while not fully grasping or understanding the basics of psychrometrics.

The psychrometric chart and its intricacies can seem a daunting and complicated subject but like all things, if it is explained properly and the elemental theory understood, then just like riding a bike, it will never be forgotten.

**The Psychrometric Chart**

A psychrometric chart is simply a graphical representation of the properties of air which appear in steam or hygrometric tables. At first sight it appears to be extremely complicated but consider firstly the values for air at saturation conditions only. From steam tables or hygrometric data it is possible to plot a graph of moisture content (g/kg) against dry bulb temperature. The result is as shown in Figure 1.

**Figure 1 — Moisture content at saturation**

The curve obtained is known as the saturation curve and it shows the quantity (g) of moisture (water) present in a unit quantity (kg) of dry air when the air is in a saturated condition.

Now let’s include in the graph the moisture content values of the air at various conditions of relative humidity from 10% to 90% in steps of 10% to produce a family of curves as Figure 2.

**Figure 2 — Curves of relative humidity**

Since the area of the graph to the left hand side of the saturation curve is not used it is normal to plot the curves with the moisture content axes on the right hand side. So the chart

**Figure 3 — Normal shapes on the Psychrometric Chart**

The psychrometric chart and its intricacies can seem a daunting and complicated subject but like all things, if it is explained properly and the elemental theory understood, then just like riding a bike, it will never be forgotten.
the psychrometric chart & air conditioning systems

now has the familiar shape as Figure 3.

So, basically the psychrometric chart enables us to find the dry bulb temperature, moisture content and relative humidity of air. In addition to these values, air at a given dry bulb temperature and % RH will have other known conditions of wet bulb temperature, specific volume and enthalpy. These scales can be therefore superimposed on the graph to give the complete picture of data for air at any condition as can be seen from Figure 4.

Figure 4 — Data present on the Psychrometric chart

So, now that we have the complete psychrometric chart, let’s see how some basic air conditioning processes are represented on the chart.

Air Mixing
Consider two different air conditions A and B plotted on the chart. If the air from two such sources is mixed the resultant moisture content, dry bulb temperature and other values must be of values between that of A and B.

Drawing a line between points A and B means that the mixed condition is somewhere along that line.

Graphically, this mixed condition can be found by dividing the line A/B in direct ratio to the mass flow rates of the two air streams. Therefore, if there is 40% (A) and 60% (B), you can physically divide the length of line A/B into the ratio 2/3 and find point M.

Figure 5 — Air mixing process

Note that because there is a greater quantity of air at condition B, the condition of the mixed air (M) will be nearer to that of condition B.

The other method of finding the mixed condition is to calculate the dry bulb temperature of condition M by simply calculating \( t_m = 0.4 t_A + 0.6 t_B \) — and plotting the intersection of \( t_m \) with the line A/B on the chart.

Figure 6 — Heating process

Heating
If air is heated by an LPHW heater battery or an electric heater battery then the dry bulb temperature of the air is increased but the moisture content of the air remains constant. This process is called sensible heating – as there is only a change in the sensible heat content of air.

Therefore, if we have air at condition A and we know it is heated to condition B, we can read from the chart the increase in enthalpy and obtain the heating load in kW by multiplying by the air mass flow rate.

Cooling
If air is sensibly cooled, i.e., no moisture removed, then the process is the opposite to that of the heater and is as shown in Figure 7.

In order for only sensible cooling to occur, the operating temperature of the cooling coil must be greater than the dew point temperature of the air. In this case the reduction in enthalpy can be read from the chart.
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Figure 7 — Sensible cooling process

chart and the cooling load in kW calculated by multiplying by the air mass flow rate.

Cooling and Dehumidifying

If the cooling coil temperature is below the dew-point temperature of the air, then the water vapour in the air will condense on the tubes of the coil. The amount of moisture which is removed from the air stream will depend on the difference in temperature between the air dew point temperature and the cooling coil operating temperature. This cooling coil temperature is known as the “apparatus dew-point”. This cooling and moisture removal process is shown as follows on the psychrometric chart, Figure 8. While the above shows the process occurring in two separate stages, it would be more normal to indicate the process as one straight line from A – B on the psychrometric chart. In this instance the total cooling

Figure 8 — Cooling & moisture removal (dehumidification)

load (sensible and latent) can be calculated by multiplying the reduction in enthalpy by the air mass flow rate. Similarly, the amount of moisture removed (g/hr) can be calculated by multiplying the reduction in moisture content (g) by the air mass flow rate.

Humidification

Humidification or an increase in the moisture content of an air stream can be accomplished in a number of different ways, each of which can be shown on the psychrometric chart. In each process there must be intimate contact between the air and water and this is achieved by using, for example, atomising nozzles, an evaporative membrane, or steam injection. The psychrometric process which results depends on the relative enthalpy and temperature of the water with respect to that of the air steam. If water is re-circulated over a wetted surface or membrane through which the air passes, the water will assume the wet bulb temperature of the incoming air. In this case the humidification process under these conditions will be one of constant wet bulb. There is no external heat exchange in the process and it is known as an “Adiabatic Process”, as shown in Figure 9, ... the increase in moisture content results in a reduction in sensible heat (i.e., a fall in temperature).

Figure 9 — Dehumidification

process as shown in Figure 10, ... the increase in moisture content results in a reduction in sensible heat (i.e., a fall in temperature).

Figure 10 — Adiabatic humidification

(The process is one of constant enthalpy and in reality the wet bulb line deviates slightly from the constant enthalpy line on the chart). If the water on a wetted surface is heated to the same temperature as the air dry bulb temperature then the process is “isothermal humidification” i.e. constant dry bulb temperature, as shown in Figure 11. If the water is heated further, or if steam is used then there is an increase in air dry bulb temperature during the humidification process.

Air Conditioning Cycles

We will finish the article by putting together all of the process which we have charted on the psychrometric chart in order to illustrate a complete air conditioning cycle.
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for a clean room application, where it is required to control temperature and humidity in both winter and summer. See the summer air conditioning cycle as shown in Figure 12.

I hope this article has been some help in explaining and clarifying the basics of the psychrometric processes which occurs in all air conditioning system cycles, and that it has gone some way towards making the psychrometric chart more user-friendly.

Fergus Dunphy is an Associate Director of PM Group and, as Department Manager, is responsible for the technical output and administration of the mechanical building services department. Fergus has over 25 years experience in the building industry, both in the contracting and consultancy fields in Ireland, the UK, the Middle East, Germany and Turkey. He has extensive experience in mechanical building services design for a wide variety of clients and sectors including pharmaceutical, web hosting, commercial and medical devices.
3D Air Sales Marks 10th Anniversary
With Major Development Plan

To coincide with its 10th anniversary of continuous growth and expansion, 3D Air Sales has embarked on a major development plan aimed at securing its current market position and expanding into strategically and newly-targeted areas throughout the country.

It is appropriate that this new development programme is announced on the company’s 10th anniversary. Michael Clancy established 3D Air Sales (Ireland) Ltd in 1998 to distribute the extensive range of air conditioning products manufactured by Mitsubishi Heavy Industries (MHI) throughout Ireland.

The company experienced phenomenal growth over the years, so much so that two years ago it was apparent that a major injection of capital was required to move it on to the next phase. After a great deal of deliberation Michael and his fellow-directors sought an outside investor, finally selling the business to the well-established HRP Group while retaining Director status and executive roles.

The fruits of that process are now being realised, hence the new development programme. In addition to significant investment in head office administration and technical support facilities, Managing Director Michael Clancy has made a number of key appointments at senior level to strengthen the existing staff complement.

Well known Joe Cooling has joined the company to service existing and new customers in the Munster region. 3D already has a strong presence in the area but such was the level of growth that a senior, experienced engineer was required to better service customers’ needs. Joe is highly-respected across the entire air movement and refrigeration sector and he brings a wealth of knowledge and expertise to this new position. He will be based in Shannon to ensure a speedy and efficient service.

Meanwhile Graham McCann, again a vastly-experienced and highly-respected engineer in the sector, has been appointed to spearhead a more concerted drive in the Leinster region. Graham will bring his invaluable expertise to bear on existing and new projects being undertaken by 3D Air Sales’ dealers while, at the same time, calling on consultants in the region to secure new business.

Both Joe and Graham will provide project assessment, trouble-shooting and engineering design support, working closely with the consultant and installer to devise the best possible solution to meet the client’s needs. Applications catered for include office buildings, hotels, retail outlets, department stores, gymnasiums, restaurants, pubs, banks, IT cleanrooms and homes.

MHI air conditioning systems have the highest reputation for top quality and long-term reliability, the company’s general engineering history dating back to the 1870s and embodying a culture of innovation and manufacturing excellence that has led to many industry firsts over the years. MHI has been manufacturing air conditioning systems for over 40 years, the portfolio now extending from small units to large modular systems. The range includes wall-mounted split systems right up to multi-splits and large ducted heat pump systems, in addition to sophisticated VRF inverter systems.

Both Joe and Graham can be contacted through 3D Air Sales head office in Dublin at Tel: 01 462 7570 or, alternatively, at mobile: 087 955 1951 (Joe) and mobile: 087 950 9402 (Graham).
Another Side Of...

Eddie Lynch

As Service Manager for Coolair, one can but wonder that Eddie Lynch has an "other side" at all. Having spent 25 years with the company, he now has a very demanding position, not least because of the large market share Coolair enjoys across a broad spectrum of the building services sector. Perhaps it is despite this heavy workload that Eddie has not one, but three, other sides!

His first and most abiding passion is as a triathlon athlete. This is a very demanding sport which Eddie sort of fell into about six years ago but which he now performs to a very high standard with his local club, Pulse Triathlon.

Then there is his love of classic and vintage cars. Always fascinated by things mechanical, he has an obsessive interest in the history and indeed romance associated with motors. His formative years would have been spent watching TV dramas such as The Saint and, yes, you've guessed it, he always wanted to drive the same car as Simon Templar.

As those who know Eddie well will testify, what he sets his mind to he gets. So, keep an eye out for him at weekends, especially if there is a vintage car rally in the vicinity — Eddie will serenely wave as he goes by in his 1964 vintage Volvo P18S, the car The Saint drove.

But so much for serenity and gentle vintage rally car driving. Conversely, Eddie is equally passionate about motor sport and the Formula Ford 1600 championship in particular. He provides all the backroom logistics and mechanical support for his friend, Neville Smyth, who was last year's Irish Formula Ford 1600 champion. In addition, he has Coolair on board as cor sponsor.

While the common theme throughout is sport and even competitiveness, equally important to Eddie is the comradery and sense of involvement. He is a firm believer in activities which are inclusive — beginning with the family and extending outwards into the greater community and beyond. Consequently, he is very active in the running of Pulse Triathlon, and also contributes and supports in any way he can the vintage car and motor sport communities.

In that context it is easy to understand Eddie the committed family man. These are activities which can, and do, include his family — wife Debbie and children Adam and Jessica. In fact, all have that driven, competitive edge. In recent years Debbie has gone back to college while also being co-opted as Membership Secretary of Pulse Triathlon; Adam is a (very) serious gymnast who currently represents his club, and the Dublin Region, in national competitions; while Jessica has just eased back on gymnastics and is now focussing more on swimming.

Undoubtedly, they will all be involved in Eddie's next and most immediate goal... to complete a Half Iron Man. This involves a 1.9k swim followed by a 90k cycle and rounded off with a half marathon.

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Published by ARROW@TU Dublin, 2008
Kingspan Solar —
The Ultimate Solar Package

According to Kingspan Solar, the most cost-effective, affordable renewable energy technology currently available for domestic dwellings is solar water heating. The technology to effectively collect and utilise solar energy currently exists. Solar energy can be converted into heat to generate hot water for the home while, at the same time, help to reduce carbon emissions and reduce global warming.

How much of your water heating energy needs can be provided by solar?
During the summer months as much as 100% of the energy needed could be provided by solar. In winter, despite the lower intensity of the sun’s rays and fewer daylight hours, as much as 30% could be solar. On average throughout the year up to 60% of a dwelling’s hot water requirement can be provided by solar power.

The balance is normally provided by traditional means, either indirect (via a gas, oil or electric boiler heating a second coil within the cylinder), or direct (via electric immersion heaters in the cylinder).

Kingspan Solar Ltd provides both domestic and commercial markets with solar hot water packages which are custom-designed for each application. All system designs are carried out by CIBSE-certified design engineers and carry comprehensive professional indemnity insurance cover. The solar package comes with either Marrel flat plate thermal (in-roof or on-roof) or Thermomax vacuum tube thermal solar collectors, together with the required components for complete installation.

An appropriately-sized, high-performance, Kingspan Duplex stainless steel unvented solar cylinder also forms part of the package. The cylinder can be an indirect or direct version, dependant on the auxiliary heat source available and, being unvented, offers the benefit of powerful showers and fast-filling baths.

Coppercraft has introduced its high-performance Eco Copper Cylinder for use as part of a well-designed Kingspan solar heating system. Coppercraft has, and continues, to play a leading role in the manufacture and distribution of water storage cylinder products in Ireland.

Kingspan Solar Heating Packages are handled in Ireland by Coppercraft Ltd which is also part of Kingspan plc. Together with Kingspan Solar Ltd, it offers the highest level of customer support, from initial advice through design and installation.

Contact: Deirdre Lenihan/Gabrielle Gillespie/Tom Rooney, Coppercraft. Tel: 01 - 626 5146; email: info@coppercraft.ie
Quinn Radiators, part of the Fermanagh-based Quinn Group, has been awarded two international accreditations which acknowledge the company's ongoing commitment to the production of high-quality radiators in an environmentally-conscious manner. Its state-of-the-art manufacturing plant in Newport, Wales, is now fully operational and has been awarded the ISO 14001 Environmental Management System and the NF quality mark.

Established in 1996, the ISO 14001 environmental management standards exist to help organisations minimise how their operations affect the environment and comply with applicable laws and regulations. It pertains to the process of how a product is manufactured, rather than the product itself. The standards main goal is to establish an organised approach to systematically reduce the impact of the environmental aspects which an organisation can control.

Quinn Radiators' customers can be assured that the company will consistently strive to monitor — and where possible minimise — any potential impact its activities may have on the environment. This is achieved through the setting of measurable objectives and targets which are business driven. Such objectives and targets that have been achieved in 2007 are:

- Establishing office-based recycle schemes;
- Reduction of waste to landfill;
- Monitoring of all waste streams across site;
- Recycling of plastics and cardboard waste from production;
- Adherence to all Environmental legislation;
- Ensuring all energy used on the site is used efficiently.

According to Scott Daniell, Quinn Radiators Health Safety and Environmental Advisor, "The implementation and successful certification of a robust environmental management system highlights the company's pro-active commitment with regards to its operation and potential effect on the environment."

As a further reflection of Quinn Radiators' commitment to delivering high-quality products, the company has also been awarded 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 Quinn Radiators to supply into new markets within Europe, opening up more opportunities for the brand to grow and develop in previously-unexplored territory.

Quinn Radiators, founded over 35 years ago under the Barlo name, was the first UK radiator manufacturer to achieve the BS EN ISO 9001:2000 accreditation for quality manufacturing systems and procedures. The attainment of both the ISO 14001 Environmental Management System and the NF quality mark accreditation is a further demonstration of the company's efforts to minimise the environmental impact of its products and activities while continuing to provide safe, quality merchandise that meets customer and consumer needs.

Contact: Quinn Radiators.
Tel: ROI Freephone: 1800 882 332; NI Freephone: 0800 389 9980; web: www.quinn-radiators.com
Aircon Sales & Service, Belfast

As part of our occasional Down Your Way series, this month bs news travelled to Belfast to meet the directors of Aircon Sales & Service, Sanyo Airconditioners' recently-appointed distributors for Northern Ireland. This is a key appointment for both parties and, while only fully operational for a few months, it is already delivering significant dividends for all concerned. Sanyo needs no introduction to the marketplace and Aircon Sales & Service also has a strong standing and reputation in the Northern Ireland marketplace. Established in 1996 by Ian McFerran and Robin McCoosh, two former senior managers with Walker Air Conditioning (WAC), it has grown and developed over the last decade or so to become one of the leading air conditioning providers in the province.

Before its demise, WAC had been a major player in the air conditioning industry throughout all of Ireland, holding prestigious distributorships/agencies for many world-renowned, brand-leading names. As senior management personnel with the company, both Ian and Robin gained invaluable experience in a wide range of roles and brought this to bear on the new venture when they struck out on their own in 1996.

In addition, a number of ex-WAC staff joined the fledgling company, many having worked and served their apprenticeship with Ian and Robin. Among them was Paul Davidson, who now sits on the Board of Management as Service Director, alongside Ian as Managing Director and Robin as Contracts Director.

The formalities of these titles are just that. While they reflect the day-to-day roles of each, the company's core strength is the manner in which the directors and senior management interface with one another. Indeed, this cooperative, inclusive philosophy is evident throughout the entire staff complement and is undoubtedly a critical factor in its success.

To date the company has installed, commissioned and serviced a wide and varied range of air conditioning plants throughout Ireland and the UK. These installed sites can be found in hospitals, offices, specialist buildings, computer suites, industrial processes, restaurants and high street retail stores.

In addition, it has multi-site...
maintenance contracts covering industrial premises, offices, shops, government bodies, multi-national companies and end-users.

Over the last decade in particular Aircon has been developed and nurtured into a professional and customer-focused organisation, specialising exclusively in the air conditioning sector. It combines high value-added and consistent quality service with competitive prices for design, supply, installation, maintenance and service.

This was particularly evident in the recently-commissioned Lesley Exchange office project right in the heart of Belfast. Working closely with long-established M&E consultants Williams & Shaw, mechanical contractor CHC Group and equipment suppliers Sanyo, Aircon Sales & Service installed a tailor-made climate control solution. The 3-pipe system comprises three Sanyo GHP outdoor units and a total of 36 indoor units which provide simultaneous heating and cooling throughout four floors of the project.

A critical element of the solution provided is flexibility and energy-usage management. The system allows for localised, individual control on each floor but also incorporates a central monitoring and control facility. This was a specific requirement of the client, a Government department, whose Central Procurement Directorate (CPD) has full remote access, and control, over the entire system. It has real-time information fed through to a central location and can monitor and adjust all elements of the installation 24-hours a day, seven days a week.

“This project — while fairly complex and requiring a sophisticated solution — went like clockwork”, says McCoosh. “The key parties involved — ourselves, Williams & Shaw, Sanyo and CHC Group — worked in close partnership with one another, providing support and assistance to ensure the envisaged solution was delivered according to spec, on time and within budget.”

“We pride ourselves in having a dedicated, customer-focused, sales team with an in-house design capability”, says McFerran. “Our service engineers are the best in the industry, the majority of whom have been with us since inception and trained in-house. Our engineers are familiar with the latest technological developments in air conditioning and are continuously updated through rigorous training on new products and methods on all aspects of air conditioning.”

To provide customers with a consistent high-quality service Aircon also offers a range of service and preventative agreements, combined with a 24/7/365 emergency call out. It is keenly aware of customer requirements to minimise or eliminate unscheduled downtime and so provide regular servicing on a planned maintenance basis.

Critical to its success is a willingness to examine the brief provided by the consultant, to understand and determine the client's actual need, and to work where appropriate with the main contractor, and other subcontractors on the project, to deliver to that brief. Ultimately, it is all about satisfying the customer.
Effortless style and sublime innovation are the hallmarks of the Matki showering portfolio. Each design throughout the varied collection incorporates the perfect blend of sumptuous, handcrafted beauty and pure functionalism, where even the smallest detail is developed to ensure an exhilarating shower experience.

The Matki collection comprises shower doors, surrounds, mixers, bath screens, and trays, along with frames built from rigid aluminium extrusions and door furniture and fixings chromed and modelled from solid metal. The overall portfolio is dynamic and ever-changing with new designs constantly coming on stream. One of the latest introductions — the new Walk-In collection — is said to be the pinnacle of doorless showering. Available in freestanding, corner or recess configurations, the surround is created almost entirely from shimmering glass and fits perfectly inside the uniquely-styled tray. The two-way thermostatic valve is built as an integral part of the sleek shower panel, enabling water flow and temperature to be easily controlled from both inside and outside the shower.

Even more unique still is the fact that the hot and cold inlets for the shower valve are pre-plumbed and concealed under the drying area platform to the left of the shower surround panel. This easily lifts up to facilitate ease of access for installation and maintenance. The flexible shower connector is concealed in the centre of the side panel, so the only visible elements are the actual control handles and the shower head.

Complementing the Matki collection is the quality range of thermostatic shower valves from sister-company Swaddling. Made mostly from solid brass and plated with chrome to give an opulent finish, these units are designed to be simple to install and easy to maintain. Swaddling’s innovative technology produces a superior performance and high flow rate, giving an invigorating shower while also meeting the most exacting quality and safety standards. This means no scalding, accurate temperature control and high flow rates.

All Swaddling valves will run efficiently on gravity systems down to 0.1 BAR (1m head), pumped systems, unvented high-pressure systems (up to 5 BAR) and combination boilers. No modifications are required.

Both the Matki and Swaddling collections are painstakingly designed and engineered to ensure every single unit passes stringent quality-control procedures at the quality-certified production plants. Packaging is equally important and designed for protection so that each product arrives on site in the same pristine condition that it leaves the factory.

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Please send applications to Derek Duff:
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Bathrooms & Accessories

Myson Towel Warmers & Bathroom Rads — Heating Through Innovative Design

The Myson towel warmer and bathroom radiator range extends from practical and traditional styles right through to the latest fashionable designer developments. Individual products can be co-ordinated for integrated use, giving total flexibility, while the wide range of associated heating controls ensure optimum performance, comfort and energy efficiency.

Apart from innovative technology and design styling, all towel warmers and radiators in the range are manufactured from the highest-quality materials and according to the most rigorous quality-control procedures. Hence the 10-year warranty across the entire range. From contemporary chic to rural tradition, Myson has endless solutions for every permutation. Most are available for central heating, dual-fuel and electric applications, and in a wide choice of painted or plated finishes.

For designers, consultants and installers wishing to create a contemporary feel, Myson offers an unparalleled range of options. Available in brass and steel construction with a variety of colour and metallic finishes, the range varies from sleek, clean lines to modern works of art. Products are also supplied in a wide range of sizes and are applicable to all domestic heating system options.

Typical of the range is the elegant and avant-garde Cubango. This stunning design is available in two sizes in chrome, brushed or bright nickel, regal or traditional gold, and white or any colour.

Then there is the unique Bandama. This curvaceous design features a mirrored panel and is available in one size in chrome, brushed or bright nickel, regal or traditional gold, white or colour.

Myson also has a vast range of traditional units, all manufactured from high-quality brass with a choice of finishes, making them the focal point of any bathroom setting. These are available in a vast variety of period styles, from simple rails to units featuring ball fittings and decorative radiator panels. They are designed for use as hydronic, electric or dual-fuel units. There are a total of 27 individual designs to choose from in either class, premier or radiator styles.

The Lokoro is an excellent example of traditional styling presented in a unique modern, way. It is a practical shelf towel warmer, available as a hydronic or electric unit, in two sizes. Finishes include chrome, regal or traditional gold, bright or brushed nickel, white or colour.

The Dee is another classic design statement. The central core of the units comprise a traditional style radiator presentation and this, in turn, is surrounded and supported by classic tubular styling. Traditional-style sink unit tap tops serving as the valve controls complete the look.

Overall this is an incomparable range of towel rails and bathroom radiators with literally something to suit every interior design concept and application.

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35
Research Puts Copper at the Forefront in Fight Against Clostridium Difficile

According to the latest release from the Copper Development Association (CDA), researchers at the University of Southampton have established that copper surfaces can inactivate the virulent hospital superbug Clostridium difficile. The team, led by Professor Bill Keevil, showed that C. difficile microbes placed on copper alloy surfaces died within one or two days. On a stainless steel surface, the bacteria were still alive after a week.

C. difficile forms spores which are resistant to a range of disinfectants, including alcohol gel, which is recommended for routine use in hospitals. These spores can live in the environment for a long time and are rapidly becoming a major cause of hospital acquired infections.

The Southampton research team has already shown how effective copper can be in combating the MRSA hospital bug. Exceptionally high levels of MRSA microbes were eliminated within 90 minutes of contact with a copper surface. In the same tests, the bacteria remain alive on stainless steel surfaces for up to three days.

Lead researcher Professor Keevil says the new findings are particularly significant: "We've already shown that copper surfaces can inactivate MRSA microbes. The fact that we've now established that copper also inactivates C. difficile spores, which are resistant to standard cleaning regimes, doubles our conviction that copper can play a significant role in helping hospitals to fight against infections."

The Southampton research provided the foundation for a year-long programme of testing, under the United States Environmental Protection Agency approved protocols, on 3,000 samples of five different copper alloys in independent laboratories in the US. This has very recently led the US Environmental Protection Agency to officially register copper as an antimicrobial agent. Copper is the first and only solid material to ever be registered by the EPA as antimicrobial.

"These latest findings are yet another endorsement of the versatility of copper, and the growing role it has to play in the fight against infectious diseases", says Conor Lennon of IMI. "In the light of this research, Selly Oak Hospital in Birmingham has already begun a trial to demonstrate copper's antimicrobial properties in a clinical setting. Frequently touched surfaces, such as ward grab rails and bathroom taps have all been replaced with copper alloys in one ward."

Professor Tom Elliott, University Hospital Birmingham Deputy Medical Director and leader of the Selly Oak copper clinical trial, believes copper could play a key role in the future to help contain hospital-acquired infections. "Laboratory research has shown that MRSA and Clostridium difficile microbes die much more quickly when they come into contact with copper-based surfaces than on the usual surfaces you find in a hospital. It is an exciting development and, if the trial proves successful in a clinical setting, could provide the NHS Foundation Trust (UK) with yet another means of tackling the spread of healthcare-associated infections."

Contact: Conor Lennon, Irish Metal Industries. Tel: 01 - 295 2344; email: conor.lennon@irishmetalindustries.com
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Multikwik WC Connectors Provide the Perfect Quality Seal

Multikwik's range of pan connectors are the first choice for professional plumbers worldwide. The unique design helps plumbers and engineers devise easily-installed plumbing systems for all manner of WC connectors, ensuring quality, leak-free installations. The plastic body is independent of soil pipes, ensuring that both the 1m head of water test and the compressed air test to ensure seals do not escape from the sewage system into the bathroom.

Multikwik WC pan connectors are moulded from white EVA (ethylene vinyl acetate) copolymer. The connector body is manufactured by injection moulding and the sealing rings are produced by moulding from a proven synthetic elastomeric compound.

Both the materials used and the manufacturing processes employed are typical of the top-quality branding commonplace across the entire MFP range. In fact, Multikwik WC pan connectors are suitable for use on above-ground sanitary pipework systems and have had Agrément approval from the outset.

Multikwik flexible connectors are designed to seal without the use of lubricant. When fixing, the inside of the soil pipe must be reasonably clean and smooth. Just push the connector spigot firmly into the soil pipe, align the pan outlet or pipe spigot with the connector socket, and push through the sealing flanges to joint. It is important that the elastomeric and plastic sealing flanges fold inwards to ensure a positive seal.

It is critical to check the connector is the correct size for the pan outlet and soil pipe. Minor variations in pan spigot size can be accommodated as the elastomeric and plastic sealing flanges ensure a positive seal. However, if the pan outlet is considerably under or oversized, an appropriate size connector should be used.

Each Multikwik connector has a label showing number and size which is packed in a polythene bag with installation leaflet and sachet of lubricant. As soil pipe sizes vary considerably, it may sometimes be necessary to apply a liberal amount of lubricant from the sachet provided to aid assembly. It is important not to use any lubricant on the WC pan spigot.

Connectors should not be allowed to come into contact with mineral oil, grease, putty or any compound containing mineral oil or grease and should be protected from direct sunlight and naked flames. It is important to note that, if Multikwik connectors are to be stored where the ambient temperature could exceed 35°C, the advice of MFP should be obtained.

Different Multikwik connectors can be linked with the simple-to-use MFP Multilink sleeve unit which can be used to sleeve any connector suitable for 4" (102mm) soil pipe and will fit into any connector suitable for 4"-41/2" spigots.

When it comes to applications, Multikwik connectors are suitable for jointing to the following:

- P or S trap washdown/siphonic WC pans to BS 1213:1945;
- Horizontal outlet WC pans to BS 5503 and BS 5504 Part 1 1977;
- 110mm uPVC to BS EN 1329-1:2000;
- 110mm uPVC to BS 4660: 1973;
- 102mm Clay to BS 65: 1981;
- 102mm Cast Iron to BS EN 877:1999;
- 100mm "Timesaver" cast iron and other materials with similar varying internal diameters.

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

Right: Multikwik connectors from MFP are extremely versatile and come in a vast range of options suitable for all manner of applications.
Matki Walk-In Collection

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Innovative Sololift+ Offers Multiple Application Solutions

The attractive, discreet design of the new Grundfos Sololift+ lifting stations suits every sanitary application. The smooth lines and rounded edges make it easy to incorporate into existing and new bathrooms, the attractive design reflecting the attention to detail that Grundfos always insists on.

Having created a reliable, high-quality lifting station, the Grundfos design team went on to dedicate the same level of care to the exterior of all Sololift+ models. The process was completed with end-users in mind — no logo disturbs the discreet design while the surfaces are easy to clean.

The compact size of Sololift+ lifting stations makes them easy to incorporate in restricted spaces. They are extremely reliable, have low noise levels when operating, and are particularly easy to service — all the vital parts of the pump can be accessed by simply lifting the lid which has no screws.

Sololift+ is manufactured to meet strict quality standards with each model in the range designed for the specific application catered for. For example, the models to be connected to a toilet are equipped with a highly-efficient grinder system that macerates the toilet waste so that it is easily pumped away. They come complete with a powerful pump, stainless steel grinder and non-return valve. Finally, the outlet is on the side, not in the lid, thus ensuring easy maintenance.

The Sololift+ range features six models to cover all lifting station needs. There are units designed for a single WC, a washing machine, or a full bathroom complete with shower and bidet. Applications and model details are as follows:

- WC
  Sololift+ WC;
- WC & sink
  Sololift+ WC-1;
- WC, sink, shower & bidet
  Sololift+ WC-3;
- Wall hung WC, sink, shower & bidet
  Sololift+ CWC-3;

Washing machine, sink & shower
Sololift+ C-3;
Shower & sink
Sololift+ D-3;
Large Pump, WC, shower & sink
Sololift+ PWC-3.

All Sololift+ domestic lifting stations are supplied as complete systems, comprising both tanks and pumps, designed to lift domestic wastewater from one place to another so that it can flow to the main sewer line.

Key benefits are as follows:
- The compact design of the new Grundfos Sololift+ lifting stations makes them easy to install, even where space is limited. They are specially designed for easy service;
- Sololift+ gives homeowners greater flexibility than ever to add facilities where they want, without the need for costly pipe work. Its attractive and compact design blends in any setting;
- Sololift+ lifting stations are robust, well-designed, virtually silent and require minimum service.

Contact: Grundfos (Irl).
Tel: 01 - 408 9800
email: info-ie@grundfos.com
SAFE AND RELIABLE COPPER TUBE

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

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You are safe with copper tube from IMI — so ask for it by name.
Uponor Further Strengthens Its PEX Range

As the plastics piping industry really begins to find its way as a standard building technique, competition between the large manufacturers is really starting to hot up. One of the manufacturers looking to make a major stamp on the market with its latest product launch is Uponor Housing Solutions. Area Sales Manager for Ireland Derek Duff explains the benefits of the new range.

"Uponor's long-established PEX pipe has gone through a development process to further increase its uses in the marketplace. Included in the re-launch is an improved fitting system that ensures the fitting cannot slip down the pipe during the joining process, an auto rotating expander tool, and new brass fittings. In addition, the pipe range also benefits from an additional 12mm diameter size to fit within the recesses of walls. The re-launch of the PEX sees no change to the polyethylene cross-linked material that has served the product well in the last 36 years, but merely to the fitting system of the same age.

"The fitting system now supports a re-invented tooling head which slips onto the existing Uponor guns and eliminates the need for rotating the pipe, making working in tight spaces easier.

"The PEX rings also encourage working in tight spaces as the PEX ring now contains an internal gripper to stop it from slipping back down to pipe. The joint is produced on the inside of the pipe, using the elasticity of the pipe; the PEX ring is fitted over the pipe, which are expanded together, and the PEX fitting pushed into the pipe. The pipe and ring shrink back to their original position created by the manufacture process gripping the fitting. This creates a solid, permanent and inexpensive joint in only 25 seconds, where the joint is stronger than the pipe itself. The pipe has attained industry standards and approvals such as manufacturing standard BS7291 class S and WRAS approval.

"Although this is a relatively simple system, Uponor appreciates that plastic plumbing is still relatively new to some, so we provide a regional training centre in Dublin to offer courses on plumbing and underfloor heating. Utilising both theory and practical sessions — either as two-day or tailored bespoke courses — to meet our client's needs, it gives the installer the chance to ask questions and try out new techniques.

"It is our intention to make quality training available to all installers who wish to improve their skills and learn more about modern plumbing and underfloor heating. Professional, purpose-designed Uponor heating training courses provide an excellent opportunity for the installer to set himself apart from his peers".

Contact: Derek Duff, Uponor Housing Solutions.
Tel: 01 - 895 7430; email: hsenquiries@uponor.co.uk
Honeywell Valves Reduce Water Consumption & Prevent Scalding

The water pressure to many premises is much higher than necessary. A Honeywell pressure control valve on the supply provides a simple, efficient and cost-effective means to reduce water pressure within the system and so reduce consumption, as less water flows to waste when taps are left running, such as to wash hand basins, take showers, flush WCs, etc.

It also minimises flow noise and protects installations from damage caused by excessive pressure. Connections on hoses to appliances are less likely to leak. Users are also unlikely to be drenched when they use hand basins.

Honeywell manufactures flanged valves with cast iron bodies up to DN600 (24 inch) diameter, and also small brass-bodied valves with DN15 to DN50 (0.5 inch to 2 inch) connections. The cast iron valves will reduce overall water pressure to multi-dwelling buildings and industrial and commercial premises, while the brass valves can control flows to individual floors or sub-units.

Honeywell has also addressed the matter of scalding in the bathroom. This is a wholly preventable accident, so measures should be taken to prevent scalding hot water in basins, showers and baths by installing thermostatic mixing valves, says Honeywell.

In healthcare, thermostatic mixing valves certified to Buildcert TMV3, such as Honeywell TM200VP, must be fitted. Valves to the domestic TMV2 standard, such as Honeywell TM300, are acceptable for most other premises but a risk-assessment should be carried out to determine if the facilities are used by vulnerable people such as the elderly, young children or the mentally or physically disabled.

Children and the elderly are at particular risk of life-threatening scald burns, says Honeywell. About 450 children under five in the British Isles are admitted annually to hospital with a severe scald caused by bath water. A few seconds lapse can damage a child for life.

The elderly are at increased risk because their skin tends to be less sensitive. They might not be able to pull away from hot water quickly enough to avoid scalding. In the aforementioned scenarios TMV3 valves should be installed to provide the maximum safety level.

Details of the Honeywell TM200VP and TM300 thermostatic mixing valve are available from Honeywell Water Controls, Tel: 0044 1344 656511; email: literature@honeywell.com www.honeywelluk.com
Mitsubishi Electric “SOLAE” — ‘The World’s Tallest Elevator Testing Tower’

Earlier this year Mitsubishi Electric Corporation commenced operation of the world’s highest elevator testing tower, named “SOLAE,” which is located at the Mitsubishi Electric Corporation Inazawa Works in Japan.

The Inazawa Works manufactures more than 10,000 elevators and escalators annually, while also developing new elevator technologies for products in the global market. With the recent increase in the number of tall buildings throughout the world, there is a growing need for more high-speed and high-capacity elevators. The new SOLAE testing tower will contribute to the development of elevators to meet this demand.

The new testing tower is 173m high and comprises a unique design with a twist of 45° on the lower part. A stable testing environment is made possible by oil dampers and an anti-vibration system that prevents the tower from vibrating due to wind. The showroom attached to SOLAE is designed chiefly for customers who are considering installations of elevators, escalators or building management systems. The building has three floors, with the showroom on the first and second floors, and reception rooms on the third floor. The third floor is also connected to the testing tower.

Mitsubishi Electric can now further accelerate R&D on safety, reliability and ride comfort, as well as expand the company’s elevator business through development of cutting-edge products. This will include the world’s fastest elevator which is designed to travel at more than 1000m per minute, as well as high-capacity elevators that can carry a large number of people at once. Specifically, it is currently working on developing:

- Large-size traction machines and parallel-driving power systems for high-speed/high-capacity elevators;
- Safety systems, including long-stroke buffers and large-size safety gears;
- Durability and performance of ropes and traction machines;
- Technologies to lessen vibration/wind noise generated when elevators travel at high speeds.

April 2008
**racgs at pga national**

The horrific weather during the RACGS outing at the PGA National Course last month would have caused postponement for lesser mortals but the RACGS members, and their guests, proved their mettle by playing on despite the conditions. Ironically, it was one of the biggest turn-outs to date with 30 members and 17 guests teeing off.

In truth, there were a fair few who had to call it a day at various stages throughout the course, but that was as much out of a desire to protect the playing surface as much as themselves. In the circumstances, the scoring was excellent. Results were as follows:

**Overall Winner**
Michael Clancy (36pts).

**Class 1**
Winner — Brian Carty (34pts);
Second — Vincent Barrett (33pts).

**Class 2**
Winner — Domnick Ward (31pts);
Second — Fred Barber (27pts).

**Visitors**
Winner — Sonny Landers;
Second — Paul Airy.

**Longest Drive**
Johnny Lynagas.

**Nearest the Pin**
Sonny Lowndes.
**F9 Nine**
Ger Darcy.

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*bs news*

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Further to the enactment of the Energy (Miscellaneous Provisions) Act 2006, the Commission for Energy Regulation ("the Commission") was granted the new, and separate, functions for the regulation of:

1. The activities of electrical contractors with respect to safety;
2. The activities of gas installers with respect to safety.

The Commission is in the process of designing and implementing the new, separate, statutory-backed regulatory systems for each of the above functions. Further to its work in that regard, the Commission has published a number of consultation and decision papers on its website, www.cer.ie.

Previous editions of bs news outlined the Commission's work concerning the design and implementation of its new functions and now a further update is presented here.

As part of its work in designing and implementing the new, statutory-backed, regulatory system for electrical contractors, the Commission recently announced a competitive process in order to appoint a body (or bodies) to act on its behalf in carrying out the day-to-day functions of registering, and monitoring, the works of electrical contractors. Any body appointed by the Commission will be referred to as an "Electrical Safety Supervisory Body" and will be required to operate on a not-for-profit basis.

This new system, and any parties appointed as an Electrical Safety Supervisory Body, will replace the voluntary, self-regulatory system currently in place and operated by RECI and ECSSA. The role of an Electrical Safety Supervisory Body is to implement and monitor safety standards for electrical installation works in order that consumers can be confident in the safety of the work carried out by registered electrical contractors.

In its consultation paper on the "Proposed Criteria for the Regulation of Electrical Contractors" (published on 7 December 2007, reference: CER/07/213), the Commission set out its proposals for the requirements to be placed on any Electrical Safety Supervisory Bodies appointed. In that consultation paper, the Commission specified that an Electrical Safety Supervisory Body would be responsible for, among other things, the following functions:

- operating the scheme for the registration of electrical contractors on a not-for-profit basis, in accordance with the rules specified by...
the Commission;  
— monitoring the activities of registered electrical contractors and carrying out safety inspections;  
— publishing a "Register" of electrical contractors in Ireland;  
— investigating complaints and disciplining registered electrical contractors as appropriate;  
— managing a system for the certification of electrical works.

The Commission has published an "Expressions of Interest" document on its website — www.cer.ie. That document presents an overview of the competitive process for appointing any Electrical Safety Supervisory Bodies and how parties may participate in that process.

**Note for Gas Installers**

The Commission is currently drafting its Criteria Document for the new gas regulatory system, setting out the detailed rules for the registration and regulation of gas installers and also the rules and obligations placed upon the party appointed to act as the "Gas Safety Supervisory Body". The Commission expects to publish the Criteria Document for public consultation by the end of this month.

Further to the publication of that, the Commission will launch a competition, similar to that outlined above, to appoint a party to regulate the work of gas installers with respect to safety. Any party appointed to act as the Gas Safety Supervisory Body will be required to adhere to the requirements and procedures specified in the Criteria Document.

**Economic Regulation of Supervisory Bodies**

On 14 March last the Commission published a consultation paper setting out its proposals with respect to the economic regulation of its electrical and gas safety functions. The proposals set out the means by which the Commission intends to regulate the financial/economic aspects of the operation of any Electrical Safety Supervisory Bodies and Gas Safety Supervisory Body to be designated by the Commission. These proposals include provisions for:—  
— the operation on a not-for-profit basis of any Electrical Safety Supervisory Bodies and Gas Safety Supervisory Body to be designated;  
— the Commission’s regulation of the costs and revenues of any such Bodies designated;  
— the approval, by the Commission, of fees/charges to be applied by any such Bodies designated for the provision of services to the industry and to the public (for example, the fees/charges for registration, inspection, sale of Completion Certificates, etc).

In addition to presenting its main consultation paper, the Commission published a non-technical guide to its proposals in order to assist parties, who may not be familiar with economic regulation, in understanding the Commission’s proposals.

The consultation paper and the non-technical guide are available on the Commission’s website — www.cer.ie.
Plumb Lines
heard it on the grapevine...

MERcury Gets Terminal 2

Mercury Engineering has been awarded the €70 million contract to handle all mechanical and electrical engineering for the new Terminal 2 building and Pier E boarding gates at Dublin Airport.

Work on the massive project — which so far is budgeted at approximately €500 million — is divided into a reported 17 separate contracts and

Sands Does Wavin for Birds

Well known plumbing and heating contractor Liam Sands has invented a unique bird-nesting box which has already featured on RTE's Mooney Goes Wild programme and has also been approved, and is being field-tested, by Bird Watch Ireland.

Liam is a keen bird fancier (of the feathered kind) and, since his retirement, spends more and more time enjoying the outdoors and nature in general. However, familiar with the problems of constant dampness and cleaning difficulties associated with traditional bird-nesting boxes, he set his mind to devising an alternative.

His Eureka moment came straight out of his experience as a heating and plumbing contractor. His patented D.Nest.Tube is made from Wavin pipe, complete with

Mercury will start on their section in the summer with a view to completion in the Spring of 2010.

Last year Dublin Airport facilitated 23 million passengers with the projected capacity for 2010 being 30 million. Capacity is one thing ... how they handle the flow-through is the real issue. Let's hope it's better than at present.

Wavin fixed-end lid, Wavin screw-on base, and Wavin mounting bracket for fixing to a north-facing wall or tree trunk. D.Nest.Tube has created quite a stir in nature circles with all manner of bodies currently testing the new unit. There is even a live TV camera feed to a D.Nest.Tube fixed on a wall at the National School, Bellivor, Co Meath, as part of a school project.

Is TwoDaLoo For Real?
The TwoDeLoo is a supertiolet created to "save rocky marriages and the planet" according to the publicity blurb. How it could achieve either objective, let alone both, is a mystery. Prices start at $1400 with various models available, including one incorporating a 7-inch LCD TV and an iPod docking station! Have a Google and see what you think!

Clancy Junior Makes His Debut

It might be hard to believe it but Michael Clancy's broad infectious smile just got ten times bigger. The reason? ... earlier this month his wife Jennifer gave birth to their third child.

They already have two girls so the arrival of Michael Jnr has resulted in a great deal of excitement and partying in the Clancy household.

While some would say otherwise, I don't believe there is any truth in the rumour that the proud father has already commissioned a set of miniature golf clubs for the new arrival. I know he weighed in at something like 9.6lbs but even Michael Snr knows that Michael Jnr has a way to go before he can swing a golf club ... or does he?

PM Goes to Far East for Wyeth

Project Management has won the contract, in association with its partner M&W Zender, to design and manufacture two production facilities for Wyeth Pharmaceuticals in the Far East.

The new facilities are located in China and Singapore respectively, and confirm PM's relationship with Wyeth which dates back to the early 1990s and its Askeaton plant in Limerick.

With principal offices in Cork and Dublin, PM employs 1700 people worldwide working on projects in Ireland, the UK, Europe and Asia. Among those currently underway in Ireland are Landsdowne Road redevelopment, Pier D extension at Dublin Airport, Wyeth in Dublin and Centocor in Cork.

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