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Wishing all our readers a very happy and peaceful Christmas.
anton sprint analyser wins gas safety award

The Anton Sprint flue gas analyser — which is distributed in Ireland by Commissioning Services Ltd (CSL) — has just been awarded the Corgi "Gas Safety Product of the Year 2008 Award".

It is the first time a flue gas analyser has won this award.

The Anton Sprint has a built-in gas leak detector, as well as a carbon monoxide room safety test, and is a five-in-one analyser. It is used by both Bord Gais and British Gas engineers, and is also used by all the main training facilities in Ireland such as Metac, FAS and ERS.

“There have been a number of carbon monoxide fatalities in Ireland this year”, says Ciaran Martin of CSL "usually due to blocked flues in combustion appliances. With the new regulations introduced in 2008 requiring all gas boilers to be high-efficiency, it is not possible to commission these without a flue gas analyser."

With the Anton Sprint all safety reports can be printed off or saved to a PC. It also has a bluetooth capability option for use with hand-held PDAs and can be upgraded to read for NOx gas for light industrial applications.

CSL has been supplying and servicing gas equipment for 15 years and is the only approved service centre in Ireland (and one of only four throughout Ireland and the UK) for the Sprint combustion analyser.

Contact: Ciaran Martin, CSL. Tel: 059 - 914 3464; Mobile: 086 - 253 3079; email: martinc@cs ltd.ie

amca elects fläkt woods expert to board

Geoff Sheard, Fläkt Woods’ Vice-President – Fan Technology, has been elected to the board of the Air Movement and Control Association International (AMCA), its first European director for some years.

AMCA will exploit Dr Sheard’s experience in furthering its mission to promote internationally the health and growth of the air handling industry in serving industrial, commercial and residential markets. Its scope includes every type of air handling system and component, from fans and louvres to dampers, controls and beyond.

Commenting on his appointment, Geoff Sheard said: “I aim to improve significantly AMCA’s focus on the international standards and legislation that impact our industry on a worldwide scale.”

süka seeks additional installers/dealers

Süka Electro Heating Company — founded in Germany in 1970 and now with a dedicated Dublin-based office — seeks to appoint additional dealers to its installer network. Since opening its Irish office last year Süka has gained considerable market share but now seeks to develop and expand on that success.

Süka is firmly positioned within the low-carbon-emissions heating market with a range of slimline electrically-powered heaters that provide virtually instant heat. Fully controllable, they use 15 minutes of electricity to provide 60 minutes of radiated heat via radiators that are available in flexible size options to suit most applications.

At the heart of each Süka heating system are refractory ceramic plates — known as Chamotte — which combine a unique storage material with modern design and technology. Within each ceramic plate is a low wattage heating element shaped like a W which heats up the plate from inside — only when it needs it.

The heating element is fully embedded within the fire plate. There is no direct exposure to the surface atmosphere, so less oxygen is burnt if any at all. The secret to the Süka heating radiator is its intelligent use of energy, ensuring plenty of heat is available right through the day, while keeping running costs low.

Contact: Corinne Taylor, Süka Regional Manager for Ireland. Tel: 01 - 526 2470; www.suka.ie
Revolutionary new VRF generates up to 4kW of electricity whilst heating or cooling

If you're short of electrical power and looking for an innovative green solution, the new ECO G Power, a gas driven VRF system from SANYO, could be the answer. A revolution in air conditioning design it is the first VRF system that can supply heating, cooling, hot water and now electricity!

- Generates up to 4kW of electricity - enough to power 40 indoor units or 8 computers
- Innovative technology that reduces CO₂ emissions by up to 30%
- Can provide both hot water and electricity in heating or cooling mode
- Powered by natural gas or LPG, only requires single phase power supply
- Eliminates the need for expensive upgrades to electrical power substations for new or refurbishment projects
- 100% performance in heating, at low ambient temperatures down to -20°C with no defrost cycles
- Indoor units can uniquely control off-coil temperatures to prevent cold drafts

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SANYO Air Conditioners. The natural choice.
T&A expands range of terminal valves
Recognising the importance of terminal unit control in variable flow water borne HVAC systems, Tour & Andersson has expanded its range of terminal balancing valves (TBVs).

Available with or without modulating controls, Tour & Andersson TBVs allow professional hydronic balancing and efficient operation of small terminal units, and preserve the energy-saving achieved by using variable flow systems.

Tour & Andersson’s TBV-CM modulating control valves allow specifiers to opt for variable flow HVAC systems while still maintaining valve authority and terminal unit performance. By equipping the terminal unit circuits with STAP differential controllers, the differential pressure across the TBV-CM valves can be stabilised, and the correct valve authority can be maintained.

These valves combine control, balancing, measurement and shut-off in one location, saving installation time and costs associated with multiple valve installation. In addition, by combining these valves with Tour Andersson’s TA CBI balancing instrument, one engineer can balance the entire system unaided.

Contact: Ken Browne, Tour & Anderson. Tel: 087 - 280 1095; email: ken.browne@touranderson.co.uk

monitoring/proving fan operation
When it is necessary to prove operation of an exhaust fan, a Dwyer differential pressure switch from Manotherm is the ideal solution.

The simplest technique requires only connecting the high-pressure switch port to a static pressure tap downstream from the fan if the fan is located at the beginning of the duct; or the low-pressure port upstream from the fan if the fan is located at the end of the duct. The switch senses the slight pressure created by the fan compared to the atmosphere.

If the fan is located somewhere within the duct, Manotherm recommends placing sensors ahead and behind the fan, as shown in the accompanying diagram (right). This takes advantage of the high pressure differential across the fan to operate the switch.

In all three cases, if the fan stops, the switch will signal a warning or start auxiliary equipment.

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

install & maintenance from edmac systems
Edmac Systems is a long-established automation and controls company with considerable market experience and expertise. It has a long association with some of the leading-brand players in controls and has a reputation for service excellence.

Among brands represented are Honeywell Controls HVAC & Burner Controls Division and the Honeywell Produal range of sensors. Edmac also represents Mamac sensors and is a stockist of Belmo and Joventa actuators.

In addition, Edmac carries out the supply, commissioning and maintenance of Honeywell’s HVAC and BMS systems, while providing comprehensive maintenance programmes for all other market-leading brands.

Contact: Edward McGonagle, Edmac Systems. Tel: 01 - 820 0309; email: edmacsystems@esatclear.ie
Good for your clients and the environment

With Hitachi's new Set Free VRF range it's easy...

High efficiencies across the entire range – the 10 HP unit has a market leading EER of 4.04 at nominal Eurovent Conditions.

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- Pipe runs up to 1000m with up to 90m after the first joint.
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- H-Link II and CS-Net Web controls that integrate with all leading BMS protocols.
- Compatible with Hitachi's new Heat Recovery Ventilation units with capacities up to 3,000m³/hr and heights of 330mm to only 650mm.

Set Free VRF is highly discreet and won't cause a draft, just easy-to-control comfort.
white young green becomes wyg ireland

White Young Green Ireland has been re-branded as WYG Ireland after a period of organic growth and acquisition, including PH McCarthy & Partners and Malachi Cullen & Partners. Both will now operate under the WYG Ireland brand.

The company is also re-branding its surveying and management services business to Nolan Ryan Tweeds. This brings together the Nolan Ryan Partnership, a project management and quantity surveying practice, and Tweeds one of the UK's leading cost consultancy practices. Nolan Ryan Tweeds will be part of the WYG group.

WYG Ireland, including Nolan Ryan Tweeds, employs over 650 people and has offices in Athlone, Belfast, Cork, Derry, Dublin, Kilkenny, Limerick, Naas, Sligo and Waterford.

norland opens irish office

Norland Managed Services, a leading building services and facilities management company in the UK, has opened a dedicated Irish office located at Centrepoint House, Rosemount Business Park, Blanchardstown, Dublin 11.

The office will initially employ a small number of staff but the intention is to grow that number as the business expands. Oliver Ward, Business Unit Director, said: "Now is not perhaps viewed by many as a time to expand but there is a market in Ireland for our customer-focused service and expertise which we intend to pursue vigorously."

Ian Entwisle, Chief Executive of Norland Managed Services said: "The facilities maintenance sector is traditionally resilient in times of downturn and we are confident that our service delivery, ability to innovate our customers' cost structure, and competitive pricing will enable our continued growth."

toshiba 'compliant' central controller

The new Toshiba Compliant Manager from GT Phelan is capable of controlling 128 indoor units from a single location and has the facility to set all of the operating parameters for individual or zoned indoor units, whether they are VRF or individual split systems. It also displays individual fault codes for any unit on the network.

Compliant Manager can be remotely connected via a PC and all functions controlled via the internet. It can be linked to energy-monitoring relay interfaces for the collection of data for energy billing, and also to the digital-input output module for the interface to other systems.

Compliant Manager has some innovative functions, including the ability to give restricted access to different users. The controller has advanced time-clocking functions which give the building owner flexibility, and a return-back function which returns the unit's settings to a predetermined setting after a set amount of time. All of these functions are accessible via the internet interface.

Contact: Derek Phelan, GT Phelan. Tel: 01 - 286 4377; email: derek@gtphelan.ie
Sanyo’s GHP The Perfect Energy Saver

With air conditioning typically accounting for approximately 30% of the annual electricity consumption of an office, specifiers and end-users alike are constantly seeking ways to improve efficiencies and reduce operating costs. Sanyo’s GHP system offers the perfect solution with its unique combination of minimum electricity usage and reduced gas consumption.

The electrical power is kept to a minimum since outdoor units only require a single phase power supply to run auxiliary items such as controls and fans systems, with levels as low as 0.7kW usage possible.

Meanwhile, the reduced gas consumption of the system is possible as, unlike traditional electric-powered VRF systems, the technology utilises an open drive compressor driven by an internal combustion engine powered by natural gas or LPG.

Heat pump air conditioning also has the advantage of eliminating the need for separate heating and cooling systems, with both actions carried out by one unit, resulting in a highly-efficient indoor temperature control.

Further efficiency is gained for the recovery and re-use of the waste heat from combustion, preventing energy loss and providing powerful quick-start heating, and requiring no defrost cycle. The engine waste heat, which is normally exhausted into the atmosphere, is recovered by means of the heat exchanger and can also be used to produce hot water for sanitary uses.

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

STANDARD CONTROL SYSTEMS
DUBLIN    GALWAY    CORK

The Directors & Staff of Standard Control Systems would like to wish all their customers a Happy and Peaceful Christmas and The Very Best for 2009.

Instead of sending cards or gifts this year, we have decided to make an equivalent charitable donation to help the disadvantaged in our society.

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new daikin water-cooled VRV®III

With the introduction of the RWEYQ-P, the highly-efficient combination of Daikin's pioneering VRV® technology with water cooling now benefits from third generation VRV® technology. New features include individual heating and cooling changeover with the heat recovery option.

There is also a new range available (RWEYQ-PR) that allows the use of geothermal energy. The RWEYQ-P retains the high efficiency associated with water cooled VRV®, obtaining some of the highest ratings on the market — EERs up to 5, COPs up to 6.

A new 8HP outdoor unit has been added to complement the 10HP model in the water cooled VRV®III range, allowing nine different combinations from 8HP to 30HP. Up to 36 indoor units can be connected, from an expanded range of 13 indoor models in 75 variations.

The addition of a VRV®III BS Box heat recovery unit allows heating or cooling to be selectable per indoor unit for optimal comfort. Also, the RWEYQ-P can be connected to all current Daikin control systems.

Contact: Daikin Europe (Ireland Office). Tel: 01 - 642 3434; email: info@daikin.ie

chloride acquires pes

Chloride, one of Europe's leading suppliers of Uninterruptible Power Supply (UPS) systems and services, has acquired Power and Electronic Services (PES), a leading supplier of critical power protection solutions.

Founded in 2003, PES focuses on critical power requirements for the Irish market and has a significant installed base that includes the Bank of Ireland and other financial services organisations throughout the country.

"Since the collapse of Motogen, the Irish market hasn't had a single vendor to address its needs", says James Coughlan, Chloride's Sales Manager for Ireland. "Our acquisition of PES will strengthen Chloride's position in the Irish market, as PES has built an excellent reputation for the quality of its service provision, and Chloride is fully committed to supporting existing PES customers. We also anticipate working with new customers."

Contact: James Coughlan, Chloride Sales Manager for Ireland. Mobile: 087- 130 9343; email: james.coughlan@chloridepower.com

mark gas detection systems

Mark Eire is now in a position to supply and commission the Mark Gas Detection System. Monitoring is by different sensor technology depending on the type of gas being monitored and includes catalytic, semi-conductor and electro-chemical.

The gasses being monitored include natural gas, LPG, oxygen, carbon monoxide, hydrogen sulphide, sulphur dioxide, nitrogen dioxide, carbon dioxide, chlorine, hydro carbons, nitrogen, acetylene, ammonia, freon, ozone, argon and helium.

All Mark gas detection systems comply with the relevant BS standards and comprise microprocessor-controlled gas detection panels, thermocatalytic gas detectors, slam-shut valves and audio-visual alarms.

All control panels are suitable for, and provide the necessary relays to, slam-shut valves, fire-detection systems, bms and local sounder beacon where specified.

Mark personnel are available to provide advice and guidance on the correct choice of system and thereafter to oversee its installation and commissioning.

Contact: Mike O’Donoghue, Mark Eire. Tel: 026 - 45334; email: modonoghue@markeire.com
Anton Sprint V2 kit 2 - Five in one Flue Gas Analyser

Gas Safety product of the Year Award 2008
Sprint V2 kit 2 - €998- 5 year warranty (excl. sensors)

Special Offer for December & January - €899-
plus first calibration FREE (value €96).
Total Saving €195 (excl. VAT and carriage)

As used by Bord Gais and British Gas.
Local service and support:- CSL is Irelands only authorised service
centre - typical calibration turnaround time of 3 days.

Contact:  CSL, Carlow. Tel 059 914 3464 Mobile: 086 0455812

Certificate in Emergency Lighting for Designers & Commissioners

I.S. 3217:1989 has been revised and published with new requirements as I.S. 3217:2008. NSAI is offering a training course entitled 'Certificate in Emergency Lighting for Designers and Commissioners’ which is designed to meet the qualification criteria for Emergency Lighting Designers and Commissioners, as set out in I.S. 3217:2008.

The course is delivered in 3 separate modules:

Module 1: Common topics for both designers & commissioners (€1,000) (On completion of the common module course delegates progress to designer and/ or commissioner modules).

Module 2: Designer module (€200) (delegates must have completed common modules in order to undertake the designer module).

Module 3: Commissioner module (€200) (delegates must have completed common modules in order to undertake the commissioner module).

Who should attend?
This course is aimed at anyone involved in the design, manufacture, installation and commissioning of emergency lighting equipment and systems.

No qualifications are required to attend this course. However, there are specific qualification requirements laid down in I.S. 3217:2008 for those practising as designers or commissioners of emergency lighting systems. Basic technical/electrical experience would be an advantage.

Certification:
FETAC/METAC Level 6 Special Purpose Award for Designers and Commissioners (when available).

Please note that until such time as the Award is approved by FETAC/METAC, NSAI will issue a registration number based upon successful completion of the relevant assessments.

NSAI Head Office, 1 Swift Square, Northwood, Santry, Dublin 9 T: +353 1 807 3800, F: +353 1 807 3838, E: info@nsai.ie

Published by ARROW@TU Dublin, 2008
Professor J Owen Lewis Appointed CEO of SEI

Professor J Owen Lewis has been appointed the new Chief Executive Officer of Sustainable Energy Ireland (SEI), effective January 2009. Professor Lewis is a long-time proponent of sustainable energy practice in the built environment and was founder of the UCD Energy Research Group in 1975.

Announcing the appointment Brendan Halligan, Chairman of SEI, said: "We are delighted to have Professor Lewis as CEO to lead SEI in the next phase of its development, a role which will be both challenging and exciting. Professor Lewis's demonstrated vision, conviction and passion to the sustainable energy agenda will be a huge asset to SEI. His background in energy innovation will ensure that SEI will play a leadership role in the delivery of national energy policy objectives and in Ireland's efforts to meet its international energy and environmental obligations".

Professor Lewis added: "The challenges for Ireland in terms of energy security, price competitiveness and emissions abatement are clear and the targets ambitious but achievable. I am delighted to have been offered the opportunity to lead SEI in the delivery of its wide-ranging programmes in pursuit of these targets. The agenda is one of transforming Irish society and the economy towards overall carbon neutrality and I have been given the full backing and mandate of a strong board, and a committed staff complement, to achieve this ambition."

Owen Lewis is an architect and engineer, graduating from UCD in 1989 with a BArch degree and conferred with an MSc in Building Services Engineering by the University of Manchester in 1971. He has taught and lectured in the USA, China, Russia, South America and Africa and in most of the member states of the EU. He has also served as an external examiner in many universities throughout the world. Currently part-time Professor of Architectural Science at UCD, for most of his time in the university he taught building technology. In 2001 he was elected Dean of the Faculty of Engineering and Architecture and was appointed Executive Dean in 2004. He became Principal of the UCD College of Engineering, Mathematics and Physical Sciences and Vice-President of the university in 2005, following the major restructuring of UCD in which he played a key role.

From 2006 until recently he served as part-time Director of Innovation and R+D in Bord na Móna.

Owen has co-coordinated a considerable number of European Commission research and dissemination activities and has acted as expert advisor to a number of its directorates, including those dealing with research, energy and transport, industry and environment. He has contributed to the preparation of communications from the Commission and has evaluated research and demonstration proposals for the Commission under various Framework Programmes.

He was Vice-President of the Royal Institute of the Architects of Ireland in 1984-85 and Head of its International Affairs Division 2001-2006. He was appointed to the Irish Energy Research Council in 2006 and is currently Chairman of the statutory Building Regulations Advisory Body (BRAB); Chairman of the RDS Committee of Science and Technology; and a member of the RDS Board of Management. He has served on the Construction Industry Standards Committee since 1980.

Owen founded the UCD Energy Research Group in 1975 and has served as Director ever since. The Group's work is mainly in design for sustainability, indoor environment, energy conservation and solar architecture. In 1976 he co-founded the Solar Energy Society of Ireland, and served as Associate Editor of the Journal of Solar Energy from 1993 to 1998. He currently serves on the Editorial Boards of the International Journal of Sustainable Energy and Intelligent Buildings International. He has also published nearly 200 papers and books as author, joint author or editor.
Fantasy Lights Group has pioneered the application of innovative lighting solutions across all manner of projects for the last 20 years. Its activities comprise four primary areas — Enlighten professional LED and architectural lighting solutions; Commercial Lighting; Showrooms; Festive & Christmas Lighting.

Fantasy Lights Group is not just about lighting products, but about providing customised lighting solutions which are energy-efficient and cost-effective, both to install and run. Project analysis, design assistance and life-cycle costs are a key part of the service provided.

Fantasy Lights Group boasts an extensive list of high-profile projects and clients as regular clients. Specify Fantasy Lights Group ... you'll be in good company.
Pragmatic Approach to Better Water Quality

In this, the first of two articles on water quality, Bryan Barlow of Spirotech examines how effective deaeration and dirt separation can control and significantly improve water quality, and thereby system performance and efficiency, in piped water systems. The presence of dirt particles and air in such systems results in high maintenance costs, corroding radiators and leaking heating systems. The purpose of these articles is to help eliminate the problem. This month Bryan looks at control by deaeration, while next month he will cover control by dirt separation. First though he puts the overall problem into context.

Some of the more specific problems excess air and dirt in the water supply cause are:
- Constantly leaking air admittance valves (or AAVs);
- Constantly-bleeding radiators culminating in reduced radiator output;
- Black sludge in the bottom of radiators, again leading to reduced output;
- A need to replace pump seals before expiry of their 10-year design life;
- Blocked or partially-blocked heat exchangers;
- Pump output not fully achieved, with full or partial cavitation;
- Noise across control and metering valves, and throughout a system;
- Wasting hours, days, or even weeks "chasing the air out" when filling up a system;
- Criticism of either the designer or the installer over a "poor system".

While the world is constantly changing, and many main plant items are becoming ever-more technologically advanced, what do we (typically) do to the system water? The answer is that we often treat it just like we used to do when there were large water capacity sectional or packaged boilers.

### Henry's Law

The amount of air dissolved in the water will depend on the temperature and pressure – this may be determined and explained using Henry’s Law of Absorption of Gasses in Liquids.

*Henry’s Law*

The amount of air dissolved in the water will depend on the temperature and pressure – this may be determined and explained using Henry’s Law of Absorption of Gasses in Liquids.

![Henry's Law Graph](https://arrow.tudublin.ie/bsn/vol47/iss11/1)

**Figure 1: Air dissolved into water**

Henry’s Law states that, at a particular temperature, the amount of gas that will dissolve in a liquid is proportional to the pressure under which it exists. Hence the graph in *Figure 1* (Henry's Graph of Solubility of Air in Water), indicating the volume of air that can be dissolved by water at different temperatures and pressures. The graph clearly shows that the maximum air is dissolved into water at higher pressures and lower temperatures.

### Cavitation

The principal places where cavitation occurs in piped water systems are pumps, or at system “restrictions” such as control.
IRISH METAL INDUSTRIES: TUBE WITH BUILT IN QUALITY

WHEN QUALITY AND RELIABILITY COUNT, SPECIFY TUBE FROM IRISH METAL INDUSTRIES

Thousands of properties in Ireland have a built-in quality product - copper plumbing tube from Irish Metal Industries. With its 25 year guarantee and carrying either the Irish Standard Mark or BSi Kitemark, our tube offers you proven and trouble-free service, year after year.

You can rely on Irish Metal Industries tube - so ask for it by name.
valves, radiator TRVs (thermostatic radiator valves), fan coil metering station valves etc – all points in the system where relatively high pressure drops take place.

When the pump is at rest the inlet and outlet pressures are equal, but as soon as the impeller rotates in the water, the water velocity increases but the pressure of the water on the suction side drops dramatically, allowing dissolved air to be released (the “champagne” effect). As the pressure reduces, there is a chance that the water will vapourise (if the “net positive suction head” is insufficient) and this is what is normally referred to as cavitation – i.e. the forming of cavities through the formation of vapour.

The release of this air is in the form of microbubbles which, being very small, are also extremely “hard”, and consequently typically bombard the impeller and potentially cause pitting corrosion.

Cavitation in a pump can create a situation where, because of the high temperature created by not lubricating the seal, the water can “flash off” into steam, the result being that only the salts from the water are left on the seals, a factor that will then necessitate their early replacement.

When the bubbles later collapse on the discharge side of the pump (due to the increased pressure) they can cause very strong local shockwaves in the fluid, which may be audible and may even damage the blades. The change in pressure across obstructions such as valves and measuring orifices can create similar conditions.

Removing air from piped water systems
Initially AAVs (air admittance valves) were installed to remove air, but were found lacking. Air separators then emerged and appeared to improve matters, but eventually deaeration took over as the optimal solution.

**Automatic air vents**

Following a proper design process, and using a combination of manual and automatic air vents, the bulk of air can be removed from a piped water system. However, no matter how well the system is set up, there will always be air pockets trapped that may only be displaced when the system is in operation by venting, and some air pockets cannot be removed (e.g. in the top 0.5 in of radiators).

When water is being pumped around the system microbubbles (known to be around 2 to 3μm or even smaller in size) cannot be removed by AAVs (Figure 2), as the whole mass of water/air passing under the tee does not allow the air to rise. When the circuit is shut down, any air can then gravitate, in a still water environment, to the top of the pipe/system, which is why AAVs are normally located at the top of risers.

It is common knowledge that AAVs leak – a phenomenon typically attributable to one of a number of common problems, including the valve and float being mechanically connected, the water level being too close to the valve seat (any “scum” building up will stick to the valve seat causing seepage), or the float and body having too tight a fit, causing sticking of one to the other. However, there are leak-proof AAVs available designed to address all of the above issues.

**Air separators**

Air separators are normally cheap and rely on relatively low centrifugal forces. They can separate out the larger air bubbles suspended in the water, but will not be able to remove microbubbles because the environment in the vessel remains turbulent.

**The deaeration process (temperature differential)**

Before considering the Henry’s Graph (Figure 1), the relationship between water and air needs to be appreciated: water is a natural element; therefore the amount of air in solution is controlled by the temperature and/or pressure under which it exists.

Consider an open tank of water at 10°C (containing 22.42 litres of air/m³ at atmospheric pressure – see Henry’s Graph). Heating up the water to 80°C (it will now contain 5.95 litres of air/m³ at the higher temperature) will result in 16.47 litres of air/m³ being released into the atmosphere. When the heat is turned off the water temperature will fall, eventually to the 10°C starting point.

During the cooling process, the water’s natural characteristics will return to those it exhibits when its temperature is 10°C. Its air content will thus return to 22.42 litres/m³ simply because, when cooling, the water becomes absorptive. It thus requires more air content at the lower
temperature and absorbs that air naturally from the atmosphere.

When introducing a deaerator it needs to be installed as close as possible within the system to the point where the bubbles are created to starve the water of gases – the system’s hottest point – on the common boiler flow header.

If one applies the above principles relating to air content in water, when the water leaves a boiler at 82°C it is quickly starved of gases at the deaerator. As the water circulates it can only cool, so that when it enters a radiator and passes to the outlet the temperature is reduced to 71°C. Most radiators have the bleed nipple 0.5 in down from the top, so there is always 0.5 in air pocket.

As water is a natural element, it requires more air concentration at the lower temperature, so it absorbs some of the air pocket, which then returns back to the boiler, in solution. The boiler releases this air on the next pass and the deaerator removes a proportion of the released air until all the air pockets have been automatically removed by the deaeration process.

Such a process results in the water being conditioned to an extremely deep level of deaeration, to the extent that at no point in the circulating system can air be released; the absence of air means oxygen corrosion is so well controlled as to be almost non-existent.

As previously discussed, air cannot be efficiently removed in a turbulent zone; thus removing microbubbles from water requires specific laminar no-flow regimes (still water) so that the bubbles can be eliminated by buoyancy forces outside of the main water flow. In the upper portions of the deaerator body, microbubbles do not readily coalesce; thus it is not sensible to rely on simply assuming that they will combine into larger bubbles. Deaerators need either to be taller to create this still water environment, or of an increased bore, to create the laminar no-flow area outside the turbulent waterflow, and thus allow the microbubbles to gravitate upwards and be vented from the system. Otherwise they will pass into the system and lead to the problems previously described.

The deaerator should always be installed at the hottest point in the system (on a boiler flow or a chiller return; chilled beams or ceilings require further consideration to locate the hottest point.) For the deaerator to operate properly it must be also be located where the static pressure is not excessive – manufacturers will advise on this.

Following the removal of air pockets, the system water is then conditioned to an extremely deep level of deaeration, so much so that at no point within the circulating system can air be released.

Temperature differential deaeration (Figure 3) requires absolutely no input from operatives, and is fully automatic.

The deaeration process (pressure differential) While temperature differential deaeration probably accounts for some 90% (100% in conventional domestic installations), of commercial installation deaeration, for the other 10% the solution is pressure differential deaeration. The pressure differential deaerator is the ultimate deaerator.

In this process a small volume of water is removed from the system water, exposed to a vacuum of 0.05 bar absolute, deaerated, and returned to the system. This process is repeated until the entire system is fully deaerated equivalent to the 0.05 bar absolute. So, by installing this unit, which automatically starts up each day, a very deep level of deaeration is maintained throughout system life.

Pressure differential deaeration (Figure 4) is automatic, but does require a small amount of annual maintenance because of the components incorporated.

bs news January 2009
Next month Bryan will revisit the problem of dirt particles and air in piped water systems, this time dealing exclusively with control by dirt separation.
Aphrodite Adds Strength to Hevac Portfolio

Hevac is Ireland's leading Irish-owned independent distributor of heating and plumbing products. Its expansive portfolio includes energy-efficient central heating boilers; renewable solutions; hot water heating and hot water storage units; climate and energy controls; panel, cast iron and specialist radiators; and pipe valves, fittings and other hot water heating accessories.

Featuring world-renowned brands, products are designed to meet strict efficiency, environmental, safety and relevant statutory requirements. This, along with the cope and diversity of the product portfolio and the experience and technical knowledge of personnel, is what distinguishes Hevac from its competitors.

Innovative products are constantly coming on stream, one of the latest being the Aphrodite range of tubular steel sectional radiators, the only radiator that can be grouped to the desired size using exclusive-designed nipples and o'rings which guarantee perfect sealing.

Manufactured using forged steel heads 1.5mm thick and steel pipes 1.2mm thick and of 25mm diameter, the radiators are assembled in Hevac's Santry premises in Dublin, thereby allowing for extreme versatility and flexibility. Whether it is a 20-section or 50-section unit, there is no additional charge for assembly. For large-scale projects the units can be fully assembled, welded and finished at the source of manufacture.

Each section is threaded individually at the nominal diameter of the hub of 1", while the heads have a bending radius of 20mm. Sealing is tested twice — once on the individual section and once on the assembled group at 10.5bar according to EN442. Maximum working pressure is 8bar with maximum working temperature being 95°C. Every section undergoes a protective cleansing phosphating treatment, is then painted with an epoxy powder coating, and finally packed in a protective carton box.

Another leading radiator name within the Hevac portfolio is Chappee, the recognised market leader when it comes to cast iron radiators. Whether its the traditional elegance of the Floreal range or the up-to-the-minute styling of Savane and Dune 2, the benefits of cast iron radiators are identical — excellent heat output; long life; quiet operation; and a very comfortable, natural heat.

Floreal radiators epitomise tradition and prestige to such an extent that they are even sought after by antique dealers. Savane, on the other hand, are evolutionary in that they can be adapted in height, width and power to suit each application, while Dune 2 is recognised as the cast iron radiator offering best value for price and performance.

There is also a range of Chappee steel panel radiators which come in single and double convector versions with fitted grilles and side panels.

Taken together, the aforementioned ranges make for a formidable portfolio. When coupled with the support services provided by key Hevac personnel, tailor-made heating solutions can be devised for virtually any application or project.

Contact: Damien Byrne, Hevac.
Tel: 01 - 419 1919; email: dbyrne@hevac.ie
web: www.hevac.ie
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
Uponor Consolidates Its Irish Operations

As part of the wider process of harmonisation across the Uponor Group — and in response to the changing marketplace dynamics — Uponor has restructured its operations in Ireland. Uponor is committed to developing its presence in the Irish marketplace and is confident that these improvements will enhance customer service. The new structure will provide a more streamlined and focused sales operation covering all of Ireland, supported by a dedicated contact line direct to Uponor’s Lutterworth head office. Dave Park, Area Sales Manager, will have overall responsibility for Ireland, alongside his existing responsibilities in Scotland where he has already established Uponor as one of the key brands.

His team will include the following:—

Eddie Magill (Belfast) and Sean Millea (Kilkenny) who will both act as the regional sales contacts for the installers and the merchants. Their internal support will be provided by Jayne Bates and Jan Barker.

Meanwhile, Warren Smyth will continue to act as Business Development contact for architects and consultants. His support will be provided by Dave Swinfen.

The training academy at Swords, Dublin will continue to provide comprehensive training support on installing and quoting Uponor products, linking in to the first-class training facilities at Lutterworth head office.

As far the company itself, recent developments within the marketplace have led to inaccurate speculation which needs clarification. The facts of the matter are quite straightforward. Uponor has always had two parts to its business, both in Ireland and the UK — Uponor Housing Solutions and Uponor Infrastructure. In the last few months Uponor infrastructure has been sold on to a separate company and is now trading under a new name. However, Uponor Housing Solutions was not part of the deal. It continues to trade as part of the Uponor Group, specialising in flexible pipework from 12mm to 110mm. The complete building services package is provided for, including plumbing, underfloor heating, and preinsulated pipe.

Now in its third year, Uponor Housing Solutions Ireland is still maintaining a good level of trading in the Irish market, thanks especially to the introduction of innovative new products. For instance, the new PEX system with the improved fitting system that ensures the PEX ring cannot slip down the pipe, and the auto-rotating expander tool, is starting to make an impact.

The pipe range will also benefit from an additional 12mm diameter size suitable for installing within the recesses of walls. The joint is sealed by the pipe internally, using the elasticity of the pipe to obtain a secure safe joint whose integrity increases as time goes by. Utilising the same PEX material, Uponor’s preinsulated pipe has also undergone significant investment on the supply chain aspect of the product. Increased demand has allowed Uponor to place significant investment in a decoling machine to simplify the process of straightening, cutting, and recoiling of the pipe. Uponor was also one of the first to offer this “cut to length” service, which can save money by reducing unnecessary waste and time lost on site.

In a range containing seven different pipe configurations, Uponor’s flexible pre-insulated pipe is able to transport a variety of liquids, both inside and outside of buildings, with minimal temperature differentiation. A renewed emphasis on R&D will also see the company developing its “systems” concept to give greater integration of all plumbing and heating needs, along with a host of other innovative products and systems which are expected to come to the market over the coming 12 months.

Contact: Sales Office. Tel: 01 - 895 7430. Web: www.uponor housingsolutions.com
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.

For details on the complete range of Myson products contact us at:

Potterton Myson (Ireland) Ltd
7 Whitestown Business Park, Tallaght, Dublin 24
Tel: 01 - 459 0870 Fax: 01 - 459 0880
e-mail: post@potterton-myson.ie

www.potterton-myson.ie

Published by ARROW@TU Dublin, 2008
New High-Speed Bus ‘Wilo-CAN’

In developing a “Wilo-CAN” Bus, Wilo has set a new benchmark for integrating electronically-controlled pumps into building automation systems. The increasing complexity and functionality of automation systems require ever faster and more powerful bus systems and the new “Wilo-CAN” Bus has a transmission speed of 125 kBit/s, which makes it up to 100 times faster than conventional systems. Even if signals change quickly, a safe transmission of data is guaranteed. The functions and performance have also been significantly improved.

On the pump side, the integration into the building automation is carried out by means of an IF-Module, “Wilo-Stratos” high-efficiency pumps are the first pumps to be modified into CAN-Bus-capable versions. In contrast to other systems, it offers significant cost advantages. Wiring, material and work expenses are significantly reduced because star-shaped wiring is no longer required. Further savings can be achieved as the structure requires less components.

The “Wilo-CAN” Bus is an open system and can therefore be combined with components from different manufacturers. Moreover, interfaces to other networks are possible, such as BACnet, Ethernet, BB, KNX, LON, DALI or Profinet. The system also facilitates the connection of CAN-capable controllers, sensors and other components. The CAN-Bus works by the multi-master principle which means that all switchgear has master functions and is capable of being addressed equally. Alternatively, the CAN-Bus can be operated by the master-slave principle.

The “Wilo-CAN” Bus technology allows the connection of up to 127 pumps to a CAN-Bus line. The individual pumps are initially addressed by means of Wilo Red Button technology which is shown on the pump’s display. All parameters required for pump operation can be set, modified or called in this way. Significantly, the 5 Bus module has a newly-developed infrared interface for a quick data exchange with the “Wilo-IR-Module” for commercially-k available PDA.

Numerous new data points were defined for the communication between the pump and building automation. These include the periods for pump kick or pump cycling, operating and fault signals, as well as an extensive histogram for collecting and administering the pump's operating data.

Moreover, the “Wilo-CAN” Bus offers additional functions like the option to select between the operating mode “heating” (HV) or “cooling/air-conditioning” (AC), which differ in terms of their de-activation behaviour in the event of faults. In the operating mode “heating”, faults are processed “tolerantly”, i.e. only after a fault has occurred several times. In many cooling and air-conditioning applications, however, the safety for the installation requires that pumps are switched off after the fault occurs for the first time. A special menu item is now provided for this particular case in order to deactivate the “fault-tolerant deactivation matrix”.

Contact: Tony Cusack, Wilo Engineering (Limerick). Tel: 061 - 227 566; Derek Elton, Wilo Engineering (Dublin). Tel: 01 - 426 4000; email: sales@wilo.ie
BTUtiful, stylish and CAST IRON guarantee of quality design and craftsmanship from Hevac
Easy Controls Upgrades Cut Fuel Bills

In these times of increasing hardship, many householders wish to cut their outgoings. Fuel costs are a major expense which can be reduced without much outlay, just by upgrading the heating controls. There is a great deal the trusted heating installer can do in this respect, while also picking up some easy, high-value work.

The heating system in many homes is controlled by a simple room thermostat and a timer. The whole dwelling is controlled to a single temperature all the time the heating is on. Many rooms are not occupied though the day, yet are maintained continuously at a uniform, high temperature. So, much of the energy used is wasted.

An easy and cost-effective way to provide local temperature control is to install thermostatic radiator valves (TRVs). These are especially useful in rooms used occasionally or which require different temperatures to other areas. The set temperature can be changed easily, as required, whenever the room is occupied. Energy is saved by turning down the temperature when the room is unused.

TRVs can be installed in any room except that where the main thermostat is sited, as this must operate independently to provide a boiler interlock.

Huge energy savings can be made simply by replacing a single room thermostat by a programmable thermostat. Residents can then set different temperatures throughout the day — for example, 18°C at breakfast, a lower setting to save energy during the day, back to 18°C ready for the homecoming, and possibly a warmer temperature still during the evening. An overnight low temperature brings the heating on only if necessary to avoid a chill. Seven-day models can have a different daily time/temperature profile for each day of the week.

Many Programmable thermostats include an "optimum start" feature. The user sets the time by which the temperature should reach the desired comfort temperature, not the boiler "on" time. The controller saves energy by varying the start-up time each morning, depending on how cold it is that day and the time the building will take to warm up.

Programmable thermostats are quick and easy to install when wireless versions are chosen. There are no control cables to run — it is wireless from the room controller to a wireless receiver located near the boiler. Installers avoid the time involved in carefully drilling cable holes while the householder has no concerns about the decor. The cost of such an upgrade is quickly recovered by the householder through fuel savings, so it enables the installer to charge a price which offers a decent margin.

Wireless programmable thermostats are suited to radiator and underfloor heating, using gas and oil boilers as well as range cookers and even electric heating. They also make it easy to provide separate heating zones for parts of a building, each with a unique time/temperature profile.

There is much advice on energy efficient heating controls on the new Honeywell web site at www.honeywelluk.com. In addition, the Honeywell Technical Support Team provides telephone advice to installers and contractors during office hours on Tel: 0044-1344 656125.

The CM900 programmable thermostat from Honeywell is available in wired and wireless versions. Both types can be wall-mounted, or the wireless version can be used on a table stand as shown.
Choose systems that consistently deliver.

When there is 30 years of experience on offer, why trust anyone else...?

Permanently watertight and oxygen diffusion tight, Uponor Multi-layer Composite Pipe is the safe, secure solution for all applications. With low linear expansion rates and high inherent stability, Uponor MLC Pipe is a lightweight yet extremely resilient product.

Working in partnership with many leading architects and engineers, and with sales and service team throughout the country, to create better environments, Uponor simply offers more.

t: 01 895 7430
w: www.uponorhousingsolutions.ie
Quinn Merriott & Elysian Prove Winning Combination

Contemporary, stylish and chic. Not words one would typically associate with radiators, but Quinn Merriott Radiators, Ireland’s leading manufacturer and supplier of specification radiators, epitomise these traits. Combining style and substance, the company develops modern, aesthetically-pleasing radiators, with a strong focus on functionality as well as quality design. Quinn Merriott’s characteristic flat tubular products form the core of the range, and it is these radiators that have recently been used in the world-class Elysian building project in Cork.

The Elysian was recently featured on TV3’s “The Apprentice”, and was developed by O’Flynn Construction. Mechanical contractors for the project were the Bowen Group and Arup Engineering, the consulting engineers: It is a landmark building, standing as it does as Ireland’s tallest residential building at 17 stories.

All the apartments are designed to give a maximum of usable living space. Interior finishes are truly contemporary, with a range of styles throughout encompassing everything from light switches to skirting boards, as well as the radiators. Today, as consumers are more designer-savvy and are prepared to invest in higher-spec models in order to improve the aesthetic finish of their homes, specifiers are seeking out the best the market has to offer in every product category. Quinn Merriott radiators more than fit this bill, with signature feature models including horizontal and vertical panels, and column and multi-columns. All are superbly crafted with exceptional finishes.

As with projects like The Elysian, the marketplace is seeing a return in the popularity of radiators. Developers, and indeed homeowners, now opt for more non-standard radiator choices, such as tall floor-to-ceiling column radiators and chrome towel radiators.

“Continuous investment and research into radiator technologies will ensure that Quinn Merriott can continue to offer the market cutting-edge designs and features. New technology and new design developments are of equal importance as both evolve and complement each other. With the investment we have made in the latest technology at Newport, we have the capacity to offer product from stack immediately or made to order within weeks,” says Frank Donohoe, Quinn Merriott Radiators.

A quick glance through Quinn Merriott’s current product portfolio will reveal sculptured lines, bold geometric shapes and stunning finishes in a wide variety of sizes, colours and shapes. With a comprehensive selection of designer specification radiators on offer, Quinn Merriott is guaranteed to have the perfect choice for any home interior.

Non-standard radiators are now commonplace

Quinn Merriott Radiators is a division of the Quinn Group, which has operations in the UK in the areas of commercial and business insurance, glass, plastics and hotels. It employs something like 7,000 people in Ireland, the UK and Europe.

Being part of the Quinn Group enables Quinn Merriott Radiators to leverage market knowledge from other Quinn Group companies quickly, allowing it to respond rapidly to market conditions and trends. It is seen as one of the most enduring success stories in Irish business and in 2007, the Quinn Group reported revenue in excess of £2 billion. Quinn Radiators’ range is available through a nationwide network of merchants.

Contact: Quinn Merriott Radiators. Visit: www.quinnmerriott.com
There is a reason why Wilo pumps are coloured green.

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.
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 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 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, La-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-launched and competitively priced Petite Radpack shows continuous commitment to new product development from the only manufacturer of valves and controls for the heating industry in Ireland.

Contact: Vincent Broderick, Potterton Myson (Irl), Tel: 01 - 459 0870; email: post@potterton-myson.ie
Luxury Designer Radiators from QUINN

The Quinn Radiators Designer Towel & Feature range offers exclusive features available to the customer in a wide variety of finishes that will enhance any room and is the perfect compliment to the Quinn Panel Radiator and LST range.

Quinn has developed new techniques of manufacturing that allow the customisation of products to give the customer a unique product, offering higher heat outputs & combining both functionality and aesthetic quality.

Quinn has for several years led the UK and Irish markets 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 means 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

RoI: 1800 882 332
NI: 0800 389 9980
UK: +44 1633 657000

Quinn Radiators, Derrylin, Co. Fermanagh, BT92 9AU.
Quinn Radiators, Celtic Lakes, Newport, Gwent, NP10 8ZY.

www.quinn-radiators.com
NECI Seeks 10% Pay Cut To Save Jobs

As we went to press the National Electrical Contractors of Ireland (NECI) — which claims to be Ireland’s largest trade association with in excess of 600 members — called on the parties of the National Joint Industrial Counsel and the Labour Court to abandon any further talks in relation to the existing proposed 5% pay increase for electricians. Instead it sought a 10% pay cut in an attempt to minimise job losses.

The decision was made following an emergency meeting held in Tullamore on Wednesday, 4 December, to review the detrimental affect of the current economic climate on the industry. In an attempt to secure and to maintain employment within the sector, it was decided that there was no alternative other than to call for a 10% pay reduction on the craft basic rate for electricians to be applied right across all points of the electricians scale in the sector.

The electrical contracting industry is bound by its own Registered Employment Agreement (REA). This agreement was introduced into the sector in 1990 by three parties — the Technical Engineering & Electrical Union representing employees; the Association of Electrical Contractors and Electrical Contractors Association, both of them representing employers.

This agreement binds the estimated 5257 Irish-registered electrical contractors to all its terms in relation to pay and conditions for electricians/apprentice electricians working in the industry. Any electrical contractor breaching this agreement, or the terms within this agreement, will have to appear before the Labour Court and is likely to face fines, penalties and interest. Failure to pay these will result in the contractor having to appear before the local district court.

This agreement prohibits electrical contractors from agreeing terms and conditions of employment, pay and conditions for electricians/apprentice with any of their employees.

Denis Judge of the NEIC said: "We have seen increasing pressure being forced upon the industry from the economic downturn, the slowdown in the construction industry and increasing competition from northern and UK electrical contracting firms, which are not bound by the Registered Employment Agreement. The industry is under massive pressure with increasing numbers of electrical contracting firms being forced to breach the law (REA) to remain viable and competitive, and to secure and maintain employment for all employees within the sector.

"NECI is strongly of the opinion there has been such substantial change in the circumstances of the electrical contracting industry since the registration of the agreement in 1990 that it is now undesirable to maintain its registration."

Contact: Denis Judge, NEIC.
Tel: 087 - 254 0080;
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Denis Judge, NEIC
Hitachi Samurai Cuts Pharmaceutical Muster

Indoor environment control is essential across all applications but its significance in respect of the pharmaceutical manufacturing processes is absolutely critical. Consequently, when Columba McGarvey of Ferm Engineering was charged with replacing an ageing refrigeration system at a leading pharmaceutical plant in Donegal, he immediately consulted local Hitachi distributor Northern Refrigeration Services (NRS).

Originally built in the early 1980s, the existing chilled water system comprised three 400kW water-cooled chillers with six associated cooling towers on the roof providing space cooling and some process cooling. The objective of the contract brief was to replace the existing plant with a view to:
- Improving the chilled water system;
- Providing a system that incorporated controls to allow for partial load efficiency;
- Removing the need for expensive maintenance;
- Removing equipment from the roof.

The criteria for the new plant called for a system providing:
- High efficiency throughout with units running mostly on partial load;
- Weather-resistance to the harsh conditions prevailing in Donegal;
- A straightforward, easy-to-operate and understand control system;
- Quick availability of service and spare parts;
- Long warranty.

Working closely together NRS, Ferm Engineering and Hitachi devised a solution which comprised the installation of two Samurai 180 horsepower (500kW each) air cooled chillers. Samurai has a very compact footprint, thanks to the use of plate heat exchangers for both the condenser and the evaporator.

In addition, by combining Hitachi’s own twin-screw compressors with its advanced electronic control system, the units provide full modulation capacity control. This means that the chiller accurately matches the required cooling load at all times, resulting in lower operating costs, especially when the unit is operating at part load. The certified COP of the installation at part load is 5.16 while the seasonal COP (ESEER) is 4.55.

Sound levels and vibration were also critical to the installation and here again Samurai had the answer. Hitachi’s semi-hermetic compressors, precise machining and meticulous assembly during manufacture deliver very low sound and vibration levels. In addition, the compressors are mounted on rubber pads which protect the structure of the chillers from possible compressor vibrations, thereby giving an absolutely balanced result. Consequently, certified noise levels for the Donegal installation are 69dB at 1m @ 100% load.

Following recent installation and commissioning, the installation is now fully operational. Early indications are that all the objectives set are already being met with performance efficiencies in particular delivering even better results than projected.

Contact: Ciaron McCarthy, Hitachi Europe. Tel: 01 - 216 4406; email: ciaron.mccarthy@hitachi-eu.com
Air Tightness Testing of Domestic Dwellings
New Registration Scheme for Testers


This new registration scheme enables testers to have their operations and procedures assessed by NSAI inspectors. The process involves NSAI inspectors witnessing a number of tests being carried out against the requirements of I.S. EN 13829:2000 while the applicant company’s office will also be visited. This is to ensure that appropriate records are maintained and an adequate set of test equipment is maintained.

Following a satisfactory outcome and compliance with the scheme requirements, the applicant company is registered and receives its NSAI Certificate of Registration.

Benefits of I.S. EN 13829:2000 Registration are:
- Helps developers/householders demonstrate compliance with higher levels of conservation of fuel and energy required under the Building Regulations 2007 Part L Technical Guidance Document;
- Improves the credibility of test results from a regulatory standpoint;
- Grant of registration entitles the applicant company to use its NSAI registration number in connection with operations;
- The name of the applicant company is placed in the Directory of Registered Air Tightness Testers. This directory is maintained by NSAI, will be regularly updated, and will only detail those companies who are compliant with the scheme requirements. Regulatory bodies such as the DOE and SEI will have immediate access to the directory;
- Promotes a higher level of testing and evaluation;
- Provides independent verification and reassurance to the end user.

Application and Registration Process
- Company submits application;
- Company is contacted by NSAI to arrange audit date;
- Following the audit a report is issued and findings are identified. Appropriate resolution is agreed;
- The company is registered.
- Company can now use its official NSAI registration number on test reports and certificates for domestic buildings it has tested;
- Company is subject to regular surveillance audits.

Information packs, including application forms, are available from the NSAI.

Contact: Cathy Martin, NSAI.
Tel: 01- 807 3965;
email: cathy.martin@nsai.ie
A Crystal Clear Day at the K Club

Crystal Air was delighted with the turnout at the prestigious K Club recently for the Crystal Air golf day. This event always attracts a large field, a fact which reflects the company's ability to not only be professional on a work level but also on a social level.

Given the inclement weather of recent weeks it was with trepidation that Crystal Air looked forward to its day at The K Club. However, on the day itself the rain stopped and the sun shone brightly as the 36 participants making up 10 teams teed off throughout the course of the morning.

In keeping with previous years, the relaxed nature of the day was very much reflected during the dinner and presentation of prizes, with the proceedings continuing well into the early hours of Saturday morning.

The format was a team competition, with the winning team of Cathal Donaghe, Tom Glynn, Ger Hutchinson and Ciaran Gahan burning up the course to return a fantastic score of 86 points.

As a major trading partner of Crystal Air, Sanyo Air Conditioners Europe actively supported the event and provided a magnificent array of prizes for the winners. Presentation of the prizes took place after a fantastic meal in the Arnold Palmer Room.

The winners were as follows:
First:  Cathal Donaghe, Tom Glynn, Ger Hutchinson and Ciaran Gahan;
Second: Brian McPhillips, Des Haughton, Ray Shannon and Eugene Phillips;
Third: Owen O'Reilly, Tony Reilly, Brendan Keavney and Keith Reilly.

Other prizes on the day went to Donal Meehan for longest drive and Tony Salsi for nearest the pin.
Sustainable Energy Ireland (SEI) recently presented the Sustainable Energy Awards 2008 to recipients who have demonstrated best practice in energy management in the past year. At the presentation ceremony it also revealed that the estimated cumulative energy cost savings achieved by projects which have entered the Awards since their establishment in 2004 was €327 million.

The 2008 entrants to the Awards demonstrated energy savings of €17 million based on the energy management initiatives which they have implemented in their organisations. These initiatives have also led to the annual reduction of 100,000 tonnes of CO₂ and further energy and CO₂ savings will accrue on an ongoing basis.

Seán Power, TD, Minister for State at the Department of Communications, Energy and Natural Resources with Brid Horan, Executive Director, ESB Customer Supply and Group Services; Pat O'Donnell, Gorey Courtown Forest Park; and Brendan Halligan, Chairman, Sustainable Energy Ireland.

Brian Motherway, Head of Industry, SEI said: "Activity on energy efficiency in business is growing tremendously. The quality of entries for this year's Awards was excellent. Particularly encouraging is the standard and number of entries from SMEs. It is clear from the results achieved by these companies that there are very significant energy efficiency gains and cost savings which can be made through effectively managing the energy demands of an organisation."

Brid Horan, Executive Director, ESB Customer Supply and Group Services, said: "We are delighted to sponsor such an important event and to be involved in acknowledging and recognising businesses like these, who are leading the way and making energy management and energy efficiency an intrinsic part of their business operations."

The Energy Manager of the Year for Large Users was awarded to Intel Ireland's Energy Manager Kevin Geoghegan, while Jerry Dwyer of Lee Strand Co-operative Creamery received the Energy Manager of the Year Award in the Small to Medium category.
Excellence in Energy Management Recognised at SEI Awards

Vodafone/Dalkia, which achieved almost 10% energy cost savings, was the winner of the Small to Medium User category of the Co-ordinated Energy Management Programme, while HJ Heinz won the same award for Large Users.

Crown Paints Ireland Ltd received the award for Energy Efficiency in the Small Energy User category in recognition of its efforts to manage its lighting and heating requirements which resulted in a 40% reduction in electrical consumption.

University College Cork won the Excellence in Building Design award for its post graduate research library while the Renewable Energy Project of the Year was awarded to Gorey Courtown Forest Park Ltd, a non-profit organisation set up by local business people in Gorey to enhance the seaside resort. The addition of a biomass boiler and wind turbine to a leisure centre constructed by the organisation contributed to energy cost savings of 26%.

Energy Manager of the Year (Large User)
Kevin Geoghegan, Intel Ireland

Energy Manager of the Year (Small/Medium User)
Jerry Dwyer, Lee Strand Co-operative Creamery

Energy Efficiency Project (Large User)
St James’s Gate Brewery

Energy Efficiency Project (Medium User)
Alza Ireland

Energy Efficiency Project (Small User)
Crown Paints Ireland

Renewable Energy Project
Gorey Courtown Forest Park

Energy Awareness Campaign
Pfizer Ireland Pharmaceuticals, Ringaskiddy API Plant

Energy Services or Supply Company
White Young Green Ireland and Grant Engineering (Ireland)

Excellence in Building Design or Specification
University College Cork

Coordinated Energy Management Programme (Large User)
HJ Heinz Frozen and Chilled Foods

Coordinated Energy Management Programme (Small/Medium User)
Vodafone/Dalkia

bs news
CIBSE/DIT Kevin St Student Awards

Research Projects Highlighted As Way Forward

Earlier this month a capacity attendance was present for the annual CIBSE/DIT Kevin St Student Awards. Apart from its importance for DIT students and the College itself, this occasion is also one of the primary events in the broader building services programme. This is evidenced by its close association with — and sponsorship from — leading professional services and product suppliers to the sector.

DIT Kevin St enjoys a very strong relationship with the industry and has been dynamic in recent years in devising courses and degree programmes which cater directly for emerging and the projected future needs of the building services marketplace.

Part of the Awards’ day events is the SLL/DIT Student Lighting Design Competition. The shortlisted finalists make their presentations to the panel of assessors in the afternoon with the winner being announced later that evening. Members of this year’s panel included Jim O’Sullivan, Chief Engineer, Office of Public Works; Jim Fogarty, Managing Director, Environmental Design Partnership; Gabriel Byrne, Managing Director of Enlighten (part of the Fantasy Lights Group), paid tribute to all the entrants and commended them for the quality of their presentations. He also spoke of the importance of the relationship DIT enjoys with industry and called for this to be strengthened further by way of cooperative research-based projects.

“Quality, technical excellence and design expertise always come to the fore and you students are lucky in that you are being armed with these attributes through your participation in the various courses run by Kevin O’Connell and his committed team here in DIT Kevin St”, he said.

“It is precisely because of these values that we at Enlighten are so keen to be associated with DIT Kevin St and, in particular, with the SLL Lighting Design Competition. In fact, our wish now is to expand on this relationship and to enter into a more productive arrangement with the College.

“In particular, we would like to develop a partnership whereby we could jointly conceive and execute LED-based lighting research projects aimed at developing new products and systems. We already manufacture bespoke solutions for most of the projects we are involved with and are constantly encountering new challenges which require novel and innovative approaches.

“LED technology and, more especially its correct application, is a complex issue. It is essential to understand the fundamentals of LED and the whole concept of its application before specifying it for a particular project. We don’t claim to have all the answers but we do know enough to highlight the key issues. Hence our wish to enter a research-based partnership with DIT so that, together, we can devise a strategic way forward.

“Having been closely associated with LED since its earliest
conception, we at Enlighten have a wealth of experience, knowledge and design know-how on the subject. DIT, on the other hand, has a vast reservoir of technical knowledge and accredited research-based facilities and personnel at its disposal. Together they make for a formidable combination.

“My wish is for us to combine these strengths to push out the frontiers in respect of LED lighting design and development. I’m convinced that, between us, we have the resources not just to pioneer new concepts in LED technology, but to develop a viable manufacturing industry on foot of those concepts. I believe that, together, we can pioneer developments which will become future industry benchmarks.”

This ringing endorsement for the high calibre of students DIT Kevin St produces was echoed by many other speakers on the night, both formally and informally, and all credit is due to Kevin O’Connell and his team for their achievements in this respect.

DT010 Bachelor of Technology Year 2 Wholetime
Student of the Year — Brian Mulligan
Runner-up — Darragh Finnan
Runner-up — Patrick Crowley
Best Project — Declan Caffrey

DT083 Year 5 Bachelor of Technology (Part-time)
Student of the Year — Anthony Colohan
Runner-up — Brian Redmond
Runner-up — Stuart Gaffney
Best Project — Anthony Colohan

DT010 Final Year 3 Bachelor of Technology Wholetime
Student of the Year — Peter Whitty
Runner-up — Cathal Morgan
Runner-up — Joe Gettings
Best Project — Peter Whitty

SLL Medal for Excellence
Winner — Patrick Crowley
Joint runner-up — Jason Higgins and Sean Campbell

Gold Medal for Student Excellence
Peter Whitty
Paul Nolan
Anthony Colohan

MSc Research Awards
First — Robert Lynch
Joint Second — Ruth Buggie and Brian O’Rourke
Third — Bernard Lynch

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Since we destroyed the woods
with crazy chainsaw, oiled
the sea, burned up the clouds,
upset the natural world
to grow fat, if I may
I want to apologize
for our mistakes and pay
homage to seas and skies,
to field and stream; to you,
great Gaia our first mother
with your confused retinue
of birds, your weird weather.
You’ve done so much for us
and what do we give back?
Suspension bridges, yes,
and columns of black smoke.
Blowing hot and cold,
you love us and hate us both;
we babble about the world
while you sustain the earth.
You will prevail of course
if in a different form;
we go from bad to worse
just trying to keep warm

As guest speaker at the recent CIBSE Annual
Lunch, architect Mick McDonagh gave an
excellent address. He spoke of his experiences
as Chief Architect overseeing the regeneration
of Ballymun; of his time as Cork City Architect
involved with urban renewal projects, the new
Cork City Hall and Cork Docklands; and of his
recent move into private practice as Director
of Urban Design with Mitchell Associates.
However, he completed his address with this
extract from a very thought-provoking and
poignant poem by Derek Mahon. It is especially
apt for this more contemplative time of year,
and particularly so as the industry seeks to
move forward in a more sustainable manner.
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