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Ireland's Showcase for the Built Environment

PlanExpo

RVR Opens Second Factory
Refrigeration — Legislation Beginning to Bite
Whiskey Refrigeration ... From out of the West!
Trane — Energy and the Environment
Innovation in Pumping Technology

Wilo-MVi and MHi range

This range of Stainless Steel Vertical and Horizontal Multistage pumps are suitable for water supply and pressure boosting duties, sprinkling, irrigation, high pressure wash, fire protection and water treatment (de-mineralisation, filtering).

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• Boosting
• Sprinkling
• Irrigation
• High Pressure wash
• Fire Protection
• Water Treatment
• Boiler Feed

Wilo Engineering LTD
Enterprise Centre,
Childers Road
Limerick, Ireland

Tel: 061-410963
Fax: 061-414728
E-mail: sales@wilo.ie
Internet: www.wilo.com
Refrigeration — Legislation Beginning to Bite!

There is no doubt but that the impact of current and forthcoming legislation in relation to refrigeration is going to bite, and bite hard, on established practices within the industry.

For starters there is the Pressure Equipment Directive (PED). It sets out “essential safety requirements”, valid for pressure equipment in general. Only products fulfilling these requirements may be placed on the market and put into service.

Just how these requirements will be interpreted and implemented remains to be seen. Depending on the type of refrigeration business area and the refrigeration type, the impact will be different ... but there will be an impact.

Then there is the Regulation requiring refrigerant leak detection. EC Directive No: 2037/2000 - which actually became law on 1 October 2000 - is so all-embracing that it applies to all refrigeration and air conditioning installations in all circumstances.

It especially deals with leak detection and leaking systems yet, the industry at large has yet to take it on board with any great enthusiasm.

This situation will not be allowed to continue, nor should it. We all have responsibilities in relation to the protection of the environment and those working with potentially-harmful materials must be especially vigilant.

Moreover, the reality is that these new regulations also present commercial opportunities. Rather than view them as problem areas which present nothing but difficulties, the industry should regard them as a means to further business development while, at the same time, doing something positive and constructive for society at large.

IN THIS ISSUE

News

BTU Results

Whiriskey Refrigeration ... From out of the West

RVR Opens Second Manufacturing Plant

Trane — Energy and the Environment

Refrigeration — Legislation Beginning to Bite

York Global Strategists Meet in Dublin

Plan Expo — Showcase for the Built Environment
**Boilers with a Cast Iron Guarantee!**

Sime gas and oil-fired cast iron boilers are recognised for their safety, endurance, energy savings and reliable performances. They are designed and built in accordance with the European Directive CEE 92/42.

Hevac Ltd, who is Sime's exclusive agent in Ireland, has been selling the quality cast iron boilers into the Irish market for nearly 30 years and is proud of the fact that many of the original boilers installed are still in operation today. Such is Hevac's confidence in the quality and reliability of Sime boilers that it continues to offer an unprecedented 12-year "cast to Last" guarantee.

There are many models available, in both gas and oil, with outputs from 17kW to 279kW. Sime oil boilers are equipped with complete and functional instrumentation, and can be combined very easily with the most widely-used burners. To provide maximum operating safety, the controls are protected by a door to prevent any accidental tampering.

Hevac's considerable success with Sime boilers is based on a simple strategy of providing quality products complemented by an equally quality-conscious service support structure comprising ex-stock availability across the range and a complete range of spare parts.

Contact: Declan Kissane, Hevac Ltd.
Tel: 01 - 419 1919.

---

**Copper — Versatile, Uniform and Value-for-Money’**

Copper tube and fittings can be used in every part of a domestic, commercial and industrial plumbing and heating system, including gas, hot water, cold water and central heating with total confidence. It's strong, it bends easily and systems can be assembled both on and off-site.

"You can solve just about any problem with copper and rely on the results," says Conor Lennon of IMI.

Copper tube is available in the size range 6mm-219mm, while copper and copper alloy fittings are available in a wide range of sizes and configurations.

Copper tube is produced in a variety of tempers, including soft temper coils, half hard and hard temper straight lengths.

Copper tube and fittings are also available with protective plastic finishes and for decorative results...

externally plated with nickel, chromium, silver and gold.

Most copper tube and fittings are manufactured to the British Standard Specifications BS 2871 Part 1 and BS 864, Part 2 and quality control systems to European Standards ISO 9002, EN 29002 and to British Standards Specification 5750: Part 2.

Contact: Conor Lennon, Irish Metal Industries.
Tel: 01 - 295 2344.
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email: info@ventac.com

Published by ARROW@DIT, 2001
Haier Looking for Irish Distributor

The sixth largest global manufacturer of consumer products, Haier — who is to introduce its range of air conditioning products in Ireland shortly — already claims to have a 10% market share of the European market for air conditioning products through its OEM customers. Ted Berry, who until last year headed up toshiba operations in the UK, is now spearheading Haier’s European launch.

“The range is very extensive and includes chillers, fan coil units and all the DX type units you would expect from the market leaders, including a range of VRF products”, according to Berry. He explained that, as market leader in China with production of four million units per annum (the Chinese market, the largest in the world for air conditioners, was forecast to be worth 10 million units in 2001) Haier would be launching in Ireland with the backing of great experience and support. “Haier’s partners are all seasoned campaigners from the European air conditioner market, he told BSNews. “However, we will be looking for an equally-seasoned company in Ireland to handle the range and brand for us. It is very important that it is someone who knows and works in the Irish market”.

Berry went on to explain that Haier’s target is not just to launch another range of air conditioning products that will add to the already-crowded market, but to target new market sectors for air conditioning with some innovative products.

Launched this month is the MRV range, which is a mini VRF system suitable for residential air conditioning. As it is single-phase, energy efficient, and inverter drive, this product can have one outdoor unit and up to six indoor units and can be installed competitively against central heating systems. It is also suitable for small hotel/guest house use and will be targeted at small offices that in the past have considered air conditioning to be for blue chip companies only.

Berry accepts that there have been initiatives in the past to launch Chinese products in Ireland by small entrepreneurial manufacturers and dealers. “But Haier are not small”, he says. “They are larger than most Japanese brands and anyway, after 35 years in the European air conditioning industry, I would certainly not be involved with a brand that was not solid and had an excellent future. I look forward to talking to similar-minded companies in Ireland”.

Contact: Ted Berry, New Century (Haier) Air Conditioning.
Tel: 0044 115 929 0047.

The Haier MRV System is convenient, economical and space saving. It can accommodate up to six individually-controlled, wall-mounted units off one outdoor unit. Conditioners through its OEM customers. Ted Berry, who until last year headed up toshiba operations in the UK, is now spearheading Haier’s European launch.

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Contact: Ted Berry, New Century (Haier) Air Conditioning.
Tel: 0044 115 929 0047.
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Service Line: For orders and further information.
Telephone: (01) 295 2344/295 2137.
Fax: (01) 295 2163
Irish Metal Industries Ltd, 25 Spruce Avenue, Stillorgan Industrial Park, Blackrock, Co Dublin.
Drane-Kooler from Standard Control

Dri-Steem Humidifier Company recently released a new compact, horizontally-designed Drane-Kooler which is now available from Standard Control Systems. Drane-Kooler is a water-tempering device that mixes cold water with hot water discharged from various types of equipment, such as a humidifier, to reduce the discharged water temperature to below 100°C.

Disposing of boiling water to open drains is a recurring problem for building managers responsible for the efficient operation of humidifiers on site. In many countries it is illegal to drain water at 100°C into the public sewer, and where it is not illegal, it is strongly discouraged.

One answer to this problem is the redesigned Drane-Kooler™ with BSP threads from Dri-Steem. “The new compact, horizontal design and mounting options offer maximum flexibility, allowing the Drane-Kooler™ to be installed on the wall, on the floor under the humidifier, or suspended from an overhead support”, says Standard Control Systems Joseph Donnelly. “This means that there is a mounting configuration that will suit every application”.

Dri-Steem Humidifier Company offers a complete line of humidifiers, dispersion systems, and microprocessors for accurate, non-interruptible, relative humidity control. It is a subsidiary of Research Products Corporation, who manufactures Aprilaire®, the leading residential humidifier brand, as well as air cleaners, heat-recovery systems and HVAC accessories.

Contact: Standard Control Systems.
Tel: 01 - 429 1800; email: info@standardcontrol.ie

Honeywell Smartfit from C&F Quadrant

“Honeywell Smartfit — New standard for central heating control” from C&F Quadrant

Honeywell’s new Smartfit central heating control system is now available from C&F Quadrant.

It features low-voltage wiring and plug-in control connections to minimise the chance of errors and to make wiring quicker and simpler.

Central to Smartfit is a connection box that provides plug-in or simple two-wire connection for all space heating and hot water controls. There is no need for a wiring diagramme: installers simply connect the two-wire room unit, plug in the valves and cylinder sensor, and the system is complete, whether it is an S-Plan or Y-Plan.

In developing Smartfit, Honeywell researched the biggest problems facing installers and developed Smartfit to remove the difficulties of wiring and fault finding. Honeywell also researched householders’ wishes, so that the Smartfit controller brings together central heating and hot water control in a single, stylish unit.

Contact: C&F Quadrant.
Tel: 01 - 626 5711; email: sales@cfquadrant.ie

Pickerings Lifts Neat Idea

Pickerings Lifts Europe, a technological innovator in the lift industry and one of the longest-established lift manufacturers, has developed their new concept in “vertical access platform lifts”.

Pickerings’ PPL Model A is a free-standing lift that can be installed in almost any type of low-rise building without a lift shaft. Significant savings can be achieved in terms of cost, installation time and disruption to business, especially in existing buildings.
Skillnets Directory and Review

Skillnets, the body for enterprise-led training, has published a comprehensive review of its Training Networks Programme which was set up in November 1998. The Interim Review was launched by the Tánaiste, Mary Harney, TD and highlights the wide range of activities and developments that have taken place during the first two years of Skillnets pilot programme. Pictured are Domhnall Mac Domhnaill, Chairman of Skillnets and Maire Hunt, Chief Executive of Skillnets.

Radial Fans from Ventac

The extensive range of Mietzsch Radial Fans, Series VRE/VRE-EX, are now available from Ventac. Key features and benefits include:

- Application in all ranges of ventilation;
- High chemical resistivity by the use of plastic materials;
- Capacity gradation by seven sizes and two versions;
- High efficiency and little noise emission;
- High reliability and long service life;
- Explosion-proof versions;
- Volumetric flow up to 5.73/s (20,500m³/h), pressure increase up to 3,450 Pa;
- Housing left and right;
- Many accessories.

Contact: Ciaron King, Ventac Group. Tel: 01 - 667 1077; email: info@ventac.com

Photo shows Mietzsch Radial Fans, Series VRE/VRE-EX, from Ventac.

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FLEXALEN is the unique flexible pre-insulated pipe system.

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A PIPELINE PRODUCT
New Dwyer Instruments Catalogue

The new Dwyer Instruments Controls & Gauges Catalogue from Manotherm features more than 3,500 precision instruments, including more than 40 new ones, and has been smartly re-designed to make it easier for customers to locate any of them.

Sections now headed "Data Acquisition" and "Humidity" eliminate, for example, the need to hunt for data loggers or humidity transmitters in the larger category of "Temperature". The "Flow" section has been divided into "Flow" and "Air Velocity", making it quicker to browse through closely-related sets of these instruments. Test equipment is now grouped in a section with that title. Combustion instruments are located in "Combustion".

Also, pagination for the new edition is consecutive and independent of product category. Customers can find any product in the index, then turn (ignoring section) to the listed page. As usual, the catalogue conveniently places prices for all products and models adjacent to photos, descriptions and diagrams. It also integrates useful reference materials, such as air velocity flow charts, gas conversion curves, and other information designed to help customers make appropriate application decisions.

Contact: Bob Gilbert/Brian Harris, Manotherm. Tel: 01 - 452 2355; email: manotherm@eircom.net

Standard Control Systems Move

Standard Control Systems have moved to new purpose-built premises. Their new address is Standard House, Riverview Business Park, New Nangor Road, Clondalkin, Dublin 12. Tel: 01 - 492 1800; Fax: 492 1801; email: info@standardcontrol.ie Website: www.standardcontrol.ie

World Skills Gold Medal Winner

Dermot Canavan from Ennistymon in Co Clare, who won the gold for Ireland in brickwork, at the 2001 World Skills Championships in Seoul. Dermot completed his training at the FÁS Training Centre in Galway and at the Dublin and Cork Institutes of Technology. He said: "I still can’t believe it, this has been the experience of a lifetime and something I will never forget". Dermot’s 'expert', Paddy Cullen from Dublin Institute of Technology said: "I couldn’t be happier if I'd won a medal myself. Dermot is a great young man with a wonderful future ahead of him".

A O Smith to Acquire State Industries

A O Smith Corporation (AOS-NYSB, SMCA-AMEX) has reached a definitive agreement to acquire State Industries, Inc, a privately-held manufacturer of residential and commercial water heaters. The acquisition includes APCOM, a State Industries subsidiary that manufactures elements, thermostats, drain valves, and other water heater components.

A O Smith Water Products Company, headquartered in Irving, Texas, manufactures residential water heaters, standard and specialty commercial water heaters, copper tube boilers, pump tanks and expansion tanks.
.... and talk to RVR before you Specify or Purchase

High Efficiency Gas Fired Heaters

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Grundfos Alpha is something of a revolution. A major breakthrough in automatic controlled circulators. A pump that pumps when necessary – otherwise not. Some call it intelligent. We call it reduced power consumption, a better environment, less radiator noise, faster installation. Get ready for a new standard!
Wilo Sewage System at The Arthouse

Wilo Engineering has recently supplied a submersible sewage system to the prestigious Arthouse building, the multimedia centre for the arts located in Curved Street, Temple Bar. The building contains several toilet facilities in the basement which are below the connection level of the city sewer main. These appliances discharge into a collection sump, which is then pumped out to the city main. Wilo were asked to provide pumps from their sewage range, with a macerating capability.

The new system comprises two Wilo TP 40 S macerator pumps controlled via a Drain-Control panel. The pumps feature a patented macerator using an internal rotating cutter and a conical fixed cutter that combine to disintegrate solid matter, ensuring choke-free displacement and maximum efficiency. The Drain-Control panel provides full automatic duty/standby operation of the pumps, and can also allow duty/assist operation during high inflow situations. Full electrical overload protection, high level alarm, and BMS contacts are standard features.

Level control is achieved using the Wilo ‘N’ type level controller. This is a small air-filled diaphragm fitted to one of the pumps and connected to the pressure sensor in the Drain-Control panel via a capillary pneumatic tube. The panel sensor evaluates the level variations in the sump and activates the pumps at the preset levels. This provides a more accurate level control in the sump.

Contact: Wilo Engineering
Tel: 061 - 410963; email: sales@wilo.ie

‘Energy & Climate in the Urban Built Environment’

Both the number and percentage of people living in urban areas is growing rapidly. Up to half of the world’s population is expected to be living in a city by the end of the century and there are over 170 cities in the world with populations over a million.

Cities have a huge impact on the local climate and require vast quantities of energy to keep them functioning. The urban environment in turn has a big impact on the performance and needs of buildings. The size, scale and mechanism of these interactions are poorly understood and strategies to mitigate them are rarely implemented.

This is the first comprehensive book to address these questions. It arises out of a programme of work (POLISTUDIES) carried out for the Save programme of the European Commission. Chapters describe not only the main problems encountered such as the heat island and canyon effects, but also a range of design solutions that can be adopted both to improve the energy performance and indoor air quality of individual buildings and to look at aspects of urban design that can reduce these climate effects. The book concludes with some examples of innovative urban bioclimatic buildings.

Contact: James & James
Tel: 0044 8073 878558; email: james@jxj.com
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Ex-stock availability direct from the manufacturer

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Also a full range of warm air cabinet and unit heaters available ex-stock
‘In-Wall Systems — Sanitaryware Revolution’

In-Wall Systems from Armitage Shanks are set to provide a revolution in the provision of both domestic and commercial washrooms, offering a host of benefits for specifiers, installers, facility managers and consumers alike.

Robust steel frames provide the infrastructure of the In-Wall system and upon which the sanitaryware is mounted.

This steel frame provides a very strong structure to install a choice of washbasins, WC’s and bidets. The effect is that the sanitary products are actually wall-mounted, offering the following benefits:-

- Hygiene and cleanliness — All of the pipework is fully concealed behind the washbasins, WC’s or bidets that are mounted off the floor.

Cleaning of the products is made easy because of the lack of exposed pipework, facilitating improved hygiene within the washroom or bathroom;

- Water saving — The WC’s have been fitted with a dual flush facility, enabling the user to operate either a full flush (6 litres) or a reduced flush (4 litres);

- Space saving — With duct depths as low as 130mm possible, In-Wall systems maximise activity space within a bathroom;

- Noise reduction — All In-Wall systems are extremely quite, not only reducing operating noise in the bathroom, but adjacent rooms too;

- Speedy installation — All component parts of the systems, cisterns and connecting pipework are supplied in a solus package, ensuring that pre-plumbed fitting is easy. Simply fit the In-Wall system against existing walls, adjust when necessary and then connect the pipework to the mains supply and drain. Once this has been done a dry wall or bathroom furniture can be fitted, with the sanitaryware being installed at the end;

- Easy maintenance — All products can easily be removed for replacement. Access is provided to the WC cistern by simply removing the control plate. All necessary maintenance can then be done through this point.

All fittings conform to relevant Building Regulations.

Contact: Brian Redmond, American Standard Plumbing Ireland.
Tel: 01 - 456 4525.

MMP Jubilee Golf at Rosses Point

As part of its 50th jubilee year celebrations, the Sligo Northwest Regional Office of chartered surveyors Mulcahy McDonagh & Partners Ltd (MMP) held a special golf day for friends, clients and colleagues at the County Sligo Golf Club, Rosses Point recently.

Mulcahy McDonagh & Partners Ltd is a leading force in the west of Ireland's construction industry. As quantity surveyors, construction economists and project managers, the company pioneered and introduced “information technology” to the industry. It provides services for public and private sector clients in all areas of construction.

Key projects in MMP’s Northwest Region include the proposed new Tullamore General Hospital, a major health care facility in Co Offaly serving a large area of the Midlands. In Sligo projects include Sligo Town Centre, Sligo Town Hall, County Sligo Golf Club, Rosses Point (one of founder Padraig Mulcahy’s first clients) and the Institute of Technology Sligo.

John Daly, MMP with John Keating, Hyle Architects and Sean Martin, Senior Executive Architect, Sligo Corporation.

Appointments

Tegral Building Products has made four senior sales and marketing appointments in Athy, Co Kildare and Northern Ireland.

Paddy Kelly has been appointed Sales Manager (Ireland) based in Athy. Paddy has been Sales Manager in the Republic of Ireland since 1998 and his role has now extended to include Northern Ireland. He has held a range of positions in sales and administration within the company since 1978.

Robert Gilson has been appointed Marketing Manager (Ireland) at Tegral Building Products and Turners in Northern Ireland. Since 1985 Robert has held various positions within the Etex group of companies, including Sales Manager and Commercial Manager at Turners. Declan Duignan has been appointed Regional Sales Manager based in Athy and has responsibility for the area south of a line from counties Louth to Clare. Declan has worked in a number of positions at Tegral since 1994 including sales representative and depot manager. Previously, he worked with Tegral Metal Forming.

David McMurtry has been appointed Regional Sales Manager for Turners and Tegral Building Products based in Northern Ireland and is responsible for the area north of a line from counties Clare to Louth. He had been working for Turners as a Technical Sales Representative since February 2000. Previously he worked for Lafarge Plaster Board Ireland Ltd in Belfast.
Honeywell and McCool have your future all mapped out

In the world of building control technology, improving the working environment, conserving energy and raising fire and security standards are paramount.

Honeywell building controls can match the needs of any building precisely, from individual controls to a fully-integrated management control and protection system. Now, with McCool Controls and Engineering Ltd as sole Honeywell HVAC Solutions Partner, the broadest range of technological solutions has opened up in the Republic of Ireland.

Honeywell’s reputation for quality and reliability is second to none, while McCool’s established position in the Irish building controls industry, with branches in Dublin, Cork and Limerick, ensures a strong and healthy working relationship with all existing and future customers.

If you would like to know more contact:

McCool Controls and Engineering Ltd,
Unit 12 Docklands Innovation Park,
East Wall Road, Dublin 3.
Tel: 01-855 0542; Fax: 01-855 0546
Cork – Tel: 021-382055
Limerick – Tel: 061-372277
BTU Outing Results

Presidents’ Day, Powerscourt

Sponsor: Valve Control Systems: Mr Bob Daly

Winner: Brian Keaveny (16), 42pts

Class 1 (0-12)
First: Dermot Ryan (10), 38pts
Second: Gerry Baker (7), 36pts
Third: Joe Weafer (7), 35pts (on B9)

Class 2 (13-16)
First: David Lynch (15), 37pts
Second: Frank Lynch (14) 34pts
Third: Bernard Costello (16), 34pts

Class 3
First: Padraig Gillan (21), 39pts
Second: Brian Redmond (21) 37pts
Third: Tom Scott (19), 34pts

Visitors
Paud McMoynihan (19), 34pts
Sean O’Mahoney (16), 33pts

Front Nine
First: John Hunter (14), 22pts
Second: Des Prendergast (8), 19pts

Back Nine
First: Gerry Phelan (14), 20pts
Second: Jim Bollard (20) 19pts on L3

Matchplay Final
Brian Redmond v Michael O’Doherty (Jnr)
"Plastic has its uses. I use it all the time to buy copper."

For further information, please contact the UK Copper Board, 30/34 New Bridge Street, London EC4V 6BJ.
Tel: 0044 2070 724000; Fax: 0044 2070 724020; www.ukcopperboard.co.uk
Whiriskey Refrigeration ...
From out of the West!

Company founder and Managing Director, Clement Whiriskey

Whiriskey Refrigeration Ltd of Cregboy in Claregalway, Co Galway, is one of the longest-established and respected refrigeration and air conditioning companies, not just in the West of Ireland, but throughout the whole of the country.

Managing Director and company founder Clement Whiriskey, or Clem as he is more commonly known, has been a leading figure in the industry since he first established the business in 1973. Back then refrigeration expertise was thin on the ground and Clem used his extensive experience, knowledge and contacts with European and world market leaders to bring all the latest in technical innovation and product development to Ireland.

In doing so Whiriskey Refrigeration has pioneered the introduction of refrigeration and air conditioning to the hotel, catering, retail and small commercial business sector, as well as prestigious large commercial and industrial projects.

The continued success and growth over the years is based on a simple, fundamental trading philosophy, and that is to provide the most appropriate, up-to-date, quality refrigeration and air conditioning solutions.

Invariably, these are specifically tailored to suit the particular requirements of each project, the company working closely with the client and consultant to ensure that its needs are fully met.

Devising and providing the solution is one thing ... making sure that it is properly installed, tested and commissioned is another. Moreover, there is always the need for after-sales service support, for maintenance contracts, and emergency call-out response.

Obviously, to achieve that requires more than a quality product portfolio and senior management capabilities ... strength in depth is essential if such aspirations are to be realised. Hence the large team of fully-qualified refrigeration and air conditioning engineers, and the established education and training programme which keeps operatives up-to-date with all the latest industry developments and technical innovations. Every engineer is fully-qualified, trained, and certified to handle all types of refrigerant gases.

Mike Sheehan, Sales Manager, Mitsubishi Electric Air Conditioning with Clem Whiriskey, Managing Director, Whiriskey Refrigeration
Over the years there have been various milestones in the growth of Whiriskey Refrigeration, one of the most significant being the company’s appointment in 1987 to the small group of original Mitsubishi Electric air conditioning dealers in Ireland.

Already very strong in refrigeration, Whiriskey used its trading partnership with Mitsubishi Electric to underpin its market position in refrigeration while, at the same time, capturing an ever-increasing market share of the air conditioning sector, especially retail, hotel and catering, and commercial projects, both large and small. This relationship has strengthened even further in recent years with Whiriskey Refrigeration now one of Mitsubishi Electric’s largest and most successful dealers in the entire country.

Another significant development was the move to purpose-designed premises in Cregboy on the outskirts of Galway city which stand on approximately 10,000 sq ft and incorporate showrooms, offices, and extensive workshop facilities.

Complementing this strong physical infrastructure is an equally-strong management and operational structure. ISO 9002 accreditation covers all aspects of the business, thus ensuring that there are certified, written procedures governing the entire product and service offering.

Contact: Clement Whiriskey, Whiriskey Refrigeration.
Tel: 091 798154;
email: whirRef@iol.ie
Website: www.whiriskey.com

Johnny Lynagh, Sales Manager with Sean Ruane, Sales Executive and Paul Kelly, Senior Installation Coordinator

Darragh O’Neill, Sales Executive, Mitsubishi Electric with Mike Sheehan, Sales Manager, Mitsubishi Electric Air Conditioning; Clement Whiriskey, Managing Director, Whiriskey Refrigeration; Ian Robertson, MACE, The Mitsubishi Electric Air Conditioning Manufacturing Facility in Scotland; Johnny Lynagh and Sean Ruane, Whiriskey Refrigeration. They were pictured at the presentation of the Mitsubishi Electric Air Conditioning Dealer of the Year Award to Whiriskeys.

Some of the Whiriskey Refrigeration engineers pictured outside the company’s premises
RVR Opens Second Manufacturing Plant

RVR Limited, the Kenmare-based manufacturer of HVAC equipment has opened a new 2000 sq m manufacturing plant at Killorglin, Co Kerry. The company was formed as a consequence of a management buy-out in 1994 and its turnover has quadrupled since then.

The existing Kenmare operation will be retained and will focus on the manufacture of Re-Verber-Ray overhead radiant gas heaters, distribution of MAN condensing boiler products, and the company's air conditioning equipment.

The new factory will be dedicated to the manufacture of air handling units for the Irish and a rapidly growing export market. The plant is equipped with state-of-the-art sheet metal facilities, including CAD/CAM punching and bending. Other manufacturing processes include extrusion processing, MIG welding and electrostatic powder painting.

The plant is equipped with overhead cranes to facilitate the handling of the largest air handling units and components.

An R&D facility for air handling products will also be located at the new plant. This facility will focus on continuing development of air handling products and accessories in compliance with the latest European standards.

The RVR management team has recently been joined by new recruits in the areas of export sales and production management. The team now comprises Michael Hayes, Managing Director; Joann Murphy, Financial Controller; Brian Mulhare, Sales Manager Ireland; John Rice, Sales Manager Export; Tadhg Condon, Customer Care Manager; and Barry O'Sullivan, Production Manager.

Contact: Brian Mulhare, RVR. Tel: 064 41344.
A New Generation of Optimised Chillers

A World Leader in Chiller Technology

Trane Ireland Ltd
8 The Mall, Lucan, Co Dublin.
Tel: 01 628 2965 Fax: 01 628 2266
Energy and the Environment

“There is a 90 percent chance the planet’s average temperatures will rise 1.7 to 4.9°C by 2100”.

This simple statement in the June 2001 report released by National Centre for Atmospheric Research in Boulder, Colorado leaves little doubt of the magnitude of the threat from global warming. The UN Environment Program estimates that the extra economic costs of disasters attributable to global warming are running at more than $300 billion annually. The global community is responding with actions, lead by the Kyoto Protocol, which aims to reduce emissions of global warming gases.

Nearly 90% of global warming gas emissions are CO2, which are primarily from the use of fossil fuels for energy. The focus on energy will undoubtedly continue to increase. Throughout the world different methods are being used to encourage reduced energy use. Japan has enacted the Energy Conservation Law in 1999. The U.S. has revised ASHRAE Standard 90.1 to raise the minimum COP level for centrifugal Chillers from the current value of 5.2 to 6.1 effective in October of this year. A growing number of countries are using environmental costing which includes an estimated cost for resource depletion and environmental deterioration.

Although such fees to discourage pollution were first proposed in 1920 they did not see widespread application until 1990 when Finland implemented the first carbon tax. At present there are more than 30 countries that have some type of carbon tax in effect. Environmental accounting (or costing) is a broader term than just a carbon tax on energy. For example, subsidies being provided to energy producing industries are a form of negative tax. Removal of such subsidies has the same effect as a carbon tax, which is to raise the price of energy to the user. Such methods make more energy efficient alternatives more financially attractive.

In the recently released “OECD Environmental Strategy for the First Decade of the 21st Century” the goal is to include “cuts to energy, farm and other subsidies so prices more accurately reflect environmental impacts”. China, the U.K., India, Indonesia and Thailand are countries that have recently eliminated subsidies to parts of their energy industries.

Will environmental costing continue to spread? One can only guess. It is intuitively attractive to tax something bad, i.e. environmental damage rather than something good such as one’s salary or company’s profits.

As a building owner, facility engineer or factory manager the implications are enormous. Just how much could energy prices change? According to European Research Commission Report released in July of this year “The cost of producing electricity from coal or oil would double if costs such as damage to the environment and health were taken into account”. Any significant change in the price of energy can have a major impact on the profitability and value of a building or factory. One can protect their interests by investing in the highest possible efficiency that is economically justifiable.

The move to high efficiency equipment is accelerating. And at the same time, there is increasing emphasis in system design and optimization. Low-flow / high delta-T systems are offering energy savings in operating costs and first cost through smaller pipe diameters and pump sizes. The focus on high efficiency HVAC equipment and systems will continue to increase as additional emphasis is being placed on the environmental costs associated with energy use.
So what is the Future of Environmental Responsible Products?

At Trane, we believe that the best answer to the above question can be found in a press release issued by the United Nations, immediately following the Kyoto Protocol:

"It (the Protocol) creates new incentives for technological creativity and the adoption of 'no regrets' solutions that make economics and environmental sense irrespective of climate change. Because activities and products with zero or low emissions will gain competitive advantage, the energy, transport, industrial, housing, and agricultural sectors will gradually move towards more climate-friendly technologies and practices".

Translated, this simply means that the future will belong to those technologies that offer the very highest in energy efficiency and the lowest in total emissions. The future will belong to those who anticipate; not where the environmental issues are today, but where they will be five to thirty years from now. The answer lies in four parameters that contribute towards defining "Total Environmental Impact" (TEWI):

<table>
<thead>
<tr>
<th>Refrigerant</th>
<th>ODP2</th>
<th>GWP 100Yr</th>
<th>Theoretical COP</th>
</tr>
</thead>
<tbody>
<tr>
<td>HFC-134a</td>
<td>0</td>
<td>1300</td>
<td>10.69*1</td>
</tr>
<tr>
<td>HCFC-22</td>
<td>0.04</td>
<td>1500</td>
<td>10.85*2</td>
</tr>
<tr>
<td>R-404a</td>
<td>0</td>
<td>3260</td>
<td>10.11*2</td>
</tr>
<tr>
<td>R-407c</td>
<td>0</td>
<td>1530</td>
<td>10.69*2</td>
</tr>
<tr>
<td>R-410a</td>
<td>0</td>
<td>1730</td>
<td>10.51*1</td>
</tr>
</tbody>
</table>

*2: Same conditions and calculations procedure as in reference 1.

Environmentally, what can conscientious system designers do to specify responsible products and systems?

The key words are minimise and balance. Specify products and systems that minimise and balance the items that are listed above in the TEWI parameters. There is a need to use refrigerants that minimise both ODP and GWP to address global environmental concerns. Refrigerant HFC-134a is one of the leading examples of this balance, offering zero ODP and a relatively low GWP.

Energy usage is also a critical factor in creating a balanced solution, it is a factor that is already, and will increasingly be, a critical parameter in designs that address environmental concerns. Selecting a refrigerant that offers the highest cycle efficiency is essential in developing Chillers with the highest performance. The new range of Trane Helical Rotary Screw Chillers achieve just that through their HFC-134a optimised design, simply stated: to produce the most efficient Chillers, one needs to use the most efficient refrigerant.

Efficiency is a key driver in environmentally responsible designs due to both its economic and environmental impact. The economic importance of efficiency is illustrated to the right, where the top yellow floor of the building represents the cost of the refrigerant used in the Chiller. The Blue floors represent the first cost of the Chiller itself, and the Red Floors are representative of the energy cost to operate the machine throughout its lifetime.

Whilst only a representation, clearly the operating (energy) cost dwarfs the cost of the refrigerant and even that of the Chiller. This relation is the reason why, today, a larger and larger number of Chiller purchases are made on life-cycle cost (or "total cost of ownership") basis.

Trane's New Range of Helical Rotary Screw Chillers provide the system designer with a balanced solution in delivering end-users Environmentally Responsible products. Trane's optimised R134a design along with the latest control technology, results in a machine that's Environmentally friendly, energy efficient and minimises the cost of ownership.

The Environment has become the key strategic issue for many industry sectors in recent years, the Refrigeration and Air Conditioning industry is just one of them.

Creating the right atmosphere in Ireland!
The New Generation of Optimised Chillers

Since 1987 when the signing of the Montreal Protocol introduced new challenges to our industry, Trane along with other leading manufacturers, have for aimed for optimum alignment with legislative and environmental requirements, whilst needing to maintain a competitive lead. Now the Kyoto protocol plays a key part in our future product development and associated technological research.

Next month Trane officially launch its latest range of optimised Helical Rotary Screw Compressor Chillers, designed to provide chilled water efficiently and reliably at a competitive price.

The new Trane RTAC/D range of Chillers are the result of a search for higher reliability, higher energy efficiency and lower sound levels for today’s environment. The Trane Company is the World’s largest manufacturer of large Helical Rotary screw compressors. Over 100,000 Screw compressors World-wide have proven that the Trane Screw compressor has a reliability rate of greater than 99.5% in the first year of operation, unequalled in the industry. With fewer moving parts than any other Screw Compressor design, the Trane Screw compressor has longer life and reliability designed in.

Higher energy efficiency in a helical-rotary compressor is obtained by reducing the rotor tip clearances. This next generation of screw compressor is no exception to the rule. With today’s advanced manufacturing technologies, clearances can be controlled to even tighter tolerances. This reduces the leakage between high and low pressure cavities during compression, allowing for more efficient compressor operation. The patented combination unloading system on the Trane Screw compressor, uses the variable unloading valve for the majority of the unloading function. This allows the compressor to modulate infinitely, to exactly match the building load and to maintain chilled water supply temperatures within +/- 0.3°C of set-point.

Trane Screw Chillers are compatible with Trane Building Management Systems. A single twisted pair of wires tied directly between the Chiller and a Trane Tracer Summit system, provides control, monitoring, diagnostics and integration capabilities. Trane Tracer Summit working in conjunction with the Chillers unit mounted controls will maximise the comfort of building occupants and minimise operating costs.

For more information contact:
Trane Ireland Limited,
8 The Mall,
Lucan,
Co Dublin.
Tel: 01 - 628 2965;
Fax: 01 - 628 2266
Impact of Pressure Equipment Directive on Industrial Refrigeration

This article is a brief introduction to the new Pressure Equipment Directive (PED) and its impact on industrial refrigeration, in particular. It is not the intention that the reader will become fully conversant with the detail of the PED, but to provide an insight into the impact on industrial refrigeration, together with the work currently being undertaken to fulfil the requirements.

In the past, the legislation for refrigeration plants in Europe has been based on differing national regulations of the various countries. In 1992 the “single market” within the EU-union became effective. The objective of the “single market” was to remove trade barriers and allow free movement of goods between member states. To fulfil the goal of the “single market”, it was necessary to remove the differences in the regulations and technical standards of the individual member states. The “new approach” directives are a tool to establish technical harmonisation of all EU member states, and eliminate all national regulations and requirements of the different countries.

The Pressure Equipment Directive, also called the PED, is one of these directives.

The directive will become the “law” in all member states. It sets out “Essential Safety Requirements” in general terms, valid for pressure equipment in general. Only products fulfilling the “Essential Safety Requirements” may be placed on the market and put into service.

Does PED cover all the necessary requirements for pressure equipment (eg refrigeration systems)?

The PED does not state all applicable directives/requirements for e.g. refrigeration systems. For component manufacturers and system designers, there are other relevant directives e.g:-

- EMC Electro Magnetic Compatibility
- MD Machinery Directive
- LVD Low Voltage Directive
- ATEX Potentially explosive atmospheres (New directive – Transition period until 30/6/2003.)

All the above-mentioned directives are CE marking directives. It is therefore important that the system designer knows which directive the CE-mark refers to.

The manufacturer and/or notified body must draw up and sign a EC declaration of conformity. The EC declaration of conformity is a legal statement certifying that the products described do comply with the stated directive.

The PED came into effect on 29 November 1999, and the legislation becomes mandatory on 29 May 2002.

During this transitional period, manufacturers may choose to comply with the requirements of the directive or existing national legislation prevailing in that country.

What is the scope of the PED? The route to compliance initially involves determining whether the item of pressure equipment falls within the scope of the PED. The Directive applies to manufacturers of:

- Vessels — housings designed and built to contain fluids under pressure, including their direct attachments up to the coupling point connecting to other equipment;
- Piping — piping components intended for the transport of fluids, when connecting together for integration into a pressure system;
- Safety Accessory — devices designed to protect pressure equipment against the allowable limits being exceeded;
- Pressure Accessory — devices with an operational function and having a pressure bearing housing;
- Assemblies — several pieces of pressure equipment assembled by a manufacturer to constitute an integrated and functional whole;

Where applicable — pressure equipment includes elements attached to pressurised parts such as flanges, nozzles, couplings, supports, lifting.

Exclusions — The regulations do not apply to a variety of products, e.g. fizzy drinks cans, rocket ships etc; also equipment in use, or equipment for use, outside EU.

The route to comply with the PED An important consideration is the chemical state and classification of the intended fluid contents of the item of pressure equipment. If the fluid has a vapour pressure at the maximum allowable temperature of the equipment of greater than 0.5 bar above normal atmospheric pressure, it is treated as a gas; otherwise it is treated as a liquid. Normally all refrigerants are classified as a gas.

The fluid must be classified in group I or II.

- Group I Comprising dangerous fluids. Flammable and toxic fluids e.g. R717, R600
- Group II Comprising all other fluids including steam. Non-
flammable and non-toxic fluids e.g. 134a, R140
Route to compliance with the PED involves classifying the item. There are five categories within which equipment may fall. These are:

Sound Engineering Practice or SEP, and Categories I, II, III, and IV.

Equipment falls within these categories depending on:
- The type of equipment
- The danger of the medium being used
- The state of the medium (liquid or gas)
- The product of pressure x dimension (Ps x DN) or pressure x volume (Ps x V)

Safety equipment always falls into Category IV.

Generally speaking, the higher the category, the higher the demands are made. It is worth noting that where both the volume and the nominal size are considered appropriate, both the relevant vessels and piping charts should be used.

The category will determine the Module choices available to the manufacturer to enable him to demonstrate that the product meets the "Essential Safety Requirements" of the Directive.

The Modules are a set of conformity assessment instructions that include information on the requirements for:
- Technical documentation
- Design and manufacturing procedures
- Quality assurance
- Final inspection and testing

The choice of module depends on the equipment category and the manufacturer's method of production and quality systems.

Article 3, Paragraph 3
- Sound Engineering practice
- NO CE-mark

Category I
- CE-mark

Category II
- CE-mark
- EN 10214 type 3.1B (full tractability) Material manufacturer must be approved by a "Notified body"
- Manufacturer / quality system must be approved by a "Notified body"
- 100% pressure test

Category III
- CE-mark
- EN 10214 type 3.1B (full tractability) Material manufacturer must be approved by a "Notified body"
- Manufacturer / quality system must be approved by a "Notified body"
- 100% pressure test
- Type approval of products

Category IV
- CE-mark
- EN 10214 type 3.1B (full tractability) Material manufacturer must be approved by a "Notified body"
- Manufacturer / quality system must be approved by a "Notified body"
- 100% pressure test
- Type approval of products

Type approval of products

For Category I and higher the material requirements in the PED must be fulfilled. The general material requirement requires an impact strength \( \geq 27 \) J at lowest application temperature and elongation of break \( \geq 14\% \).

A "Notified Body" is a government authorised inspection / testing organisation and are accepted by all EU-Member states.

CE Marking

Once conformity assessment has been completed and if the equipment or assembly complies with the provisions of the Directive, the manufacturer will be required to affix the CE marking to each item of pressure equipment or assembly and draw up a declaration of conformity. The CE marking will need to be accompanied by the identification number of the notified body if it is involved at the production control phase Category II, III, IV

How does the PED affect the refrigeration industry?

Depending of the type of the refrigeration business area and refrigerant type the impact is different. Components for industrial refrigeration are in general classified for use with fluid Group I and components for commercial refrigeration in Group II.

This brief synopsis was prepared for BSN by Danfoss Ireland.
Powerful and Reliable Air-Cooled Chillers

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- Compact dimensions
- Wide operation range
- Anti-corrosion treated heat exchangers
- Control systems: DDC control, BMS, DICN
- Night setback function
- Peak load limitation
Regulations on Leak Detection Must be Observed

Far Reaching European Regulation Requiring Refrigerant Leak Detection Still Not Generally Known

"A high proportion of the users of refrigeration and air-conditioning in Ireland, and Europe generally, are still simply unaware of the wide-ranging implications of the European Community Regulation that became legally binding on 1 October 2000 — and the same could be said of a surprising number of people in the equipment and service sectors." This was the challenging assertion made by Dr Lorcan J. Maher, Managing Director of Murco, one of Europe’s leading manufacturers of advanced refrigerant leak detection equipment.

"The key point of the EC Directive No. 2037/2000 is so all-embracing that it applies to all refrigeration and air conditioning installations in all circumstances," said Dr Maher.

"The Directive on Ozone Depleting Substances states unambiguously: ‘All precautionary measures practicable shall be taken to prevent and minimize leakages of refrigerant from refrigeration and air conditioning systems’.”

For the last year, Dr Maher points out, all users and all equipment manufacturers and installers have been under these new and legally-binding obligations. Yet the seriousness of leaking systems was, until recently — if not still — of little concern to the industry. Most plant operators found it easier to top up leaking systems with refrigerant rather than find leaks and operate tight systems. In fact, historically some 70% of refrigerants were used for topping up leaks.

This started to change with the Montreal Protocol in 1987, which formalised a response to the damage being caused to the ozone layer by ozone-depleting substances. With the subsequent international phase-out programme for CFCs and HCFCs, the cost of refrigerant leaks started to become of concern but, even still, few operators took the positive step of installing gas leak monitors. A number of countries worldwide including the USA, Netherlands and South Africa, responded to the Protocol by introducing regulations or standards requiring the installation of fixed leak monitors in refrigeration and air conditioning machinery rooms.

Regulation 2037/2000 now represents the belated EC response and its requirements would normally be satisfied by compliance with the new European Standard EN378 which details a range of suitable and practicable measures.
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♦ Production of Domestic Hot Water

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Published by ARROW@DIT, 2001
come. This is a reward/punishment measure that affects a variety of energy products including electricity and includes refrigeration and air-conditioning plant. Inefficient plant, often caused by refrigerant leaks, consumes excessive energy and can now result in a substantial tax penalty for the operator.

The balancing incentives include an Enhanced Capital Allowance Scheme under which the full cost of an investment in specified qualifying technologies, including gas detectors, could be claimed against tax. This approach is likely to be followed in other European countries.

If further incentive were needed, there is also a volume of Irish and EC safety legislation covering occupational exposure that requires that workers not be exposed to harmful gases, including refrigerants, above the recommended limits. This should be complied with in the interests of worker safety. But in fact failure to do so could expose the operator to compensation claims. Gas leak monitors would show compliance and minimise this risk.

**Smart Range of Systems**

Gas leak detectors are the front line instruments in the industry’s response to the challenging comprehensiveness of the EC Regulation and the Climate Change Levy. Dr Lorcan J Maher announced that Murco has launched a new generation of gas leak detection equipment including new products aimed specially at the air-conditioning compliance needs generated by the Regulation. These will complement what is already the most comprehensive range of machinery room gas leak detection equipment on the market.

Murco is a specialist manufacturer that has in recent years developed highly-successful gas leak detection systems now used in thousands of refrigeration and air conditioning installations worldwide. Its sensor range includes state-of-the-art catalytic, semiconductor, electrochemical and infrared models and sensor transmitters to detect gas leaks in an area, room, zone, airspace or airflow.

The extensive Murco systems are based in the first instance on its state-of-the-art range of gas leak monitors/detectors, offering 1, 2, 4 and 6-channel monitors with remote sensors and a choice of one or two levels of detection. All have visual and audible alarms and relays for control or remote reporting. Available for all refrigerants and most other problem gases, they are used extensively in machinery room applications and in marine applications to ensure compliance with international maritime conventions and regulations. All Murco units incorporate constant power and system fault monitoring as standard.

Murco integrated area monitor from RSL

The Murco sensor transmitter integrated area monitor series with linearised outputs is designed to interface with third party systems, equipment and controllers as well as a Murco control panel using its selectable outputs of 0-5V, 0-10V, 4-20mA, RS485 and relays. This stand-alone monitor is also available in an explosion proof version. The Murco control panel, which can monitor up to 99 remote sensor transmitters through its RS485 port, offers many features including visual and audible alarms with graphic display, data storage, printer interface and modem or PC connection to activate service or emergency call-outs.

Murco is an Irish company with products and designs that are rapidly becoming the refrigeration industry standard. Distributed widely in Europe, they allow full compliance with EC Regulation 2037/2000 and EN378 and most insurance, work safety and maritime codes and best practice solutions. Murco products are also exported to many countries worldwide, including the United States of America where they comply fully with the local standard, ANSI/ASHRAE 15-1994.

Murco products are available in Ireland from RSL (Ireland) Ltd in Dublin, Cork, Galway and Belfast. Contact RSL.

Tel 01 4508011; Fax 01 4559592.
Geoclima from Reconair

Geoclima produces thermodynamic machines for use in air conditioning and refrigerant plants and since teaming up with Reconair to make the range available in Ireland, has captured a significant market share. The production of industrial machines requires design capabilities and technological solutions that are always ahead, along with particular care in providing total quality solutions.

Geoclima has always chosen to merge these characteristics to supply products that are suitable to the demands of the European market. The range is characterised by the product types listed below for which it is possible to use alternative hermetic or semihermetic compressors, depending on the refrigerant capacity. Some variations are also available on request with semihermetic screw-type compressors:

- Air cooled chillers for outdoor and indoor installation;
- Water cooled chillers for internal installation;
- Air cooled free cooling chillers for outdoor or indoor installation;
- Condensate chillers for inside installation;
- Heat pumps;
- Monobloc and split conditioners.

All machines are available with type R22 or alternatively “ozone safe” types R407C or R134A. Moreover, there is also a range of chillers for outdoor installations with ammonia R717 refrigerating liquid.

The use of microprocessor control and adjustment devices that can be interfaced with external computerised management systems incorporating technological innovation means additional advantages for end-users. Geoclima operates by adopting the German regulations as production standards and introducing the variations required by the country where the machines will be used. The final testing of the product represents one of the operations to which most care and attention is dedicated. The operation of each machine is fully tested and accurately checked for efficiency and the performance of all safety devices.

Contact: Mark Cooney, Reconair Engineering. Tel: 842 5200; Fax: 842 5880. email: hvac@reconair.ie

RVR Introduces Goodman AC Equipment

RVR Ltd has launched the goodman range of air conditioning products on the Irish market. Goodman Manufacturing Company produces a complete range of residential and commercial air conditioning and heating equipment at its modern, high-technology factories.

Goodman has been very successful at increasing its presence in the mature HVAC industry. Market share has grown rapidly for the company in worldwide markets.

The products currently offered by RVR include the Goodman range of condensing units in capacities of up to 40kW. These are ideal for use with air handling units and evaporator coils.

These are outdoor condensing units for ground level or rooftop applications. Heavy-gauge galvanised construction is used with weather-resistant baked-on powder epoxy paint finish with 500 hr salt spray approval.

Standard Equipment

- Quiet operating top discharge;
- Copper tube, aluminium fin coil construction;
- Brass suction and liquid line shut off valves;
- Flare connections;
- Totally enclosed permanently lubricated condenser fan motors;
- Isolated enclosed permanently lubricated condenser fan motors;
- High efficiency performance;
- Built-in fan cycle switch;
- Hermetically sealed Copeland compressor;
- Liquid line dryer;
- Liquid line sight glass;
- Low pressure automatic reset control;
- High pressure automatic reset control;
- Internally protected compressor motor;
- Dual condenser fans with divider to eliminate recirculation when only one fan is operating in mild ambient.

All equipment is CE Approved.

The Goodman range also includes “splits” and “rooftops”.

Contact: RVR. Tel: 064 - 41344; email: goodman@rvr.ie
Minimising the safety, health and environmental impact of refrigeration systems is not just good professional practice ... it is also required by force of law! RSL (Ireland) Ltd, through its partnership with Ineos and Murco, offers total solutions in respect of:-

- System Design
- Product Supply
- Leak Detection
- Gas Recovery
- Gas Recycling/Disposal

Specifiers and end-users wishing to ensure compliance with legislative requirements and optimum performance of plant and equipment can do so by nominating product from RSL Ireland.

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Free Cooling from Carrier

Many air conditioned buildings, such as data processing centres and IT switch rooms, require all year round cooling, independent of the prevailing external ambient temperature.

Depending on the local climatic conditions, it is often possible to directly cool water without the need for mechanical refrigeration. This can significantly reduce running costs.

If the appropriate conditions exist, ambient air is drawn over the modular free-cooling coil, cooling the return water from the building.

The modular free-cooling coil is installed upstream of, and in series with, the chiller. A three-way valve, regulated by the chiller control, allows the return water to pass through the modular free-cooling coil. Here the water temperature is reduced, either to the required leaving temperature (full free cooling) or partially cooled and then further reduced by mechanical cooling to the required leaving chilled water temperature (partial free cooling).

The Carrier range of free-cooling chillers — type 30GX-F — employs a modular type free-cooling section. Rather than attaching free-cooling coils to the face of the existing chiller condenser coils, the free-cooling section is a stand-alone module located close to the chiller. Although a physically separate module, the free-cooling section is integrated with the chiller control system. Site connection of pipework, controls and power wiring enables the modular system to operate as a single unit. The simple approach of physically modular, but operationally integrated systems, offers several advantages.

The return water from the systems flows into the free-cooling unit or the evaporator via a three-way valve controlled by a Carrier 1600 controller outstation. The outstation monitors the outside air and return water temperatures. When it receives an “occupied” signal from the chiller(s), it uses a control algorithm to regulate the three-way valve and free-cooling unit fans. System operation can be viewed on the local interface of the free-cooling unit control panel, or via a building management system.

Free-cooling is not always the appropriate solution. In some cases, it may cost more to operate free-cooling chillers than standard machines.

Importantly, the COP of the liquid chilling plant must be considered over its entire operating range. Core Air Conditioning offers a service, using sophisticated software, to establish the benefit/return period of free-cooling chiller(s) compared to conventional mechanical cooling. This information enables the client to satisfy themselves that the return period falls within their particular requirements. Core recommends that this comparison is always utilised.

Advantages

- The free-cooling capacity can be tailored to suit the application requirements;
- The free-cooling to mechanical cooling ratio, is not limited by the physical size of the chillers as in an integrated system;
- The free-cooling module can be located to best suit the plant area;
- Security of chilled-water supply is maximised;
- The COP of the chiller is increased in free-cooling mode.
- The COP of the chiller, when operating in the mechanical cooling mode, is not compromised;
- Fan power is reduced over the entire operating period;
- Installation is simplified as the machine is delivered in its two component modules.

Contact: Austin McDermott, Core Air Conditioning.
Tel: 01 - 294 3110;
Fax: 01 - 294 3115;
email: info@coreac.com
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Robur — Using a Flame to Produce cold!

The Robur Group was founded in 1956 and now has two factories, one in Italy and the other in the USA, with worldwide subsidiaries and an international distribution network. Innovation, research and development, and concern for mankind and the environment has led Robur to pioneer the development of gas-fired heating and air conditioning technologies. These technologies offer an attractive alternative to conventional systems, particularly given that they do not use refrigerant fluids, such as CFC’s, HCFC’s and HFC’s.

In conjunction with efficiency and reliability, this in-built respect for the environment forms the main advantage of Robur gas-fired, ammonia/water absorption chillers.

What is Gas-Fired Absorption? — It is a flame that produces cold. This apparent paradox has a particular scientific explanation. In brief, its main concept is in the use of ammonia, as a refrigerant, to cool water. A solution of water and ammonia is heated by a gas burner in the system generator. The ammonia turns into vapour and is separated from the water. It is then transferred to a finned heat exchanger, the condenser, where it is cooled by air and changes back from its vapour to a liquid state, rejecting heat in the process.

The liquid ammonia then flows through a restrictor metering device and into a second heat exchanger, the evaporator, where, in drawing heat from the water to be circulated to the system terminal units, it cools this water and once again becomes vapour.

The ammonia vapour then passes into the absorber where it meets with the water, initially separated from the ammonia in the generator. The ammonia vapour is absorbed by the water, thus returning to the initial liquid state. This phenomena of absorption gives its name to the cycle.

The obtained strong solution of water and ammonia is then returned by a solution pump to the generator, and the cycle starts again.

Water and ammonia are two absolutely natural elements with full compatibility within the Ecosystem. The use of Robur units eliminates, from the beginning, the risk of dispersion into the atmosphere of chlorine compounds that present incalculable risks for our planet. The use of a natural refrigerant fluid (ammonia) as a substitute for synthetic fluids (CFC, HCFC, HFC) is the guarantee of the environmental compatibility of Robur absorption units.

Many people remember how, 30 years ago, CFC’s were greeted as the answer to many problems concerning refrigeration since they were considered non-harmful. After only 40 years of use researchers realised the long-term affects of these new refrigerants, which are considered non-harmful. After only 40 years of use researchers realised the long-term affects of these new refrigerants, which are considered non-harmful. After only 40 years of use researchers realised the long-term affects of these new refrigerants, which are considered non-harmful. After only 40 years of use researchers realised the long-term affects of these new refrigerants, which are considered non-harmful. After only 40 years of use researchers realised the long-term affects of these new refrigerants, which are considered non-harmful. After only 40 years of use researchers realised the long-term affects of these new refrigerants, which are considered non-harmful. 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Denco Water-Cooled System from Reconair

Denco cooling water systems remove heat from process plant, dispersing it into the air using either refrigerant chillers, evaporative cooling towers, or dry air coolers depending on the desired cooling temperature. Systems, which include pump units and interconnecting pipework, are custom-designed, manufactured and installed to meet the required duty.

Denco also manufactures a market-leading range of critical space air conditioning units with the flexibility to customise the product to suit the client's requirements. Additionally, there is an extensive range of lubrication, compressed air and liquid storage systems.

Denco has a complete product portfolio to cater for all the needs of the modern critical environment.

A range of energy-efficient standard features gives maximum operating cost savings and minimum payback periods. User-friendly product selection software written by Denco engineering staff, and a comprehensive library of engineering manuals, allow equipment to be precisely matched to every application.

State-of-art Computer Aided Design and 3D modelling shorten product development times and allow bespoke solutions to be engineered without the need for costly prototyping.

All Denco products are designed with protection of the environment in mind. From the standardisation of zero ODP refrigerants to the maximum use of recyclable materials, Denco is at the forefront of reducing the impact on our most precious resource.

Contact: Mark Cooney, Reconair Engineering. Tel: 842 5200; Fax: 842 5880. email: hvac@reconair.ie

York Services Nato Fleet

When in the middle of the sea — or under it — dependable air conditioning and refrigeration equipment is absolutely vital for cooling perishables, passengers, and crew of commercial and military vessels.

In addition to stringent military requirements, each installation must meet the specifications of recognised certification groups, such as Lloyd's Register of Shipping, the American Bureau of Shipping, the United States Coast Guard, Det Norske Veritas, RINA, AMSE, Germanischer Lloyd and Bureau Veritas.

York meets the needs of both military and commercial customers in the far-flung shipbuilding, repair and service industry by integrating the technical and marketing expertise of marine departments in the US, UK, France, and Germany into York Marine Systems.

York Marine Systems applies its maritime air-conditioning and refrigeration knowledge to commercial ships of all kinds: Tankers and bulk carriers, container vessels, pure reefer ships, reefer container ships, cruise and pleasure ships, fishing fleets, ferries, LPG/LNG carriers, offshore platforms, and dockside units. Installations include our work on 450,000-cubic-foot reefer for Horn Linie of Germany. York completely outfitted the ship with screw compressors, condensers, air coolers, fans, CO2 analysis, automation and monitoring. It also supplied condensing units for freezing chambers and storage hold for a Una Tranoeceanic fishing vessel.

Military applications encompass naval compact vessels — aircraft carriers, assault ships, cruisers, destroyers, submarines, frigates — as well as naval oilers, reefer and supply vessels. Since the early 1970s, York has been the US Navy's sole supplier of shipboard centrifugal chillers, with equipment installed on some 600 vessels. The British Royal Navy also benefitted by York supplying four Royal Navy Trafalgar Class nuclear submarines with three new, non-CFC water chillers each.

Contact: York ACR. Tel: 01 - 466 0177; Website: www.york.com/products
Daikin — Powerful and Reliable Air-Cooled Chillers

Daikin’s pre- eminent position in air conditioning and chiller production has been built on over 70 years’ experience. It is also the result of an intensive and ongoing programme of research and development. Only thus can the high quality, optimised products, which have become the hallmark of Daikin, be brought to the market.

The EUWA*-LZ series are available in several capacities over a wide operation range. These chillers are produced in Ostend, Belgium and distributed via an extensive network of highly experienced specialists.

The careful development of closely-matched compressor/refrigerant combinations has enabled Daikin to produce complete ranges of water chillers — genuinely optimised for use with ozone-friendly R-407C refrigerants — that possess the same quality and capacity levels as their renowned R-134a models.

Daikin chillers offer the ultimate in flexibility and control — a reflection of the advanced technology inherent within them. Unique in their precision, power, low operating noise, easy maintenance and low running costs, Daikin chillers represent the sure and safe route to an indoor environment that is comfortable, clean and consistent.

Compressor Features
- compact, simple and robust construction;
- lack of valves or critical reciprocating components increases resistance to liquid slugging and ensures maximum reliability;
- very low bearing load, well-balanced axial and radial forces by symmetrical compression with a single rotor and 2 idle turning gate robo rs;
- very low vibration levels, resulting in less wear and low operating sound levels (silencer incorporated within compressor);
- durable polymer gate rotors for maximum reliability and efficiency;
- no oil pump necessary; lubrication is done according to the pressure difference principle;
- compressor is cooled and sealed by liquid refrigeration injection, resulting in a constant working temperature throughout an extended working life and allowing reduced rotor clearance for accurate and efficient compression.

Benefits
- unequalled reliability for increased long life operation;
- overhaul only necessary after 40,000 hours running (= 4.5 years of continuous operation).

Integrated Network
Daikin chillers with DDC can be equipped with DICN which allows the simultaneous operation of up to four chillers as if they were a single unit, in order to deliver the required cooling capacity. This results in precise and efficient capacity control and is also useful for back up purposes, ensuring that the necessary amount of cooling is available and guaranteeing reliable operation of the chiller plant. This function enables a Daikin 2MW chiller plant to be operated via a single controller.

Advantages
- choice between common leaving or entering water control;
- intelligent temperature control;
- energy saving and increasing the lifetime of the pumps;
- a difference in running hours between the different units can be programmed;
- night setback function;
- peak load limitation;
- the DICN grouped units can be integrated in the BMS;
- the controller can be located up to 300m from the unit;
- voltage free contacts are available.

Contact: Brendan Kilgallon,
Coolair Ltd.
Tel: 01 - 451 1244
Fax: 01 - 462 3434
email: info@coolair.iol.ie

Daikin F-type semi-hermetic single-screw compressor. All chillers in the range are fitted with a new Daikin semi-hermetic screw compressor, purpose-designed to operate with R-407C refrigerant, guaranteeing many years of reliable and efficient operation.
Specialist Suppliers and Designers of

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For hotels, cinemas, offices, recording studios and nightclubs

**Noise Control Engineering Products**
For noisy machines, ducts, pipes and fans

**Anti-Vibration Products**
For press machines, air-handling units, compressors and water pumps

The only company in Ireland to have our own commercial testing laboratory.

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Paula Lonergan at Tel: 01 - 667 1077; Fax: 01 - 667 1055

11 Fitzwilliam Quay, Ringsend, Dublin 4
email: ncrl@eircom.net  Website: www.ncrl.net
Intelligent Refrigeration Control

Maximum utilisation of Adap-Kool® refrigeration control systems enables total energy savings of up to 30%. Improved food quality and reduced service costs are significant side benefits. It is a well-known fact that refrigeration is a "heavy-duty" energy consumer in supermarkets. Depending on store size, the proportion of power consumed by refrigeration appliances varies from 20% to 50% of the total. Consequently, energy savings in this area are highly profitable, and electronic refrigeration controls have extended the possibilities in this respect substantially.

To identify these possibilities, the "hot spots" must be located, ie, particularly energy-intensive components in the refrigeration plant. In an average supermarket, application energy is distributed as follows (shown as percentage of the total energy consumption, see pie chart, right):

- Compressors: 47%
- Evaporators fans: 19%
- Rail heaters: 18%
- Condenser fans: 12%
- Defrost: 4%

As the work horses in any refrigeration plant, the compressors are the "greedy" power consumers. Two main factors affect their actual consumption:

- The level of the condensing pressure: each 1°C reduction of this value brings about 2-3% energy savings;
- The level of the suction pressure: each 1°C increase of this value also brings 2-3% energy savings.

Consequently, an important means of saving energy is to reduce the condensing pressure and increase the suction pressure, while still maintaining the required level of refrigeration.

Adap-Kool® refrigeration control systems offer a range of functions for this purpose: With power pack controllers, type AKC 25H5, mounted on the compressors and condensers, floating condensing pressure control is performed, constantly adapting the pressure to ambient temperature. As can be seen from the figures mentioned above, this function enables substantial energy savings. If, for example, the condensing pressure can be reduced from 50°C to 20°C, energy savings up to 25% become possible, given a stable suction pressure.

Adaptive superheat control is a cornerstone of Adap-Kool® refrigeration control systems. It was introduced by Danfoss back in 1987, based on the understanding that each evaporator has a minimum stable superheat (MSS), the necessary precondition for optimum operation. The MSS valve is not fixed, but varies depending on evaporator type/load.

When using a thermostatic expansion valve (TEV) for controlling the injection, the valve must be adjusted to give optimum superheat at a given load.

If the valve is moved too much to the left, the line might enter the wet area, which indicates that the evaporator is operating with insufficient superheat — a condition potentially damaging to the compressor.

On moving right, the superheat increases inappropriately leaving the evaporator insufficiently utilised. Thus the compressor runtime is increased to maintain the required temperature, causing higher energy consumption.

In contrast, adaptive superheat control, combined with AKV electronic expansion valves, enables the superheat to follow the MSS line in accordance with all load conditions while still maintaining safe and efficient operation. The typical method of measuring superheat is by a pressure transmitter and a temperature transmitter.

The adaptive superheat control gives reduced compressor runtime, which means energy savings of up to 12%. In addition, no manual adjustment of the expansion valve is required.

Reasonable Payback Time
Ever since Adap-Kool® refrigeration control systems were introduced in 1987, many field tests have been carried out to make sure that performances correspond to our customers expectations. The results have been affirmative throughout — showing significant savings.

Contact: Eddie Savage or John Sampson, Danfoss Ireland.
Tel: 01 - 626 8111;
Fax: 01 - 626 9334;
email: marketing@danfoss.ie
Buderus Wall-Hung Gas Boilers: High Performance in a Small Space

Buderus wall-hung boilers can be installed when there is no separate boiler room available. Where there is high energy consumption then the savings potentials of condensing technology can be fully exploited and maximum energy conserved.

The Buderus GB112 wall-hung condensing boiler with modulating burners.

The Buderus GB112 offers top-of-the-line economy and efficiency. With modern condensing technology seasonal efficiencies of up to 109% (net c.v.) can be achieved. An economical and, at the same time, environmentally-friendly heating method.

- Optimal energy utilisation thanks to economical condensing boiler technology.
- Capacities up to 60kW
- Modulating gas premix burners.
- Variable speed pumps on the Buderus GB112.
- Modular configuration for large capacity systems.
- Vertical and horizontal flue options.

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<th>Nominal heat output (kW) Modulating</th>
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<td>Buderus GB112-43</td>
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<td>Buderus GB112-60</td>
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York Global Strategists Meet in Dublin

York International recently held the annual meeting and conference of its Global Strategic Accounts Managers in the Citywest Hotel in Dublin.

This was the first time the meeting was held in Dublin and the delegates — who travelled from all over the world — voted it one of the best venues ever.

Our photographer was also present on the final day of the meeting and he captured many of the delegates enjoying a relaxed evening meal prior to their departure to all corners of the globe the next day.
Coming to you shortly on a computer terminal near you ...  

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email: joe@pressline.ie
Plan Expo

While construction growth forecasts for the current year have been reduced somewhat owing to the dampening effect of combined national and international market forces, the fact remains that construction is now the largest sector in the Irish economy, contributing 20% of GNP in the year 2000.

Moreover, Ireland’s economic growth for the year 2001 will still be greater than the European average, with the National Development Plan (NDP) ensuring that public construction and housing will be the main factors driving construction growth over the coming years. Indeed, the reduction in the manic pace of activity means that certain projects — which could not be undertaken because of skills shortages and under capacity — can now proceed.

The demand for construction products will continue unabated over the coming years, driven by the combined determination of the industry and the Government to satisfy the country’s continuing need for new housing, commercial, industrial, educational, hospital and infrastructural solutions to accommodate and sustain the our vibrant economy.

Charged with this responsibility, the construction industry has responded magnificently. The level of cooperation and partnership between the various sectors has been unprecedented. Their combined collective efforts and strengths are showcased at by Plan Expo 2001, which serves as the undisputed shop window for the entire construction and built environment industry.

Plan Expo — RDS Simmonscourt, 8/9/10 November 2001 — is presented in association with the Royal Institute of the Architects of Ireland (RIAI) and the Construction Industry Federation (CIF). It is a dynamic format, incorporating product presentations where new products and innovative concepts are introduced; a dedicated Contractors’ Day; a major conference on Ireland’s Spatial Strategy; ongoing educational seminars; Product of the Show Awards; and the Opus Building of the Year Awards.

Plan Expo caters for the entire construction industry with a stand-alone, self-contained section — HireXpo — dedicated to the plant tools and equipment industry.

Being able to view and experience all that the industry has to offer at the one location is essential given the extremely busy schedules of the key decision-makers, senior buyers and specifiers in built environment. That they can also participate in relevant all-industry events and exchange views, opinions and experiences is equally important.

National Spatial Strategy
This is a joint presentation by the Department of the Environment, the Construction Industry Federation and Plan Expo. The development of an integrated, well-planned management strategy to oversee the growth of housing, commercial, industrial and infrastructural needs for Ireland as a whole was always a desirable objective. However, the manner in which the economy has performed in recent years has now made it a critical priority. The Government has responded accordingly and a consultation paper on the National Spatial Strategy was recently unveiled by Minister Noel Dempsey so that interested parties can discuss the issue and provide feedback by the end of October.

Against this background the Plan Expo Conference on Spatial Strategy is the perfect opportunity for planners, architects, local authority representatives, builders, environmentalists, etc to convene together in a final “wrap-up” forum where the views of the professionals can be shared and expressed.

Contractors’ Day
This is a new concept aimed directly at building contractors. The day will comprise a whole series of mini presentations on separate — though obviously interlinked — topics of critical importance to contractors. It will commence with a general overview to put the programme into context and then follow with short, snappy presentations, to be delivered in a no-nonsense, down-to-earth manner. Straight-talking, good, practical information and advice will to be the order of the day. Emphasis will be on the use of innovative products, construction methods and systems; on regulatory approvals for same; and on the running of a construction business, employment issues, insurance, etc.

Insulation & New Energy Requirement
This is a presentation by Octabuild and it will focus on Insulation vis à vis the new Energy Efficiency Requirements of the Building Regulations.

Product of the Show Awards
The Plan Expo and Hire Expo Product of the Show Awards are an added display, sales and marketing opportunity for exhibitors. Once shortlisted, the the finalists are presented on a dedicated, centrally-located stand, right in the middle of the exhibition area. All the products featured are presented in a uniform fashion for the duration of the entire show, with appropriate signage indicating the category entered and also referring back to the exhibitor’s main stand at the show.

Awards’ Patron is Noel Treacy, TD, Minister for Science & Technology. He will present the winners with their trophies on the afternoon of Friday, 9 November.

Opus Building of the Year Awards
The Opus Building of the Year Awards at Plan Expo have captured the imagination of the industry at large, and architects in particular. The unique Awards format — and especially the judging and assessment criteria — fill a particular niche which has encouraged entries from a very diverse and wide-ranging number of architectural practices, and covering all manner and scale of projects.

The Panel of Assessors look for architecture which rises above pure utility, beyond basic construction, to combine all that is practical and necessary with something that is meaningful, humane and beautiful. To that end the site visit by the assessors to the various projects is critical and forms an essential element of the final decision-making process.

Contact
For admission tickets, full conference and events programme, and pre-registration contact: Tel: 01 - 295 8181 or email: info@expo-events.com
SIME cast-iron boilers are recognised for their safety, endurance, energy savings and reliable performance, most of them still working perfectly here in Ireland after 25 years!

They are designed and built in accordance with the European Directive CEE 92/42.

The cast iron body is guaranteed for 12 years against leaks, faults or defects on the strict understanding that installation and operation procedures have been carried out in accordance with the manufacturer’s instructions and installation is by appropriately qualified parties to approved codes and practices.

SIME works while respecting and protecting the environment.
TINYTAG TRANSIT

AUTOMATIC TEMPERATURE LOGGING AT AN INCREDIBLE LOW PRICE!

Designed to meet the stringent high standards of temperature monitoring in the food transportation field, this little stand-alone battery-operated temperature logger is the perfect solution in most applications which range between -30 to +50°C. Capable of recording approximately 1800 readings with a 1 sec. to 10-day interval, and combining the flexibility of a push button or delayed start, you’ll be amazed at how little it costs.

The software and cable that are included will allow the recorded information to be downloaded and presented in numerical or graph format. Data can also be transferred to other windows applications for presentation with reports. Since additional loggers can be purchased at a reduced cost due to no further software being required, businesses needing multiple locations monitored will benefit even further from the TINYTAGTRANSIT’s low cost.

- 1800 readings approx.
- Two programmable alarms
- 1 second to 10-day logging interval
- Timed and push-button start available
- Offload data when stopped or when at 1-minute logging intervals
- Battery life up to two years
- Min/Max/Actual readings
- Memory size 2k (non volatile)
- Three stop options
- Software and cable included

For further information or a demonstration contact:

Manotherm Limited
THE CONTROL CENTRE
4 Walkinstown Road, Dublin 12.
Tel: 01 - 452 2355; Fax: 01 - 451 6919
email: manotherm@eircom.net