bs news
building services news

Electrical Services Engineering

MEBSCA AGM

Air Movement & Air Quality

Published by ARROW @ TU Dublin, 2008
Grundfos MAGNA
Amazingly adaptable

Intelligent, speed-controlled circulators for heating and air conditioning systems

www.grundfos.com/magna
opinion

AC Manufacturers Rise to Meet Emissions & Energy Challenge

With sustainability, energy consumption and CO₂ emissions the key factors now dominating all building services, it is heartening to see that the air conditioning sector has taken such a positive lead in addressing these issues.

There was a time when air conditioning was justifiably seen as a high energy user — that is no longer the case. As this month’s product focus on air movement and indoor air quality clearly demonstrates, all the leading manufacturers have risen to the challenge.

Our comprehensive review stretching over 26 pages details the various systems and product solutions now available from the sector’s leading manufacturers and distributors.

Apart from the varied product and system solutions proposed, what they all have in common is a dedicated commitment to performance efficiencies, lower energy consumption and reduced CO₂ emissions.

It is obvious from the many solutions offered that air conditioning manufacturers as a whole have totally embraced the whole theme of sustainability.

Nor is this approach limited to the performance capabilities of the appliances and systems concerned. It also applies to the production processes used, the sourcing and handling of materials, and the disposal of surplus and/or waste materials.

Consultants designing building services, and contractors installing them, now have a wealth of invaluable material at their disposal when considering indoor air quality solutions. It is a massive resource which, if properly availed of, will undoubtedly contribute to achieving genuinely sustainable buildings.
balicas opens cork wood pellet depot

Balcas, the timber miller and wood pellet manufacturer, has opened a new Brites (wood pellets) depot in Ringaskiddy, Cork. Balcas claims to operate the largest wood pellet mill in the UK and Ireland in Fermanagh, producing 50,000 tonnes a year.

Brites are a natural, wood-based fuel which are either manufactured in Fermanagh, or imported from German mills operating to the same European quality standards. They are available in 10kg bags from various outlets and can be delivered in bulk in quantities of three tonnes or more.

During the pellet-making process the natural resin or lignin present in the wood naturally moves to the surface of the pellet creating a protective coating which helps the pellet keep its structure.

Ash levels are extremely low and some boiler units remove the ash automatically. The small amount of ash that is removed is very high in nutrients and can be used as a high-grade fertiliser in the garden.

Contact: Brites Customer Support Team. Tel: 01 - 620 0066; www.brites.eu

idhe conference on sustainability

The IDHE is holding a conference — Getting to Grips with Sustainable Energy — in the Red Cow Moran Hotel, Naas Road, Dublin 22 on Thursday, 13 March next.

The programme will run from 9am to 4.30pm with a line-up of six industry-related speakers. Joe Noone will open the conference before handing over to Minister for Communications, Energy & Natural Resources, Eamon Ryan, TD, who will deliver the keynote address.

There will also be a number of trade exhibits from suppliers to the industry and conference delegates will have an opportunity to view them during the morning tea/coffee break and at lunchtime.

alp duct work systems

The ALP duct work system from ALP Ducting Ireland (a sister company of BA Precision) is fabricated from a sandwich panel of rigid close-cell polyisocyanate foam board, produced without DFC and HCFC, faced on both sides with an aluminium foil lacquered with an epoxy varnish. Panels show assorted thickness and different aluminium characteristics and textures to satisfy different project requirements.

The pre-insulated duct work has a Class O British Standard Fire Rating and is manufactured at the company’s fully automated, 600sq m production facility using state-of-the-art CNC machines.

Advantages of the ALP system include — pre-insulated air ducts; excellent thermal and acoustic characteristics; very low leakage; air pressure up to 2000 PASCAL; air temperature between -35°C and -110°C; air speed up to 35 M/Sec.

ALP also produces a panel called ALP Active which is manufactured from an antimicrobial aluminium foil which prevents the growth of bacteria and is intended for use in hospitals and the pharmaceutical and food industries.

Contact: Bill Ahern, ALP Ducting Ireland. Tel: 01 - 623 5855; email: bill@alpduct.ie
Driving to reduce your carbon footprint.

SANYO Air Conditioners are leading the way in sustainable product solutions. We are proud sponsors of the PGA in 2008.

www.sanyoaircon.com

SANYO Air Conditioners. The natural choice.
Homan O'Brien appoints new directors

Homan O'Brien Associates has appointed new directors at its Dublin and Waterford offices. They are Gerard Keating and James Reilly (Dublin), and Pearse Douglas and Ted Carroll (Waterford). In addition, John Furlong has been appointed Project Director at the Dublin headquarters.

Homan O'Brien Associates was established in 1990 by the amalgamation of two long-established consulting engineering practices, Robert Jacob and Partners (1955) and Seamus Homan Associates (1978). Today it is one of Ireland's leading consulting engineering firms and employs 54 people between its Dublin and Waterford offices.

Since its foundation, the practice has become firmly established for the excellence of its design concepts coupled with its committed policy of value-for-money engineering solutions.

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

Mostra Convegno Expocomfort, Milan

Mostra Convegno Expocomfort (MCE) will take place from 11 to 15 March 2008 at the new Fiera Milano Exhibition Centre in Milan.

MCE is not only an exhibition but an integrated series of exhibits and seminars focussing on heating, air-conditioning, refrigeration, thermal solutions, energy efficiency, intelligent building control, finishings and coverings.

Running in tandem will be Expobagno, the international exhibition dedicated to the bathroom world. It will showcase ceramic sanitary ware, bath tubs, shower enclosures and accessories, wellness facilities, whirlpool baths, accessorised shower cubicles, bathroom furniture, mini-spas, coverings, tiles, marble, saunas, taps and fittings, components, bathroom accessories and heated towel rails.

Details: www.mcexpocomfort.it; www.expodelbagno.it

Mtd-vsmc series acoustic collar

Mtd has introduced a new range of acoustic sound-moderating collars designed for use with ceiling-mounted disc valves. They are designed in particular for use in whole-house ventilation units where the system noise level in bedrooms is usually specified at around 29dB(A).

With MVHR systems being used in residential dwellings it is important to keep the noise to a minimum. With windows closed and air-tight construction, background noise can be eliminated with these new units.

One of the weak spots on a system is the final connection from the acoustic ducting to the disc valve. The MTD-VSMC sound-moderating collar provides additional acoustic performance at these weak spots. It is currently available in 100mm and 125mm diameter only.

Contact: Ciaron King, MTD Solutions. Tel: 045 - 900 590; email: info@mtd-solutions.com
Is your business ready to meet Ireland’s energy challenge?

Energy sustainability is key in meeting Ireland’s energy challenge and is the future for your business. To find out how you can benefit, visit the Energy Show 2008, the definitive showcase for the energy sector in Ireland.

The Energy Show is a must for suppliers and customers of sustainable energy technologies and anyone with an interest in or responsibility for energy usage in business.

April 16th and 17th, Main Hall, RDS, Ballsbridge, Dublin 4.

- This two day trade exhibition presents a vast array of innovative products and services.
- Seminars will cover efficient and renewable energy technologies.
wilo extends renewable energy systems range

Wilo has extended its standard Star-RS pump series with the addition of four new models specially adjusted to meet the hydraulic demands of geothermal installations. Designated Wilo-Star-RSG, this new range meets the requirement in this area for larger volume flow and corrosion-resistant pump housings.

This new range supplies a maximum flow of 5.5 m³/h and reaches—depending on the model—a delivery head of up to eight metres. In order to avoid corrosion when condensation water forms, the pump housing is KTL-coated. Furthermore, the pump is suitable for pumping water-glycol-mixtures up to a mixture proportion of 1:1.

The temperature range of the fluid ranges from -10°C to +110°C. A 3-step speed control switch facilitates an adjustment of the flow rate according to the demand. The motor is block resistant.

Wilo-Star-RSG pumps can be installed easily thanks to a handy spanner grip at the pump housing and an electronic quick connection with spring clips. The cable lead can be fed in from either the right or the left side of the terminal box.

Contact: Tony Cusack, Wilo Engineering (Limerick). Tel: 061 - 227 566; Damien Gernon/Derek Elton, Wilo Engineering (Dublin). Tel: 01 - 426 0000; email: sales@wilo.ie

dialight lumidrives appoints fantasy lights group

Dialight Lumidrives — world leaders in applying the latest high-powered LED technology to today's lighting challenges — has appointed Enlighten its distributor for Ireland. The agreement was formally signed at the recent Hospitality Expo in the RDS where Enlighten had a stand alongside its Fantasy Lights Group sister company, Fantasy Lights.

Speaking at the signing Gordon Routledge, Managing Director of Dialight Lumidrives, said: "The advantages of LEDs are well known and now much publicised. However, as with all new technologies there are considerations and variables which must be understood to reap the highest levels of performance in every application.

"At Dialight Lumidrives we understand the challenges and develop technology which makes the difference between an acceptable solution and one that truly shines. Enlighten shares this vision and is the perfect partner to represent us in Ireland."

Gabriel Byrne, Managing Director of Enlighten, is equally enthusiastic about the link-up. "We are a lighting company with a difference. In addition to off-the-shelf products, we provide customised, engineering-led, lighting solutions. No matter how big or small the application, it is important that the lighting chosen is sufficient for the purpose and that it blends with, and complements, the surroundings.

"Lighting must also be cost-effective and energy-efficient. This is now possible thanks to significant developments in lighting technology, especially in the area of LEDs. At Enlighten we are totally familiar with these developments and are very excited by this new association with Dialight Lumidrives. Moreover, we have the experience and engineering skills to maximise the benefits they offer to provide unique lighting solutions."

Contact: Gabriel Byrne, Enlighten. Tel: 01 - 460 1052. email: sales@enlighten.ie
Setting the Pace

At the heart of energy efficiency

The new ST9000 programmer range is the latest in the long line of innovation from Honeywell in heating control.

It is simple to fit, set and use and will help to maximise the energy efficiency of your heating system - all without missing a beat.

...IF A JOB’S WORTH DOING

Honeywell
Hi-flow control valves for steam & water

The new range of Hi-Flow control valves from Manotherm are single-seated, top or cage-guided globe valves. This is probably the simplest type from a construction standpoint but perhaps the most versatile control valve in use.

The Hi-Flow valve is suitable for applications with a smaller size valve since the valve has a greater flow capacity than most conventional valves of the same size. Coupled with this high-flow capacity, the valve also maintains a wide rangeability of 50:1 to ensure precise control.

Heavy-duty Hi-Flow valves are manufactured from the highest quality materials, precision machined and performance-tested to guarantee years of trouble-free service. Standard packing consists of PTFE V-rings and wiper to minimise friction without leakage at high operating pressures.

Available in brass, iron or 316 SS body, trim is 316SS with all-welded plug construction to provide superior durability and corrosion resistance.

Applications include flow control, mixing or diverting service. Hi-Flow is perfect for steam, water or compatible glycol solutions.

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

LG expands distribution in Ireland

LG has expanded its distribution base in Ireland with the appointment of Sensible Acon Solutions. Headed by Ken Lawlor, Sensible Acon Solutions is specifically aimed at presenting LG’s vrf products to the higher end of the contractor and end-user marketplace.

“Our continued growth in Ireland has meant that we need even more distribution outlets for our comprehensive selection of splits and VRF product ranges. We are delighted to welcome Sensible Acon Solutions to the LG fold and look forward to giving our customers the best possible products, coupled with service excellence,” says LG General Manager Tony Gittings.

Contact: Ken Lawlor, Sensible Acon Solutions. Tel: 01 - 669 4667; email: kenlawlor@sensibleac.ie

Wolseley appoints communications head

Dara O’Reilly-Daly has been appointed the first Head of Communications of Wolseley Ireland. Wolseley Ireland is part of Wolseley plc, the world’s number one distributor of heating and plumbing products and a leading supplier of builders’ products to the professional market.

In her new role Dara will be responsible for internal and external corporate and consumer communications for the company, and its brands, which include Brooks, Heat Merchants, Tubs & Tiles and Electric Merchants.

Dara joined the Heat Merchants Group in 1996 as Marketing Manager and holds a BComm from UCC and a MBS from DCU.
MYSON the made in Ireland brand

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

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

Myson Controls - Made here for you.
Mira Showers will display exciting new products on Modern Plant’s stand at PHEX Dublin, which will be held in Moran’s Red Cow Hotel on 16/17 April 2008. Among products on display will be examples from the new range of Mini mixers and the new satin-chrome-finished Elite ST integrated pumped shower.

The new Mini mixers follow the trend being set in the world of electronics where “small is better”. However, this new range of units — which are half the size of conventional mixing valves — still deliver the same high performance.

Available in built-in and exposed single sequential control valves, built-in and exposed concentric control valves, and a new format of exposed vertical dual control valves, the range offers the consumer added style options at a competitive price.

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

Built into the casing of the Elite is a small pump that boosts the cold water supply to the 9.0kW (at 230v) electric heater to give a showering performance equal to that of an instantaneous electric shower. Elite also uses Mira’s Clearscale, Optiflow and Sensiflo technologies, as well as Rublcean nozzles on the showerhead.

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

Contact: Noel Lawlor, Modern Plant. Tel: 01 459 1344; email: sales@modernplant.ie
advice from honeywell experts at phex

Heating installers visiting the forthcoming PHEX exhibition (Moran's Red Cow Hotel on 16/17 April 2008) can receive valuable advice from Honeywell experts on raising their productivity and profits, while making customers’ homes cosier and more energy efficient.

The Honeywell stand will feature the company’s full range of domestic heating controls and water products. Visitors can learn about the major new family of Honeywell heating programmers and timers, the ST9000 series. These include an enhanced version of the Honeywell Line of Text (LoT), featuring a large ultra-clear display and simple on-screen English-language instructions.

Honeywell developers worked carefully with installers and heating users to see how they interact with the controls, then added prompts at every stage so it is obvious what is happening and what they need to do next. ST9000 controls are simple to use, installers and users should not need to look at the instruction booklet.

Installers can also learn about Honeywell wireless programmers which greatly reduce installers’ time on site by eliminating wiring between the room unit and boiler; and CM Zone, the versatile wireless heating zone control system which uses wireless links from a central programmer to controllers on each radiator.

Traditional control solutions remain important and visitors will be able to see and discuss Honeywell products such as thermostatic radiator valves, digital and analogue thermostats, and a comprehensive range of valves and other water controls.

Web: www.honeywelluk.com
the magna range covers air conditioning too

Following a recent upgrade, the Grundfos range of A-rated Magna circulator pumps are now as suitable for air conditioning as well as heating systems.

Magna pumps are delivered with insulation shells for heating applications. Insulation shells for air conditioning applications are available as accessories. The air conditioning insulation shells are specially designed for the Magna, so they make life a lot simpler for the installer.

The main highlight of the extended Magna range is the AUTOADAPT feature. This unique feature makes the pumps so intelligent they constantly analyse and learn from the system. During operation the AUTOADAPT function continually adjusts itself to the best set-point, ensuring the optimum balance between comfort and energy-efficiency.

Additionally, the Magna's A-rating for energy performance is complemented by the new packaging which is also more environment-friendly, without compromising on pump protection.

Contact: Grundfos (Irl). Tel: 01 - 408 9800; email: info-ie@grundfos.com; www.grundfos.com/magna

oftec appoints republic of ireland rep

The Oil Firing Technical Association (Oftec) has appointed Damien Keenan as representative for the Republic of Ireland. He is a lecturer at the Institute of Technology in Blanchardstown in Dublin and will work for Oftec in a part-time capacity.

Damien is familiar with the oil heating industry and holds a Master Plumbers certificate, along with a range of trade qualifications, including OFTEC101,102,105E and 600A.

Working closely with David Blevings (Oftec’s Northern Ireland Representative), Damien intends to expand the number of Oftec-registered technicians in the Republic of Ireland. He will also liaise with training centres providing Oftec courses and Oftec manufacturing members.

toshiba at la stampa

During the recent renovations of Dublin’s landmark boutique hotel, La Stampa, it was decided to replace all of the bedroom’s “G” rated air conditioning equipment which were proving costly to operate and resulted in complaints from guests about noise.

Specialist contractor CRS was chosen to devise a solution. On surveying the rooms, it was decided to install Toshiba “A” rated wall-mounted units in place of the existing outdated heating systems. In total, 24 bedrooms were completely retrofitted within eight working days.

Manager Daniel Fodor was delighted with the work carried out. He told bs news: “We were very impressed with the speed and quality of the installation and the fact that the Toshiba units provide instant heat at the touch of a button.”

Toshiba model RAS10SKV produces 3kW of cooling and 4kW of heating. At 100% output, each unit costs €0.19 per hour to operate. However, as these are energy-efficient inverter controlled units, the running cost will be typically much lower.

Contact: Derek Phelan, GT Phelan. Tel: 01 - 286 4377; email: info@gtphelan.ie
trade news + product information

sanyo air conditioners 2008
product brochure

Sanyo Airconditioners' new-look 2008 brochure will feature further additions to an already-extensive range of equipment. Some of the more eagerly-anticipated units to be introduced over the coming months include the following:

The new M Series GHP VRF which will allow for 2-Pipe GHP outdoors to be connected in tandem, offering combined outdoor capacities from 13HP to 50HP for the larger projects. Part load engine management and compressor run hour equalisation is also a feature of the 2-Pipe GHP.

The 20HP 2-way GHP will have a dynamo which will provide 4KW of electricity for potential uses such as lighting or indoor units.

Additionally, new models 16HP and 25HP will be added to the 3-Phase GHP line-up.

PAC-i commercial splits will see an entire new range of systems, including the Elite PAC-i which offers increased COPs and noise reductions. Also included will be Classic PAC-i which will benefit from 50mtr pipe runs and reduced noise levels while offering a low-cost alternative to the high COP Elite PAC-i units.

Finally, SAP single-split systems will see the addition of a flat panel and more compact design wall type system. Other features of this inverter or constant speed system will include heating and cooling performance down to -150C and auto restart.

Copies of the new 2008 catalogue are available on request.

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

sanyo air conditioners 2008 product brochure

Think GAIA For Life and the Earth

SANYO

Product Range 2008
SANYO Air Conditioners: The natural choice.

PHEX
THE PLUMBING & HEATING EXHIBITION

IRELAND
2008

Keep up with the latest developments in the domestic heating and plumbing industry.
See the latest in energy efficiency and design.
Discuss your needs with the manufacturers and distributors.
Each visitor will receive a free buffet.
Win spot prizes at PHEX Ireland Roulette evening.

Belfast
Kings Hall Conference Centre
15TH April 2008 (Tuesday Lunch 11am - 3.00pm)

Dublin
Red Cow Moran's Hotel
16TH April 2008 (Wednesday Evening 6pm - 9.30pm)
17TH April 2008 (Thursday Lunch 11am - 3.00pm)

Ticket Request
To request tickets for PHEX Ireland 2008, please contact:

Tel: (0044) 20 8680 4200
Fax: (0044) 20 8681 5049
Email: info@phexshow.co.uk
Website: www.phexshow.co.uk
"Environmental Vision 2021" is a long-term environmental management vision devised by Mitsubishi Electric Group to help realise a sustainable society. It defines long-term initiatives to prevent global warming and to create a recycling-based society, the objective being to achieve the goals set by the year 2021, the 100th anniversary of the company's founding.

In order to promote the initiatives contained within the Vision document Mitsubishi Electric will train its employees to become more aware of the environment, thus working to exist in harmony with the local community and nature.

Specifically, it will conduct nature preservation and education activities involving more than one million people; train 1,000 employees worldwide to become the next generation of leaders; and promote its forest-nurturing activities and Satoyama (local hill) preservation activities.

Among the objectives set are a 30% reduction in CO2 emissions by its products; a 30% reduction in CO2 emissions caused by manufacturing plants; continuing investment of 0.1% of its production value in energy savings; the gradual introduction of photovoltaic generation systems; a 30% reduction in the total amount of material used across all business activity; enforced measures designed to promote a "reduce, reuse and recycle" philosophy; and 100% recycling of the plastic brought to home appliance recycling plants.

Contact: Paul Sexton, Mitsubishi Electric. Tel: 01 - 419 8800; email: paul sexe ton@meir.me.com

**Phex Irish dates for Belfast & Dublin**

The Phex series of domestic plumbing and heating exhibitions is now regarded as one of the primary means by which suppliers to the sector reach their target audience. Held in various venues throughout England, Scotland and Ireland, each event attracts large numbers of key decision-makers in the industry.

*Exhibitors include all the leading manufacturers serving the heating and plumbing sector. It also has the support of the many trade associations and representative bodies in the industry. Dates and venues for the forthcoming*

**Belfast**

Venue: Kings Hall Conference Centre, Belfast.

Dates: Monday, 14 April and Tuesday, 15 April 2008.

Times: 6pm to 9.30pm on the Monday and 11am to 3pm on the Tuesday.

**Dublin**

Venue: Red Cow Moran’s Hotel.

Dates: Wednesday, 16 April and Thursday, 17 April.

Times: 6pm to 9.30pm on the Wednesday and 11am to 3pm on the Thursday.

Contact: www.phexshow.co.uk

**New Power Interconnectors between Ireland & Wales**

Imera has been awarded licenses by the UK Regulator OFGEM to build two underwater interconnectors between the Republic of Ireland and Wales. Imera is a joint venture company between Norwegian listed Oceanteam and private investors, and its plan is to increase Irish energy capacity by 7% by the year 2010.

The interconnector qualifies as a priority project under the Trans-European Networks-Energy (TEN-E) programme which supports the European Union’s overall policy objectives to reinforce security of supply, increase competition, and protect the environment. This is especially important for the Irish market where energy demand is growing faster than the current market can supply, resulting in forecasted energy shortfalls in 2010.
A full programme of technical training courses has been put in place by Refrigeration Skillnet for Spring 2008. Full details are given on the network website at www.refrigerationskillnet.ie

While broad-ranging and all-encompassing, there are four new courses on offer for the first time. These are:

- **IOSH Certificate in Directing Safety**
  This one-day course aims to provide owners and directors of companies with an understanding of the moral, legal and business case for proactive health and safety management, and to give guidance on effective risk management strategies. Delegates will learn about the legal implications of failing on health and safety management, and study accidents and incidents in the context of loss. The terms "negligence", "absolute duty" and "so far as reasonably practicable" are also examined and explained. On successful completion of the course, participants will receive an IOSH Directing Safety Certificate.

- **Design of Energy Efficient Refrigeration Systems**
  This one-day course is designed for refrigeration designers and technical staff who have a responsibility for the design of refrigeration systems and the preparation of proposals and quotations. The course would also suit sales personnel who wish to increase their understanding of the energy and efficiency aspects of refrigeration systems. A well-designed refrigeration system will increase efficiency, performance and reliability. Running costs, and very often capital costs, can be reduced by optimising the design of typical commercial refrigeration systems.

- **Effective Project Management for Refrigeration Engineers**
  This one-day course is designed for refrigeration engineers, foremen and personnel who have responsibility for project management of a refrigeration installation. The course will cover commercial refrigeration projects from simple cold rooms to large-scale multi-temperature systems.

  A well-managed project will:
  - (a) reduce installation time;
  - (b) make effective use of available resources;
  - (c) reduce waste;
  - (d) improve professionalism.

  The course will guide attendees through a typical installation project and will address all the issues and potential issues that can arise. With the proper attitude, planning, training and application, the project manager can make more effective use of his time, even allowing management of several simultaneous projects.

- **Refrigeration Best Practice for Retail Installations**
  This one-day course is designed for refrigeration project managers, site foremen, sub-contractor installers, pipe fitters and technicians. The course will provide a detailed insight into the requirements for correct installation of refrigeration systems in the retail sector.

  Relevant standards and codes of practice will be covered, including EN378. A well-installed refrigeration system will increase efficiency and reliability, and reduce operating cost and call-backs.

**Contact:** Enda Hogan, Network Manager, Refrigeration Skillnet
Tel: 058 - 44211; email: refskill@eircom.net
New Air-Cooled Water Chillers From Irish Fan Distributors

Irish Fan Distributors — through its partnership agreement with Air Trade Centre (ATC) — has greatly expanded its air conditioning portfolio with the addition of a new range of air cooled water chillers, including multi VRF systems. The modular units are extremely flexible and up to eight can be integrated to achieve a maximum capacity of 1040kW output system. The units also feature self-diagnosis to ensure efficient and easy maintenance and intelligent defrost which greatly improves COP by 13.6% over traditional timed defrost technology.

There are four basic module units — 40kW, 65kW, 80kW and 130kW. The units can be widely used in office buildings, hotels, shopping malls, and especially in places where there is a lack of water or installation space.

Also added to the range is a new Mini chiller which incorporates durable and reliable scroll compressors and operates on the ecological refrigerant R410a to ensure maximum performance. The integrated hydraulic group is complete and includes pump, expansion vessel, water flow switch kit, safety valve, auto water replenishing valve and auto air release valve.

It has an extended operating temperature range with minimum external temperature in heat pump mode of -15°C while other features include high/low voltage protection; overload protection; phase-inverse protection; water depletion protection; anti-freezed function to ensure safe and reliable use. Besides supplying cooling/heating, this unit can also supply sanitary water.

This kind of small central air conditioning unit is mainly used for high-grade flats, combination buildings, high-grade townhouse, and unitary office, restaurants, department stores, entertaining places and other places that have special air conditioning requirements. The whole range of this series is 8kW to 35kW. The refrigerant type is R410a.

Then there is the Artful inverter split, which incorporates a world-famous compressor to ensure excellent performance. The exclusive air exchanging device can exhaust indoor air and introduce outdoor fresh air inside greatly improve the indoor air quality. There is also a dry mould proof function, which makes the fan run when the unit is stopped to prevent the generation of mould and odours inside of indoor units.

The auto-intelligent defrosting improves the unit’s heating efficiency and significantly reduces power consumption. The exquisite panel design makes it suitable for all manner of installations and interior decor in homes and small offices. The whole range of this series goes from 9000btu/h to 18000btu/h. This unit can be installed widely for living rooms, small offices, etc. The refrigerant type is R410a.

Finally, there is the Free Match inverter split, which was developed from the normal Artful inverter split unit. Besides having the same features of the normal inverter split unit, one of these outdoor units can be connected with up to four indoor units freely. The whole range of this series offers capacities from 18000btu/h to 28000btu/h and is ideally suited to installation in upmarket housing, restaurants, etc.

Contact: Billy Wright, Irish Fan Distributors.
Tel: 051 - 852 404; email: bwright@irishfandist.com
High performance cooling/heating multi systems for retail & leisure

- Mitsubishi Heavy Industries high performance cooling/heating systems are designed for a variety of retail and leisure applications
- Simple, low cost installation
- Connect up to 4 indoor units to a single outdoor unit. Indoor units connected by branch piping; just two pipes connected to the outdoor unit
- Up to 28kW cooling or heating with an outdoor unit footprint of just 0.36sq m
Sanyo GHP — New M Series Line-Up

This summer will see Sanyo launching the new M-series line up of Gas Heat Pump (GHP) outdoor systems. Sanyo has been developing the GHP VRF system since 1980 and, as a result, the commercial range of GHP VRF systems is leading the industry in the development of efficient, flexible systems.

The Sanyo GHP VRF system utilises a gas-powered engine (natural gas or LPG) to drive the refrigeration compressors, and requires only a single-phase power supply. Other features of the GHP include lower CO₂ emissions, lower running-costs, no defrost-cycle required, and 100% heat-output to -20°C.

The current range will soon be supplemented by the addition of both a 16HP and 25HP outdoor unit in the simultaneous heating and cooling 3-pipe system line-up. This will supplement the 20HP 3-pipe outdoor unit already available, offering greater flexibility and a range of capacities to suit various projects of all sizes.

The new M-series will also feature the new ECO G Power 2-pipe system, rated at 56kW cooling, and 63kW heating, with a 4kW power generator. This power will be provided by a permanent magnet, non-bearing type generator located on the engine of the outdoor unit. This will allow the ECO G Power unit to not only provide a full VRF system supplying heating and cooling to the premises, but also a hot water supply generated from waste heat from the engine. In addition, it will provide a 4kW electrical supply which may be used for small power requirements such as lighting, computers, or to power the indoor air conditioning units.

In addition to the ECO G Power generator, the 2-pipe outdoor range of units can now be connected in tandem as W-Multi systems for increased capacity option, up to 50HP. When the 2-pipe outdoor-units are used in this configuration they will also benefit from part-load engine management and compressor run hour equalisation. This will reduce overall running hours by up to 40%, and give a back-up mode which supports maintenance on one of the systems, meaning no downtime of the overall system. The full range of 2-pipe units can also provide free waste-heat to heat the domestic hot-water.

With the existing benefits of no defrost operation, guaranteed heating performance down to -20°C, a single-phase power supply to the whole range, reduced running costs and significant reductions in CO₂ emissions, the new additions of the M-series GHP units will make the up-coming release a complete solution for projects of all varying sizes.

Contact: Dave Colbert, Sanyo Airconditioners Ireland. Tel: 01 - 403 9900; email: davidcolbert@sanyoaicon.com
LG's ArtCool Gallery
photo changeable
range of designer air conditioning products

Liebert HIROSS

Refrigerant 407c
Dualfluid
Freecooler
Chilled Water
Upblow/Downblow
Dx — Water Cooled
Close Control Air Conditioning

Capacity 4kW to 100kW

Carrier

Chillers
Heat Pumps
Packaged Rooftop Units
Minisplits
Fan Coil Units
Controls

Flexible and reliable
VRF system
Midea — Climate Solution for Green Environment

Midea Commercial Air Conditioning Company (MCAC) has formed a trading partnership with Coolair to distribute its extensive Midea range of air conditioning products in Ireland.

A subsidiary company of Midea Group, one of the largest manufacturing conglomerates in China, MCAC specialises in the production of commercial air-conditioning and related services. It has a market valuation of $3.5 billion, employs 70,000 people, and exports to 110 countries and regions throughout the world. Annual sales are expected to reach $12.5 billion by the year 2010.

Coolair is one of the leading air conditioning companies in Ireland with an established reputation for providing quality-driven, customised, air conditioning solutions. Coolair has a wealth of in-house engineering expertise which it brings to bear on every project, no matter how big or small. It already has strong partnership agreements with other market-leading brands and this new link-up with Midea strengthens still further the quality and scope of solutions it can now provide.

MCAC has a 90,000 sq m workshop with 15 world-class advanced production lines, producing mainly multi system units, unitary a/c sets, and one-off refrigerant products. Its product line-up includes 12 major series and more than 1,000 models. Annual output is 700,000 thousand units with up to 120,000 monthly during peak season.

Midea has a dedicated environmental management system (EMS) which is rigidly applied to all manufacturing plants and is based on internationally-recognised ISO 14001 standards. The intention is to reduce further the environmental impact of its product activities and, equally so, that of its products once they are in the field. Consequently, all Midea products are compliant with the European Directive on the Restriction of the Use of Hazardous Substances in Electrical and Electronic Equipment (the RoHS Directive). In addition, Midea has established management systems for the collection and recycling of waste electrical and electronic products to comply with the WEEE Directive.

The sustainable theme is further emphasised by the energy efficiency of its products. Apart from performance and output efficiencies, Midea also promotes the use of high-efficiency refrigerants such as R410A, the leading ozone-friendly, energy-efficient, refrigerant.

The massive scale of production is matched with a similar emphasis on research and development. Vast sums are spent annually developing new product lines incorporating innovative features and advanced technology. This has resulted in the dynamic Midea portfolio from which Coolair has selected specific models which are ideally suited to meet the needs of the Irish marketplace.

Midea products currently stocked by Coolair include:—
1. Non-inverter ceiling cassette systems (3.5kW to 14kW);
2. Inverter ceiling cassette systems (5.3kW to 14.1kW);
3. Non-inverter wall-mounted systems (3.5kW to 8.2kW);
4. Inverter wall-mounted systems (3.5kW to 5.3kW);
5. Window units (5.3kW);
6. Portable units (3.5kW).

Contact: John Goold, Coolair. Tel: 01 - 451 1244; email: info@coolair.ie
The new Toshiba VRF systems are state-of-the-art for energy efficiency and modularity. The new MiNi-SMMS heat pump system, ideal for residential applications, compliments the successful SMMS heat pump and SHRM heat recovery range. Toshiba's VRF systems now deliver capacities from 12 to 150 kW to fulfill both residential and commercial needs.

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

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

^*For 8HP unit
Hitachi — Inspire the Next

Hitachi air conditioning has been described as the art of exploiting the latest ideas and developments in technology to create a range of innovative products which provide more comfortable and productive environments. It is also said to be an art executed with a responsible concern for the environment. Ecological thinking begins at the very first stages of new product design and continues throughout production, installation procedures, equipment and operation.

Hitachi is at the forefront of research and development, turning new ideas and innovations into new products. Of its $80 billion sales worldwide, something like 4.5% is invested in R&D programmes. This has led to many industry “firsts”; examples of which include the technologically-advanced and acclaimed scroll and semi-hermetic screw compressors. These have been incorporated into Hitachi’s air conditioning systems and water chillers which in turn has revolutionised air conditioning worldwide.

Hitachi’s current range of advanced air conditioning products comprise a wide range of units coupled with a choice of cutting-edge control systems. The extent, scope and diversity of the range means that Hitachi can provide solutions to meet every possible air conditioning application or specification. All are innovative and at the forefront of AC developments.

A typical case in point is the new Set Free FSN series of variable refrigerant flow systems. These units were devised following extensive R&D and feature a host of ground-breaking features which make them extremely environment-friendly. The are small and compact to suit next-generation buildings, offer excellent outputs, are highly energy-efficient and are easy to install. Features include:

- New, high-efficient, 2-blade fan;
- High-efficiency DC inverter fan module;
- High-efficiency DC inverter compressor;
- Vector control DC inverter;
- High-efficiency constant speed compressor;
- Large-capacity DC fan motor;
- New energy-saving heat exchanger;
- Supercooling circuit.

Also new from Hitachi is the Samurai range of screw-type water chillers. Both cooling only and heat pump models are available—cooling only from 112kW to 1030kW; heat pump from 106kW to 585kW. The Samurai water-cooled chiller is available from 120kW to 696kW (optional heating model from 161kW to 824kW) and is one of the most efficient water-cooled chillers on the marketplace.

A key factor enabling such a footprint is the use of plate heat exchangers for both the condenser and evaporator. Both air and water-cooled ranges utilise Hitachi’s own highly-reliable twin-screw compressor. When combined with Hitachi’s advanced electronic control system, the Samurai chiller can provide full modulation capacity control, therefore allowing the chiller to accurately match the required cooling load while still maintaining the outlet water temperature to within +/- 0.5°C.

Contact: Fergus Daly, Hitachi Europe. Tel: 01 - 216 4066; email: fergus.daly@hitachi-eu.com
Established in 1982 Tempar Ltd Services Include:—

— Site Surveys
— Sales
— Installation
— Commissioning
— After Sales Service
— Preventative/Planned Maintenance
— Emergency Services

Gas Fired Heating & Cooling With Use of Renewable Energies

— Absolute Reliability
— Long Lifespan
— Minimum Electric Power Required
— High Energy Efficiency
— Simultaneous Heating & Cooling
— No Refrigerant Leaks
— Low Noise
— Modular Design Ensures Flexibility
— No Compressors
— Low Maintenance

Tel: 01 - 460 4066 Fax: 01 - 460 4077 email: service@tempar.ie
Marren & McQuay for Engineering-Led Solutions

McQuay International is a global leader in systems solutions for air conditioning, heating, ventilating and refrigeration. It delivers engineered, flexible solutions for commercial, industrial and institutional HVAC requirements with reliable products, knowledgeable applications expertise and responsive support. In Ireland this comprehensive McQuay service is provided by Marren Engineering, its strategic partner in the sales, distribution, installation and commissioning of its products and systems.

Marren Engineering offers complete turnkey HVAC solutions, from design and supply right through to installation and after-sales maintenance. Thanks to its dedicated in-house engineering capabilities and highly-skilled site technicians, it is now firmly established as one of Ireland’s leading specialists in the sector.

There are three distinct operational centres within the company — Marren Contracting, Applied Engineering Products Sales and Marren Maintenance. What underpins the activity of each — and helps cement their interactivity — is adherence to a strict code of engineering excellence.

By combining Marren Engineering expertise with the high performance of McQuay products, the most flexible, innovative, turnkey solutions are provided for all project types and applications. The engineered flexibility of the products allows Marren Engineering turnkey clients’ HVAC systems to meet the specific requirements of each application. Key benefits include lower installed and operating costs; high energy efficiency; quiet operation; superior indoor air quality (IAQ); and low cost maintenance and service.

McQuay manufactures a complete line-up of air-cooled chillers with a variety of compressor types to match every application and budget size. Capacities range from 35kW to 1580kW with two principal R143A-operating energy-efficiency ranges offered — the ALS (600kW to 1589kW) and the McEnergy (180kW to 580kW).

Standard or high-efficiency options are available, each offering as many as five different acoustic versions down to 62dB(A) at 1m.

Large air-cooled chillers provide an economical means to produce chilled water without the requirement for a cooling tower, avoiding additional system complexity and maintenance.

Additionally, McQuay offers a range of screw compressor R470C chillers known as the McPower range for smaller applications and the scroll compressor R470C McSmart range (35kW to 160kW).

McQuay also manufactures an extensive range of water-cooled chillers. Sizes range from 35kW to over 9450kW. The WHS range (335kW to 1893kW) features McQuay’s efficient single-screw compressor which was specially designed and optimised for use with HFC 134a.

For smaller applications, the single-screw Ecoplus range starts from 165kW and rises to 540kW. There is also a cost-effective R410A screw compressor chiller called the Proximus Range.

For larger-scale needs up to and over 9459kW, McQuay offers its range of WCS-WDC centrifugal chillers.

Contact: Mark Dowling, Marren Engineering.
Tel: 01 — 833 4144;
email: mark.dowling@marrenengineering.ie
The new Daikin VRV III air conditioning system marks an important advance over existing systems, with many new innovative features and benefits for specifiers, installers and users. Greatest capacity (5 HP to 54 HP) • Maximum piping length extended to 165 m (outdoor unit to furthest indoor unit) • Total piping length extended to 1000 m • Lighter, modular units, easily transported by normal lift • Less refrigerant content than existing VRV systems • More energy efficient (high COP) on R-410A • Automatic refrigerant containment • Automatic charging • Backup function • Powerful diagnostic tools • Centralized control systems with web access function • And much more besides...

For more information, please visit www.daikin.ie, mail info@daikin.ie or call free on 1850 719805.
COMFORTABLE AND HIGHLY EFFICIENT
Check out the benefits!

At last, a unique control system that provides flexible, energy saving air conditioning that's perfect for hoteliers everywhere!

The Mitsubishi Electric Programmable Logic Controller*1 (PLC) connects to our G50 control systems to provide maximum control for hotels everywhere. By simply programming the indoor air conditioning units to work in conjunction with existing key card systems, the PLC achieves the highest level of control.

When the hotel room is:

- **Occupied with key card inserted.** The air conditioning is initially set to 'Auto' mode and 21°C°. From this point onwards the guests then have full control.
- **Occupied with the key card inserted and a window open.** When using the optional window sensor, the air conditioning is automatically switched off to save maximum energy.
- **Unoccupied with no key card inserted.** The air conditioning is automatically set to 'Night Set Back' mode which maintains the room temperature between 16°C° and 26°C°.

Using the PLC with our advanced control systems (G50 or Baby G50), enables all guest rooms to be easily monitored and/or controlled from a central point in the hotel, ensuring utmost comfort and maximum efficiency throughout.

- **Ensures maximum comfort and efficiency** by preventing guest rooms being too hot or too cold prior to occupation.
- **Saves energy** by avoiding guests inadvertently setting the wrong mode (ie. Heating/Cooling instead of Auto).

for more control than ever call 01-4198800 or visit www.mitsubishielectric.ie

Published by ARROW @TU Dublin, 2008
Core AC — Strength in Partnerships

Quality of service, coupled with quality products from brand-leading manufacturers, is the cornerstone of Core Air Conditioning's trading philosophy and the basis upon which it has captured significant market share since it was established in 1996. The composition of the product portfolio is intended to provide total solutions capability with each of the principals represented bringing complementary product ranges to the mix.

As it currently stands the key names represented include Carrier, Liebert, Hiloess and LG. Individually, each of these manufacturers offers a choice of diverse air movement solutions. Taken together, they allow Core Air Conditioning to offer a comprehensive array of options which means that it can cater for virtually every conceivable market application.

"In compiling the Core Air Conditioning portfolio", says Managing Director Austin McDermott, "we took a decision from the outset to only deal with market-leading, quality-driven manufacturers, that is very much reflected in the current line-up. Down through the years we have also engaged with a small number of other manufacturers, each time with the objective of strengthening the combined product offering.

“Today’s line-up is particularly strong. However, we are always conscious of new and developing trends, and of emerging market requirements. Where necessary, we will source other complementary ranges if the need arises to satisfy a particular application. Flexibility is essential in devising customised solutions for each project and we regard this as a particular strength of ours.”

Underpinning this strength is the relationship-driven nature of Core's business strategy. While ultra-professional and management-systems led, it is a partnership arrangement involving installers, consultants, clients and suppliers alike. Effectively, Core Air Conditioning acts as the conduit through which the clients' needs are identified and an appropriate solution devised which is cost-effective, energy-efficient and complies with the growing number of regulations and statutory requirements which now apply to the ac sector.

A critical element in delivering such ambitious results is the experience and technical knowledge, not just of Core in-house personnel, but also of its dealer/installer network. To that end it operates an ongoing training programme which ensures that engineers are kept fully up-to-date with new product and technology developments. This is done prior to these innovations being introduced to the marketplace so there are no teething problems, either during or after these products and systems are installed in a project.

“Essentially”, says McDermott, “what we provide is a holistic solution which does not stop once the project is installed and commissioned. It also extends to after-sales service support. If a client has a difficulty we operate on the basis of a no-fault reaction ... the problem must be tackled and resolved immediately; there is plenty of time later to discuss the why's and wherefore's of what went wrong and who was to blame. The fact is that things can, and so, go wrong. The key lies in being responsive and responsible — we take pride in our ability, and willingness, to do just that.”

It is this attention to detail which distinguishes Core Air Conditioning from many of its competitors.

Contact: Austin McDermott, Core Air Conditioning.
Tel: 01 - 409 8912;
email: info@coreac.com
Midea Creates A Better Life
Mitsubishi Electric YHM Makes Replacement Cost-Effective

Air conditioning equipment installed as recently as 10 years ago is an energy-guzzling monster compared with the latest equipment now on the market. So, Mitsubishi Electric has addressed this issue by devising new models to replace such equipment. However, in seeking to resolve the problem Mitsubishi Electric also recognised that cost is a significant part of the equation and this has been taken into account in the final solution put forward.

The result of this massive market research and analysis is City Multi YHM-A, Mitsubishi Electric’s answer to large-scale VRF applications. The performance of City Multi is second to none while it also offers a substantial increase in energy efficiency, with corresponding EER/COP ratings.

City Multi Y Series offers a simple and flexible solution where there is a demand for changeover capability between heating and cooling. With a wide range of 76 indoor units, up to 50 (depending on the capacity available) can be connected to a single Y Series outdoor unit.

Not only are the new YHM Series units more efficient than previous units, they are also smaller (both in height and footprint) than the previous YGM range and 33% lighter on average. In particular, YHM outdoor units can pass through a 500m-wide door and be carried in a typical 6-person lift. This makes installation in inner-city areas simple, especially where access to rooftops by crane is restricted.

High-efficiency versions can achieve a seasonal energy-efficiency (SEER) ratio as high as 6.2, 18% higher than even their immediate predecessors. However, it is when the performance of the latest equipment is compared with that installed 10 years ago that the energy-saving potential of replacement becomes apparent. The best City Multi equipment of 10 years ago had a SEER of just 2.38, compared with 6.26 for the new YHM-A Series.

The new YHM systems use heat pumps so they can also provide space heating. Once again the heat pump element, is far more efficient than those of a decade ago. Best-case figures suggest a reduction in heating energy consumption of nearly 50%, with YHM systems capable of achieving COP at least four.

Buildings served by wet heating systems using gas-fired boilers would see even greater reductions with the new YHM system.

But what of the capital cost of replacement? YHM Series has been designed in such a way that it can re-use existing pipework and wiring, thereby significantly reducing the time and materials required. That said, where a heat pump is to be installed the refrigerant pipe from the outdoor unit to the first branch joint must be replaced to meet pressure regulations.

“We have installed thousands of comfort-cooling R22 systems over the last 10-15 years and with the phase-out ban on R22 refrigerant; we can now directly replace these R22 systems with the new YHM without installing any new pipework, existing pipework can remain in-situ, saving costs on copper pipework, fittings and workmanship”, says Paul Sexton of Mitsubishi Electric.

“Using our unique City Multi replace technology means up to 60% reduction in power consumption leading to significant reduction in CO₂ emissions.”

Contact: Paul Sexton, Mitsubishi Electric. Tel: 01 - 419 8800; email: paul.sexton@meir.mee.com
MARREN ENGINEERING AND MCQUAY
An engineered solution to air conditioning

Marren Engineering works in partnership with McQuay International - global leaders in system solutions for air conditioning, heating, ventilating and refrigeration - to provide a complete range of quality chillers designed for reliability and high-energy efficiency. By combining the Marren Engineering expertise with the high performance of McQuay products, we deliver the most flexible, innovative and turnkey solutions for our clients.

MCQUAY AIR COOLED CHILLERS

Sizes range from 35 kW to 1580 kW. Designed for quiet, reliable and efficient operation. McQuay offer two main ranges of air cooled chillers run on the energy efficient R134A; the ALS Range (600kW - 1580kW) and the McEnergy Range (180 - 580kW). Standard or High efficiency options are available each offering as many as 5 different acoustic versions down to 62dB(A) at 1m. McQuay provide a range of screw compressor R407C chillers known as the McPower range and for smaller applications, the scroll compressor R407C McSmart range (35 - 160 kW).

MCQUAY WATER COOLED CHILLERS

Sizes range from 35 kW to over 9450 kW. The WHS range (335kW - 1893kW) feature McQuay's efficient single screw compressor specially designed and optimised for use with HFC 134a. For smaller applications, the single screw Ecoplus range starts from 165kW to 540kW. McQuay also offer a cost effective R410A screw compressor chiller called the Proximus Range (kW). For larger scale needs up to and over 9450kW, McQuay's offers its range of WCS-WDC Centrifugal chillers.

Marren Engineering is the sole agent for McQuay in Ireland.
From Tempar — Robur Gas-Fired Absorption Heat Pumps

With clean, safe, cost-effective and energy-efficient air conditioning (and heating) now the prime consideration in building services design, Damien Parlour of Tempar says that the Robur Series heat pumps offer the perfect solution.

There are three primary heat pump series within the range, brief details of each being as follows:—

Model GAHP-A air source, gas-fired, absorption heat pump — This unit is based on a water-ammonia refrigerating cycle and produces hot water up to 60°C. It is ideally suited to heating and producing hot sanitary water.

Applications include:—
— All hot water heating systems for light commercial, industrial and residential use, and especially those systems running with low water temperature, for example fan coils and underfloor heating;
— All systems where hot water, up to 60°C, is required;
— All systems where a large heating time amount is required or 24-hour running application;
— Systems where gas rates are high.

Robur GAHP-A absorption heat pumps are designed for outdoor installation only.

Model GAHP-AR reversible gas-fired absorption heat pump — This unit supplies chilled water down to 3°C or hot water up to 60°C. The same unit is suitable for heating or cooling by reversing the absorption cycle; using the outside air for heat rejection in cooling mode and as a heat source in heating mode. The gas efficiency at rating conditions is 140% in heating mode.

Applications include:—
— All chilled water and air conditioning and hot water heating systems for light commercial, industrial and residential use;
— Single unit systems for cooling and heating with invariable electrical power consumption;
— All systems where a large heating and cooling time amount is required;
— Systems where heating and cooling are based on gas, so that electric power supply is kept to a minimum and not increased during summer electric power demand peaks.

Key benefits include high efficiency; a single unit; reduced electric power consumption; it does not require indoor space; consistent operation with extreme outdoor temperatures; low pollution emissions; natural refrigerant fluids; and defrosting mode.

Model GAHP-W water cooled gas-fired absorption heat pump — This unit simultaneously provides hot water up to 65°C and chilled water down to -5°C. It can recover heat from renewable sources and boost the heat efficiency up to above 150%.

Applications include:—
— Installations where simultaneous heating and cooling output is required, such as process applications, and conditioning installations where cooling and preheating is required;
— Low temperature heating systems where renewable energy sources such as lake water, river water or ground water is available;
— Heating systems recovering heating from heat sources with low/medium temperature (from -2°C up to 45°C).

Key benefits are versatility of use (heating and cooling for different needs); high energy efficiency; reduced electric power consumption; wide operational parameters; environment-friendly; low NOx emissions.

Effectively, Robur Series heat pumps offer the complete cooling and heating solution for virtually every conceivable application. They do so in a cost-effective, efficient and environment-friendly manner, in addition to complying with all regulatory requirements.

Contact: Annemarie Parlour or Paul McCormack, Tempar.
Tel: 01 - 460 4066;
email: annemarie@tempar.ie
Variable refrigerant flow air conditioning systems

**Models**

- FSVN — 2-Pipe Heat Pump VRF — Set Free Mini
- FSN — 2-Pipe Heat Pump VRF
- FXN — 3-Pipe Heat Pump VRF

8.0 — 118kW
VRVIII Heat Recovery System Introduced by Daikin Europe

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

However, the new system — incorporating the best features of its VRVII predecessor — represents a significant step forward in addressing both existing and forthcoming environmental regulations. In addition to its heat recovery facility, it also offers consultants, contractors, service engineers and end-users many design, installation and maintenance-friendly refinements.

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

VRVIII HR also offers up to 200% unit diversity ratio for a single outdoor module system and 160% to 130% on double or triple multi modules. Operating range is wide at -50°C to 430°C in cooling and -200°C to 15.50°C in heating. The system supports four different-format indoor fan coil units, including the new 3600 radial airflow roundflow ceiling cassette.

Unlike contemporary VRF systems, alternate defrosting of the heat exchangers on VRVIII HR multi module outdoor allows continuous heating to be supplied from the indoor units throughout these cycles, thereby avoiding the transmission of cold draughts of air into the room area.

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

A new design BSYQ branch selector box enables the cooling/heat changeover function to be activated by pressure equalisation at the box itself rather than for the entire system. While the “night quiet” mode can be set automatically to cut in 8 hours after peak daytime temperature and run for 10 hours before reverting to normal operating mode. Design flexibility is also enhanced by the incorporation of a powerful new inverter-driven outdoor unit fan, which provides a higher ESP of 78.4Pa (58.8Pa for VRVII). Outdoor unit footprint is less than similar capacity VRVII models and piping lengths are the highest in the industry at 1000m (total system), 165m (maximum run), 90m (maximum level difference) and 90m (longest branch).

Daikin's strict adherence to "F" Gas Regulations are reflected in the unique VRVIII capacity for refrigerant containment during both charging and system operation. This important facility enables the amount of additional refrigerant charge during commissioning to be controlled automatically.

VRVIII HR takes full account of all legislative efficiency requirements by returning a 14% average increase in efficiency and 20% increase in single unit efficiency over VRVII HR.

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

Contact: Richard Smith, Daikin Europe NV (Ireland Office). Tel: 01 642 3430; email: info@daikin.ie
ART YOU CAN FEEL.

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

LIFE'S GOOD WHEN YOU SEE THINGS DIFFERENTLY.
GT Phelan Now 100% Distribution

GT Phelan has restructured and moved away from contracting to concentrate on distribution and support - its two core areas of expertise. By concentrating solely on distribution and support, the company can now offer a more dedicated and professional service to specifiers, end-users and site engineers. Installation enquiries will now be handled by an extensive list of approved contractors who will be well placed to provide quotations and quality installations of Toshiba equipment.

The sales team has also expanded with the appointment of John McKenna as Regional Sales Manager. John's role is to ensure specifiers are kept updated on the latest developments from Toshiba and to actively encourage the specification of Toshiba systems.

"John's appointment represents a valuable contribution to our sales team and we feel that his involvement with us will encourage more specifiers to consider using Toshiba as their preferred manufacturer", says Rodney Phelan. "The ability of Toshiba VRF and split systems to provide a stable environment is well proven with many buildings being conditioned using the latest-generation VRF equipment". As an established and professional distributor, GT Phelan has handled Toshiba air conditioning distribution in Ireland since 1982. Since then, the company has seen a dramatic growth in VRF installations, particularly in commercial applications such as offices and large retail stores.

Another area of growth, and one which is set to continue, is the retro-fitting of older plant with newer inverter models. "We have noticed a marked increase in sales of the new "3" Series outdoor units which are designed to be fitted onto existing pipework previously serving the old equipment", says Derek Phelan. "Pipework no longer requires replacement (except where a burnout has occurred) as the new Toshiba systems are designed to fit directly onto the old pipework.

"End users notice a dramatic improvement in the performance of their new equipment and experience a more stable working environment. Inverter compressors operating using R410a definitely help to reduce power consumption and carbon emissions", concludes Derek.

The other area of growth is the portable cooling market, an area largely influenced by the weather.

John's appointment represents a valuable contribution to our sales team and we feel that his involvement with us will encourage more specifiers to consider using Toshiba as their preferred manufacturer", says Mandie O'Loughlin. GT Phelan offers 3.5kW, 4.5kW models for sale and rental, and one 6.1kW unit for sale only.

Contact: Rodney Phelan, Derek Phelan and Mandie O'Loughlin, GT Phelan.
Tel: 01 - 286 4377;
email: info@gtphelan.ie
Irish Fan Distributors

N° 1 Stop shop for:
Ventilation • Fans • Ducts • Air conditioning • Heat recovery

10,000+ ATC products under one roof!

Fans
Spiral duct & Fittings
Air conditioning
Fire dampers

VCO
Diffusers
Heating batteries
Flexible ducts

Fitters
Fixations
Tools
Transfer grilles

Valves
AGA- Air curtains
GTDI Heat recovery
ATC AHU

Published by ARROW @TU Dublin, 2008
www.irishfandist.com
tel: 051-852404 - fax: 051-873440
A Breath of MHR Fresh Air From Mark

Mark 5v is a name widely-known and respected throughout Europe as a leading player in air movement technology. Based in Holland, it has a wholly-owned subsidiary called Mark Eire which has operated out of Coolea, Macroom, Co Cork since 1987.

Standing on approximately 60,000 sqft, Mark Eire’s newly-refurbished manufacturing plant and offices are a massive, ultra-modern complex. Not surprisingly, its design is in keeping with the concept of sustainability and incorporates all manner of energy-efficient and environmental-friendly building services.

Most of these come from its own range, including the sophisticated control systems and integrated building management systems. There is even a large-scale water recovery/rainwater collection system.

Mike O’Donoghue has been at the helm of Mark Eire from its earliest days and down through the years he has presided over many significant developments in the company’s history. The wealth of experience and technical know-how represented by the 70-strong workforce — coupled with considerable and ongoing investment in R&D — has led to the introduction of a great many innovative products.

Consequently, today’s product portfolio is massive, offering a diverse choice of heating, ventilation and air conditioning solutions designed to cater for virtually every conceivable application. What they all have in common is a host of features and benefits which deliver optimum performance efficiencies at cost-effective prices. Moreover, they all comply with — and in many cases surpass — related environmental and regulatory requirements.

New products are constantly coming on stream, one of the latest being the new Mark MHR which provides fresh air all year round at minimal cost, has zero carbon footprint, and is 100% sustainable.

Mark’s MHR uses a counter-flow heat recovery coil to extract all the beneficial energy in the waste air stream which in the past was dumped to the atmosphere. This means that all heat produced from lights, radiators, people and computers is collected and used to heat the fresh air.

The incoming fresh air does not mix with the dump air so the occupants get 100% fresh, clean air all the time. F7 Ecoplast filters remove even the smallest particles out of the air.

Power consumption is kept to a minimum, thanks to the use of TAC technology (total air control) DC motors. This means that the fans, with built-in intelligence, only use the required energy.

“Apart from the benefits provided by each of the individual components within the Mark MHR units, the key is the manner in which we have married all of these together“, says Mark O’Donoghue.

“After all, there is no point in saving thermal energy and wasting electrical energy. The Mark MHR saves both.”

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

By using F7 Ecoplast filters even the smallest particles can be removed from the air.
LG Driving Sustainability Through Innovation

LG is to introduce its biggest ever number of new products in 2008 with additions in all of the major sectors—splits, ArtCool, condensers, VRF, Mini VRF, cassettes and other indoor units.

This year will see a rolling programme of launches in time for the season. There will be new cassettes, new ultra-slim cassettes, new condensers for VRF and Universal ranges, new multi V condensers, a water-based VRF system, a new addition to Multi V Space and new AC Smart control systems.

All products in the range benefit from the advanced technical R&D back-up, investment and expertise of the giant LG Group which claims to be the world’s number one producer of air conditioners.

Indeed, LG claims to hold the record for the greatest sales in air conditioners in the world since 2000. What’s more, the newly-launched, energy-saving, ArtCool Gallery series, which uses a new refrigerant, is set to boost sales further, especially in Ireland where the brand is gaining increasing market share.

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

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

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

Through sustainable management, LG Electronics is helping to produce a clean environment worldwide, including Ireland, through its appointed distributors.

Contact: Austin McDermot, Core Air Conditioning.
Tel: 01 - 409 8912; email: info@coreac.com; Ken Lawlor, Sensible Aeon Solutions. Tel: 01- 669 4667; email: kenlawlor@sensibleac.ie
Air Movement & Air Quality

New MHI Ecolution Series From 3D Air Sales

Mitsubishi Heavy Industries has further extended its high-efficiency air conditioning and heat pump systems portfolio with the introduction of three new ranges under the Ecolution Series banner. They include the SRK wall-mounted and inverter wall-mounted systems, and the SCM inverter multi-systems. Brief details of each are as follows:

SRK Wall-Mounted System — A typical SRK system consists of an indoor unit mounted at high level on a wall, connected by two small copper pipes to a weatherproof outdoor unit, which can stand on the ground, on wall brackets or on a flat roof or balcony.

The indoor unit comes with a hand-held controller which is used to switch the unit on/off and to adjust the temperature and fan speed. The system provides cooling or heating, depending on room conditions and the selected temperature. During the cooling operation the units will also reduce humidity by extracting moisture from the room air.

<table>
<thead>
<tr>
<th>Model</th>
<th>Cooling (kW)</th>
<th>Heating (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRK28-HG</td>
<td>2.6</td>
<td>2.8</td>
</tr>
<tr>
<td>SRK40-HG</td>
<td>3.6</td>
<td>4.0</td>
</tr>
</tbody>
</table>

SRK Inverter Wall-Mounted System — The new SRK inverter range combines sophisticated micro-processor energy-saving controls with advanced refrigeration technology. Instead of switching on/off as dictated by a room thermostat, the output capacity — both heating and cooling — is automatically varied to match the requirement at the time. This saves energy and provides stable, comfortable temperature conditions.

Typical installation is similar to that for the SRK wall-mounted system but an additional 24-hour timer control is included. Alternatively, an optional wired controller is available for certain models.

<table>
<thead>
<tr>
<th>Model</th>
<th>Cooling (kW)</th>
<th>Heating (kW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SRK-ZGS &amp; ZE</td>
<td>2.5 - 8</td>
<td>4.5 - 10.5</td>
</tr>
<tr>
<td>SRK-2GX</td>
<td>2.5 - 5.3</td>
<td>4.5 - 7.9</td>
</tr>
</tbody>
</table>

Pulse Amplitude Modulation Inverter and the new DC compressor provide the required improvements in efficiencies for both cooling and heating operations.

SCM Inverter Multi System — This system consists of one outdoor unit connected to two, three or four indoor units, making it ideal for multi-room applications. The outdoor unit is fully inverter driven and is connected to each indoor unit by a pair of small-diameter copper pipes, plus an electrical supply.

The system will operate in either cooling or heating mode and the variable capacity outdoor unit will automatically adjust to suit the combined cooling or heating requirement. Unoccupied rooms can have units switched off to save energy.

SKM wall-mounted indoor units now include the Mitsubishi Heavy Industries' enzyme-sterilising filter and the photocatalytic deodorising filter.

Wired remote controllers are available as an option on the STM cassette and the SRRM ducted units.

Contact: Michael Clancy, 3D Air Sales, Tel: 01-4627570; email: 3dar@eircom.net
CIBSE News

CIBSE CPD Lecture Programme Round-Up

The last two months have seen quite a number of interesting CPD lectures in the CIBSE programme with large numbers attending the various events held in Dublin, Cork and Limerick.

The series kicked off with Michael McNerney, Energy Manager, Tesco Ireland, making a presentation on energy efficiency in the retail sector at the award-winning Lifetime Lab in Cork. Michael examined the approach to energy conservation in the construction and operation of new retail stores, and the refurbishment of existing buildings. Specifically, he looked at staff energy awareness and ownership; and the design of future stores.

Next came the Port Tunnel in Dublin. Karl Brannigan outlined the design approach and latest technology used in the tunnel in an address presented in Engineers Ireland in Clyde Road, Dublin 4. This was then followed by a site visit to the tunnel and a tour of the central building and external switch room.

Then it was back to Cork and the Lifetime Lab where Dermot Killeen of Calor Gas Ireland outlined the design principles and installation procedures for LPG installations with specific emphasis on LPG product knowledge; gas regulations and standards; bulk tank installations; cylinder storage installations; installation pipework; and gas utilisation.

On the same night Cathy Mannion, Director of Environment, Retail & Consumer Affairs at the CER, presented a lecture at the Kilmurry Lodge Hotel, Dublin Road, Limerick. The topic was demand side management and smart metering.

Back Row: Lee Harrison with John Lavin and Suzanne Dooley
Front Row: Margaret Dolan with Karl Brannigan and Patrick Kane

Cathy explained how smart metering can help reduce the overall peak energy demand by users; and its ability to control the use of energy. The cost and implications of future meter-reading methods were also discussed.

Finally, it was back to Dublin and the Mount Herbert Hotel in Sandymount where Ant Wilson, Director, Faber Maunsell, gave an address on the environmental performance of facades. The presentation covered heating and cooling loads and how to minimise solar overheating in summer and maximise useful solar winter gains. The presentation ended with a demonstration of the CIBSE Facades Selector Toolkit.

Lee Harrison with Ant Wilson; Margaret Dolan, Chairman, CIBSE Republic of Ireland Branch; Martin Jones and Mathew Doyle
Face to Face invariably involves an interview with an established industry figurehead but this month we have gone back to basics ... literally. Gary Power is a first year engineering student at Trinity College, Dublin, and he kindly agreed to sit in the hot seat and field our questions.

Like all modern young men Gary displays a youthful exuberance and sense of excitement at what the world has to offer. He is forthright and confident, yet honest enough to admit that he is still unsure as to what he sees himself doing for a living. What he is certain of is that it will be engineering-related.

Gary’s interest in engineering stems from the family background — his father Damien has his own engineering business. That said, it is not a case of blindly following in his father’s footsteps. Because of the exposure he has had to engineering during his formative years, he now has a genuine interest in, and fascination with, all things engineering.

He is especially attracted to mechanical engineering but acknowledges that it is far too early to decide what branch of engineering he will eventually specialise in. Indeed, such is the varied and diverse nature of what he has been exposed to already on the course that he sees himself focussing on one aspect first and then perhaps doing another course or degree in another aspect.

While very happy at this stage with the course he has chosen, Gary was taken aback somewhat by the heavy workload. Between lectures and tutorials his day-to-day work schedule is nine to five, five days a week. On top of that there is the homework and collaborative project work. It is seriously tough and not at all what he expected. Apart from additional study time, Gary reckons that his basic workload involves a 38-hour week. So much for the carefree life of the first-year student!

That said, he finds it extremely interesting. Doing nine subjects is demanding but also stimulating, especially as the cross-over relevance of many of the subjects becomes more apparent. Learning how engineering impacts on virtually every aspect of modern-day living is also very interesting.
"While very happy at this stage with the course he has chosen, Gary was taken aback somewhat by the heavy workload. Between lectures and tutorials his day-to-day work schedule is nine to five, five days a week."

Gary says that, for the most part, the lecturers are excellent. They each have their own individual style and some of them even manage to make the learning experience fun. The fact that they represent many different nationalities also makes for varied approaches and this too helps keep the interest of students.

There are 170 students in Gary's year, 40 of them girls. He says the girls receive preferential treatment and get monetary incentives for performing well in certain exams. While not sexist, he seems a little peeved at this, arguing that equality has to cut both ways. Mind you, you don't get the impression in talking with him that it in any way interferes with his willingness to work on projects and socialise with the girls!

Given the contained physical environment of Trinity virtually everyone in the year knows one another. You can't walk about without bumping in to someone in your year. This sense of identity and comraderie is further reinforced by the teaching methodology which places great emphasis on collaborative project work. Students are actively encouraged to work with one another and there is only one subject out of the nine that is done solely on your own.

Moreover, this inter-active philosophy seems to permeate the entire engineering faculty. Listening to Gary talk he constantly refers to what so-and-so in second year said to him or what the guy in fourth year told him about his career plans.

Like all young students he talks of a possible year out. However, this is not with a view to getting away from his studies but more to gain experience while putting the engineering skills he has learned to date to good use. Something like a water irrigation project in a third world country appeals.

In looking to the future, Gary is motivated more by an interest in engineering rather than making money. He is mature enough to know that the career path he opts for will impact on his earning capability but, so far at least, is steadfast in his intention to pursue his interests rather than the gravy train. He also realises that, depending on the branch of engineering he opts for, he might not easily find work in Ireland.

But all of this is in the future. For the moment Gary Power, first-year engineering student in Trinity College, Dublin, is a very happy and contented young man. Maybe we'll return to Gary over the next couple of years to monitor his progress.
MEBSCA Annual General Meeting

"These are risk transfer contracts with huge additional administrative burdens."

The Mechanical Engineering and Building Services Contractors Association (MEBSCA) held its Annual General Meeting recently. The meeting was well attended and various topics were discussed, including apprenticeships, forms of contract, training, industrial relations and health and safety.

Chairman John Doherty (McGrattan & Kenny Ltd) noted that one major area of concern for members was the introduction of new forms of contract for publicly-procured projects in February 2007. Under the new conditions the practice of using provisional sums and nominated sub-contractors has been discontinued. It is likely that winning contracts under the new system will be radically different with far greater emphasis on securing work from main contractors.

He cautioned members, saying: "these are risk transfer contracts with huge additional administrative burdens and contractors tendering for public sector work must become expert in the evaluation and pricing of these risks".

Those present were advised that a form of NN Sub-Contract has been produced by the CIF Sub-Contract Sub-Committee for use when the sub-contractor is novated or named by the employer. There is also a necessity to produce a domestic form of Sub-Contract which the Sub-Committee is now focussing on.

The Chairman urged members to attend the CIF training programmes on the new Forms of Contract and one of the programmes in early 2008 will be specifically targeted at the mechanical and electrical contracting members.

He acknowledged that 2008 will be a difficult year for MEBSCA members but stated that the Association will continue to represent members’ interests going forward and that further training programmes will be developed in 2008 to address the needs of member companies.

The meeting concluded with the Chairman thanking all the members for their attendance and contribution in 2007, especially those involved in the various Committees and Sub-Committees who have worked tirelessly over the past year. He also urged members to support the MEBSCA Annual Golf Outing which will take place on 10 August 2008.

John Doherty will remain in office as President for 2008, with Michael Kennedy (Mercury Engineering) elected as Vice-President. Desy Haughton (Haughton & Young) was welcomed as a new member to the MEBSCA Council.

A presentation was made to Edwin Kenny, IIF Process and Mechanical, on his retirement from the Association and to Liam Kelleher who recently retired from the post of Director General, CIF.
Another Side Of ...  

Dave Colbert

He comes from a land down under but, as the years pass, Sanyo's Dave Colbert becomes more and more naturalised. He has put down firm roots in Ireland since arriving on our shores in 2000 and in fact is now eagerly looking forward to his imminent marriage to an Irish lady.

This is a far cry from the adventurous young man who set out to see the world from his home town on the North Island of New Zealand many years ago. Coming from a small, beach-side community of less than 10,000 inhabitants, Dave's leisure activities were as you would imagine. They included everything from the ubiquitous surfing to orienteering, cycling, triathlons, hiking and — by way of a change — photography.

He and his brother regularly made excursions into the bush and also participated in competitive mountain running challenges lasting anything up to four or five days. Throughout these adventures he faced many challenges and tales of being stranded and lost in the wilderness in freezing temperatures and of having to call out the emergency services and be rescued. This, he insists, only happened once and he is equally emphatic that it was his hiking companion, rather than he, who needed rescuing.

Yeah, we believe you Dave!

While unable to pursue all of these diverse activities in Ireland, Dave has maintained his fitness levels and is still a keen hiker and hill walker. That said, his enthusiasm for the big adventure is always there and it was perhaps this — coupled of course with the fact that it was for a charitable cause — which prompted him to sign up for a sponsored walk up to the famous Base Camp on Everest.

He travelled in a party of 14 and, despite only carrying a back-pack with just a day’s provisions — porters carried the vast bulk of their supplies — he still found it tough and demanding. Altitude sickness was the biggest danger and, while some of the party succumbed to this problem, Dave was only mildly affected.

It took them five days to reach Base Camp, staying in shacks along the way. Apart from not having to pitch tents every night, some of their porters always went ahead of them and had steaming hot garlic soup waiting at each stop-over point. The decent is much easier and some of the party, including Dave, made it back to the starting point in two days.

He also took the opportunity to scale another lesser peak adjacent to Base Camp. Because of the altitude he found this even tougher still. Just about everyone stopped to admire the view every couple of meters ... and to catch their breath!

All in all it was a spectacular adventure and one which he hopes to repeat at some future date. In the meantime he continues to keep in shape with strenuous hiking expeditions and long bike rides.
The annual BTU Team Scramble was held, as usual, in Hermitage just before Christmas with ten teams of four participating on the day. Main sponsor was Killarney Plastics who provided magnificent hampers for the winners and vouchers for virtually everyone who played. The three primary team winners were made up of the following:

**First**
Peggy Smith, John Lavelle, Liam Mc Dermot and Oliver Sharkey

**Second**
Pauline Littlefield, Jim Bollard, Michael Matthews and Finian O’ Donohoe

**Third**
Lillian Gillen, Tony O’ Leary, Gerry Tobin and Damian Mooney

Traditionally, the presentation of the Player of the Year Award and Matchplay Award also take place on this occasion. Seamus Kiernan was this year’s Player of the Year, which was sponsored by Eurofluid; while Mick Matthews was the Matchplay Winner, and this was sponsored by Grundfos.

Congratulations to all.
Construction to Feature Strongly at Energy Show

This year’s Energy Show — to be held in the Main Hall, RDS, on 16/17 April — will be the biggest to date. Originally held in 1996, the Energy Show has grown significantly in recent years and is now firmly established as the national showcase for the sustainable and renewable energy sector.

Over 130 companies, many from outside Ireland, will exhibit and many of the technologies being demonstrated will be on display for the first time in Ireland. The latest professional advice and guidance from qualified persons operating at the forefront of areas such as combined heat and power (CHP), energy management, biomass, PV and solar thermal energy will also be available at the show. This will make it a unique and valuable hub for information of interest to anyone in the construction profession.

In addition to the two-day trade exhibition, the Energy Show also incorporates a comprehensive seminar programme covering all aspects of energy efficiency and renewable energy relevant to Irish business. The seminar programme also includes collaborative break-out sessions where insights and knowledge on current issues, best practice and future developments on achieving low energy consumption and minimisation of associated carbon emissions are discussed.

The show now attracts a diverse array of exhibitors and visitors, not just from Ireland but from across Europe. While visitors attending the show come from a wide-ranging background, the event is specifically aimed at businesses or individuals with a professional interest in, or responsibility for, energy use.

The theme of this year’s show is “Meeting Ireland’s Energy Challenge” and the seminar programme will include an increased number of speakers from abroad who will share insights and expertise from their own countries with the aim of enhancing both new thinking and best practice in Ireland.

Products and services featured at the show will include:

- Energy management systems;
- Monitoring and targeting;
- Combined heat and power;
- Boilers, ancillary equipment, services and testing;
- Compressed air;
- Fuel suppliers and utilities;
- HVAC products;
- Lighting and lighting controls;
- Instrumentation, controls and data collection;
- Variable speed drives;
- Maintenance and service contractors;
- Biomass equipment suppliers;
- Renewable energy consultants;
- Heat pump suppliers;
- PV and solar thermal suppliers;
- Wind energy suppliers.

The Energy Show commences at 8:30am on Wednesday, 16 April and runs for two days. Additional information on the event can be found on Sustainable Energy Ireland’s website — www.sei.ie/energyshow

Products and services featured at the show will include:

- Energy audits;
- Energy management systems;
- Monitoring and targeting;
- Combined heat and power;
- Boilers, ancillary equipment, services and testing;
- Compressed air;
- Fuel suppliers and utilities;
- HVAC products;
- Lighting and lighting controls;
- Instrumentation, controls and data collection;
- Variable speed drives;
- Maintenance and service contractors;
- Biomass equipment suppliers;
- Renewable energy consultants;
- Heat pump suppliers;
- PV and solar thermal suppliers;
- Wind energy suppliers.

The theme of this year’s show is “Meeting Ireland’s Energy Challenge” and the seminar programme will include an increased number of speakers from abroad who will share insights and expertise from their own countries with the aim of enhancing both new thinking and best practice in Ireland.

Products and services featured at the show will include:

- Energy audits;
- Energy management systems;
- Monitoring and targeting;
- Combined heat and power;
- Boilers, ancillary equipment, services and testing;
- Compressed air;
- Fuel suppliers and utilities;
- HVAC products;
- Lighting and lighting controls;
- Instrumentation, controls and data collection;
- Variable speed drives;
- Maintenance and service contractors;
- Biomass equipment suppliers;
- Renewable energy consultants;
- Heat pump suppliers;
- PV and solar thermal suppliers;
- Wind energy suppliers.
Testing & Certification

Last month's article broadly outlined the recent changes in Irish legislation relating to the electrical sector and how the major players, including the Commission for Electricity Regulation (CER) and the Electro-Technical Council of Ireland (ETCI), are positioned to address the needs for safety.

This month we investigate the current criteria in relation to one of the issues addressed by legislation — testing and certification — and how the code of practice for low voltage electrical installations — The National Rules for Electrical Installations (ET 101: 3rd Edition, published with amendments, 2006) — deals with such an important issue (see Figure 1).

The ETCI intend to publish the 4th edition of the Rules (ET 101: 4th Edition, 2008), which should present an opportunity to harness and deepen the synergy that exists between the ETCI and CER and the latter's role in regulating the sector.


Part 6 of the National Rules for Electrical Installations is divided into three Chapters:

— Chapter 61: Verification and Testing
— Chapter 62: Periodic Inspection, and
— Chapter 63: Certification and Reporting

The Rules state that the person who carries out the testing and inspection of electrical installations must be competent and be able to ensure their own safety, as well as that of others in the vicinity. It follows that s/he must be skilled and has experience of the type of installation to be inspected and tested. This should ensure that accidents do not occur to people, to livestock, or to property during the testing process.

The Rules do not define the term "competent", which can be assumed to imply a qualified electrician (at minimum) or electrical engineer — something which will hopefully be addressed by forthcoming regulation of the electrical sector by CER.

ET101: 3rd Edition, 2006 requires that every new installation, and every major alteration or extension to an existing installation — after completion and before being made live — shall be inspected and tested so as to verify, as far as is practicable, that the requirements of the Rules have been fulfilled. In practice, some tests can only be made after the installation has been made live. Inspection and testing is the subject of Part 6 of the ETCI Rules.

The precautions to be taken by the tester should include the following:

— To ensure that all safety precautions are observed;
— To be competent in terms of having a clear understanding of the installation; how it is designed and how it has been installed;
— To ensure that the instruments to be used for the tests are appropriate in terms of functionality, safety of operation and calibration;
— To be aware of the dangers associated with the use of high voltages for insulation testing.

Chapter 61

This chapter is concerned with the visual inspection and testing of installations before they are put into service. One could argue that a visual inspection might not go far enough in order to satisfactorily address the issue of inspection. Also, a comparison of results previously documented would offer assurance that compliance with the requirements of the standard is being met.

Section 610: General Requirements

Every new installation and every major extension to an installation shall be inspected and tested to verify that the requirements of the Rules have been fulfilled. The person
Testing & Certification

Testing is essential to ensure that any faults, not previously identified during inspection, may be found, and to verify that the installation complies with the requirements of the Rules. To ensure compliance with the requirements for a safe installation, testing should be carried out in the sequence listed in 612.1. The sequence is designed to protect the tester and others who may be within the area of the installation, against dangerous situations which could arise. If the installation should fail a test, that test and any preceding tests that may have been influenced by the fault shall be repeated after the fault has been rectified. This sequence encompasses tests prior to and post the connection of the electricity supply (as illustrated in Table 1 which outlines the main tests applicable to the majority of installations).

Some inspections are best carried out while the work is in progress because some of the installations may be concealed in the building fabric or buried underground. An installation supply disconnected. The main purpose of the inspection is to confirm that the equipment and materials installed:—

- Are not obviously damaged or defective so that safety is reduced;
- Have been correctly selected and erected;
- Comply with the relevant standards;
- Are suitable for the prevailing environmental conditions.

Some inspections are best carried out while the work is in progress because some of the installations may be concealed in the building fabric or buried underground. An installation supply disconnected. The main purpose of the inspection is to confirm that the equipment and materials installed:—

(i) The type of supply, i.e., single or three-phase?
(ii) The earthing arrangements for the installation;
(iii) Full details of the installation design including details of the main switchboard, number of circuits, conductor sizes, rating of protective devices, etc.

This information is essential because the absence of such information will render the tester compromised in so far as s/he cannot verify that the installation will comply with the Rules. In relation to carrying out the prescribed tests, the methods used should be such that no danger to people, property and installed equipment should occur during testing.

A completion certificate is also required for every new installation and major extension to an existing installation and, in the case of an extension or alteration to an existing installation, that verification of such installations does not impair safety.

Section 612: Testing

Section 612: Testing

Before testing begins, it is important that a full inspection of the complete installation is carried out with the following data:—

- The type of supply, i.e., single or three-phase?
- The earthing arrangements for the installation;
- Full details of the installation design including details of the main switchboard, number of circuits, conductor sizes, rating of protective devices, etc.

This information is essential because the absence of such information will render the tester compromised in so far as s/he cannot verify that the installation will comply with the Rules. In relation to carrying out the prescribed tests, the methods used should be such that no danger to people, property and installed equipment should occur during testing.

A completion certificate is also required for every new installation and major extension to an existing installation and, in the case of an extension or alteration to an existing installation, that verification of such installations does not impair safety.

Section 611: Visual Inspection

Before testing begins, it is important that a full inspection of the complete installation is carried out with the

<table>
<thead>
<tr>
<th>Before Connection of the Supply</th>
</tr>
</thead>
<tbody>
<tr>
<td>1  Continuity of Protective Conductors and Bonding Conductors</td>
</tr>
<tr>
<td>2  Continuity of Ring Final Circuits</td>
</tr>
<tr>
<td>3  Resistance of the Protective Conductor</td>
</tr>
<tr>
<td>4  Insulation Resistance</td>
</tr>
<tr>
<td>5  Erroneous Connections</td>
</tr>
<tr>
<td>6  Polarity</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>With the Supply Connected</th>
</tr>
</thead>
<tbody>
<tr>
<td>7  Fault Loop Impedance Tests</td>
</tr>
<tr>
<td>8  Verification of Operation of Residual Current Devices</td>
</tr>
</tbody>
</table>

Table 1: Sequence of Tests for an Electrical Installation
Testing & Certification

Chapter 62: Periodic Inspection and Testing
This chapter is concerned with the periodic inspection and testing required for an installation. No specific recommendations are detailed but the chapter does state that an installation should be inspected and tested periodically as appropriate to the use and environment to ensure that it still complies with ET 101:2006.

Chapter 63: Certification and Reporting (63.1 – 63.2)
This chapter is concerned with the certificates and appropriate documentation for the verification of an electrical installation in accordance with Chapter 61.

Following the inspection and testing of an installation, a completion certificate should be completed by the contractor or person responsible for the work. In addition to the completion certificate, the contractor or tester shall retain test record sheets containing the results of the tests carried out.

This completion certificate is required after satisfactory verification of a completed installation, extension or modification to an existing installation. Where an installation contains a sub-system provided by another installer, a sub-system completion certificate shall be provided by that installer. It is essential that the completion certificate is filled out correctly, otherwise it will be rejected.

Indeed, there is a need for clarification on a number of issues, not least of which is the subject of verification and testing. For instance, an awareness of the process makes provision for an interim certificate for a completed section of an installation is required. Such certification (for installations in excess of 50kVA) is the exception to the norm and is subject to an auditing process from the regulator.

Thankfully, along with the other areas of concern identified, we won’t have too long to wait for the necessary guidance and direction in bringing the sector forward into what’s sure to be a lively period prior to full regulation.
New Guidelines for Industrial/Commercial Certificates

The ETCI National Wiring Rules Committee TC2 has made a change in the guidelines concerning the mandatory requirements which decide when the issue of an Industrial/Commercial Completion Certificate is required rather than a Small Commercial/Domestic Certificate.

At present the decision is based on whether CT's (current transformers) are used by ESB Networks for metering a three phase installation. The change in approach is that the decision to issue the Industrial/Commercial Completion Certificate will now depend on the MIC i.e. Maximum Import Capacity of the installation. If the MIC is ≥ 50kVA then an Industrial/Commercial Completion Certificate will be required.

The reason for the change is due to the recent modifications in the certification process. This results in the electrical contractor sending the completed ETCI test certificate to their respective regulatory body who in turn check the certificate in question and if it is correct validate the certificate which enables ESB Networks to energise the relevant electrical installation.

It is difficult/impossible for the regulatory body to establish the load capacity of every electrical installation presented for connection and this fact may result in a larger installation being incorrectly connected on the basis of an invalid certificate (e.g. domestic).

This change will produce the programme logic necessary to block the use of a domestic small/commercial certificate in situations where the correct certificate namely the Industrial/Commercial certificate should have been used.

There will be little difference in the actual impact on the ground because in nearly all instances ESB Networks will use CT’s when the MIC is specified as ≥ 50kVA. RECI will need to modify its software to accommodate this enhancement which will further improve the validation process.

This new arrangement will be operational on the electronic certificate system in the near future but it will take some time before new paper certificates are issued. It is expected that all completion certificates will be fully revised and updated to take account of the new requirements which the CER will dictate.

In-House RECI Training Courses

RECI would like to remind contractors who employ a number of electricians that it is always happy to run any of its training courses in their own premises. This can often be more efficient and cost-effective for than sending electricians from time-to-time to the RECI training centre or a local venue.

Contact: Denise McAuley, RECI. Tel: 01-492 9966.
**Kohlbeck Fully Recovered**

Glad to see Dave Kohlbeck of Air Con Engineering back in action after a long and debilitating illness. Dave had been unwell for some time before doctors eventually identified that he suffered from sleep apnea.

Sleep apnea is a common, though often undiagnosed, sleep disorder in which you stop breathing during the night, sometimes literally hundreds of times and for as much as a minute or more. This causes all manner of stressful reactions in the body before the brain finally senses trouble and wakes you up. Apart from the illness itself, the not knowing the cause can be very hard to live with.

Thankfully, in Dave’s case the problem was eventually diagnosed late last year and he underwent an operation in December which has alleviated most of the symptoms. He is now fast regaining his health and looks set for a full recovery.

Heather-bombing of bogs is another novel approach. Apparently, denuded heather — caused by over-grazing and pollution — are leaking vast amounts of CO₂ into the environment. One 700 sqm area in the UK Peak District is said to emit as much CO₂ as that of a town of 50,000 people.

Hence the recent helicopter raid which saw billions of heather seeds, embedded in bales of brash or cut heather, being dropped over a vast area of moorland. The idea is to return this bare bog to squelchy green blankets of moss and cotton grasses.

Both are pioneering approaches but I think I favour the latter over Pat’s mad cow scheme.

**What Size Tax Incentive?**

Last month’s Finance Bill contained details of a welcome new scheme aimed at supporting investment in new energy-saving equipment. Expenditure on high energy-efficient equipment above a minimum figure in the three designated categories — building management systems (£5000), lighting (£3000) and motors and drives (£1000) — will qualify for 100% accelerated capital allowances in the year of purchase. This all seems straightforward enough. However, what is unclear is whether or not full capital allowances on the cost of equipment incorporating such energy-efficient features will qualify. For instance, if a high-efficient air handling unit incorporates a sophisticated management control system, is the relief granted on the basis of the total cost of the system or just the cost of the control system.

Maybe the best course of action is to say nothing and advise clients to apply for the total cost of the entire system. The tax authorities can only say no.

**Tall Tales of CO₂ Emissions**

The soon-to-be-completed Pen Peninsula project in London — at 149 metres high the larger residential tower in England — will generate its own heating and electricity on site thanks to its CHP-powered community heating scheme.

Compared to conventional heating methods, the developers claim it will reduce CO₂ emissions by 207 tonnes per year. Now, just in case you can’t get a handle on that figure, apparently it is the equivalent of the environmental benefits of a 79-hectare forest.

Can’t visualise a 79-hectare forest? That’s the equivalent of 110 Wembley stadium football pitches.

Can’t visualise 110 Wembley stadium football pitches? That’s easy and brings us right back to where we started ... its the equivalent of 11 times the floor area of the Pen Peninsula project.

**Heather-Seed Bombing of Bogs**

It’s quite amazing the variety of innovative (some would say wacky!) ideas scientists come up with to tackle CO₂ emissions. Just the other day I heard Pat Kenny on his radio talkshow suggest that cows could be kept in specially-constructed buildings and their emissions harnessed as a fuel, thereby returning a double-benefit to the environment.

**What Size Tax Incentive?**

Last month’s Finance Bill contained details of a welcome new scheme aimed at supporting investment in new energy-saving equipment. Expenditure on high energy-efficient equipment above a minimum figure in the three designated categories — building management systems (£5000), lighting (£3000) and motors and drives (£1000) — will qualify for 100% accelerated capital allowances in the year of purchase. This all seems straightforward enough. However, what is unclear is whether or not full capital allowances on the cost of equipment incorporating such energy-efficient features will qualify. For instance, if a high-efficient air handling unit incorporates a sophisticated management control system, is the relief granted on the basis of the total cost of the system or just the cost of the control system.

Maybe the best course of action is to say nothing and advise clients to apply for the total cost of the entire system. The tax authorities can only say no.

**Tall Tales of CO₂ Emissions**

The soon-to-be-completed Pen Peninsula project in London — at 149 metres high the larger residential tower in England — will generate its own heating and electricity on site thanks to its CHP-powered community heating scheme.

Compared to conventional heating methods, the developers claim it will reduce CO₂ emissions by 207 tonnes per year. Now, just in case you can’t get a handle on that figure, apparently it is the equivalent of the environmental benefits of a 79-hectare forest.

Can’t visualise a 79-hectare forest? That’s the equivalent of 110 Wembley stadium football pitches.

Can’t visualise 110 Wembley stadium football pitches? That’s easy and brings us right back to where we started ... its the equivalent of 11 times the floor area of the Pen Peninsula project.
Green stands for highest efficiency. This is what the energy label defines. The Wilo-Stratos ECO set the standard for the green energy class A. And now „Stiftung Warentest“, the internationally recognised, independent German institute tested nine heating pumps under the premise of absolute neutrality. The result: a definitive „very good“ for the Wilo-Stratos ECO. With a grade of 1.3 for energy efficiency, it is in fact the test winner, and that with a 23 % lower energy consumption than the runner-up. Exemplary? We call that Pumpen Intelligenz.
Fit & Forget

Instruments & Controls

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

Flow
Level
Sanitary
Pressure
Calibration
Environment
Signal Isolators
Leak Detection
Temperature/RH
Valves & Steam Traps
Data Loggers & Recorders

The Controls Centre,
4 Walkinstown Road, Dublin 12.
Tel: 01 - 452 2355/452 2229
Fax: 01 - 451 6919
email: info@manotherm.ie       web: www.manotherm.ie